

# ECHOLS COUNTY

## Hazard Mitigation Plan 2025-2029

Adopted on May 1, 2025

This plan produced for the Echols County Board of Commissioners by the SGRC through funding by FEMA and GEMA



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## Chapter 1: INTRODUCTION TO THE PLANNING PROCESS

### *Summary of changes*

Table 1.1. provides a brief description of each section in this chapter and a summary of changes that have been made.

Chapter 1 Section	Updates to Section
<ul style="list-style-type: none"><li>• <b>Purpose, Need, Authority and Statement of Problem</b></li></ul>	<ul style="list-style-type: none"><li>• Language update to reflect that this was an update to the existing plan</li></ul>
<ul style="list-style-type: none"><li>• <b>Local Methodology, Plan Update Process, and Participant</b></li></ul>	<ul style="list-style-type: none"><li>• Planning Committee reviewed each section and updated as necessary</li></ul>
<ul style="list-style-type: none"><li>• <b>Plan Review, Analysis, and Revision</b></li></ul>	<ul style="list-style-type: none"><li>• Planning Committee reviewed each section</li><li>• Updates made using national, state, and local data</li></ul>
<ul style="list-style-type: none"><li>• <b>Organization of Plan</b></li></ul>	<ul style="list-style-type: none"><li>• Consistent with the original plan</li></ul>
<ul style="list-style-type: none"><li>• <b>Local Hazard, Risk and Vulnerability (HRV) Summary</b></li></ul>	<ul style="list-style-type: none"><li>• Updates made using national, state, and local data</li></ul>
<ul style="list-style-type: none"><li>• <b>Adoption, Implementation, Monitoring, and Evaluation</b></li></ul>	<ul style="list-style-type: none"><li>• Evaluation method revised and updated.</li></ul>
<ul style="list-style-type: none"><li>• <b>Community Data</b></li></ul>	<ul style="list-style-type: none"><li>• Updates made using most recent available national, state, and local data.</li></ul>

Table 1.1: Overview of update to Chapter 1: Introduction to the Planning Process

## **SECTION I. PURPOSE AND NEED, AUTHORITY, AND STATEMENT OF PROBLEM**

### **Section 1.1. Purpose and Need**

This document is the official plan update to the previous Echols County Pre-Disaster Mitigation Plan Update, as approved by the Georgia Emergency Management Agency (FEMA), which took effect on March 18, 2019, and expired on March 18, 2024

This document aims to provide an overview of the hazards that may impact Echols County and outline the community's plan to mitigate the potential loss of life and damages to property and the economy that could occur with these events. Hazard Mitigation is a means to address and proactively reduce the potential impact that natural or man-made disasters may cause.

This Plan is the culmination of extensive research, comprehensive planning, and robust public engagement efforts conducted by the Echols County Hazard Mitigation Plan Update Committee (HMPUC). The HMPUC, comprised of local government officials and citizens, collaborated to develop a comprehensive strategy for mitigating hazards

in Echols County. This Plan is the result of their commitment to reduce the risk of natural hazards and the effects of those natural hazards on their communities. There are no incorporated cities located in Echols County.

**Section 1.1.2 Authority**

Each year in the United States, natural and human-caused hazards take the lives of hundreds of people and injure thousands more. Across the nation, significant public funds are allocated annually to help communities, organizations, businesses, and individuals recover from disasters. To reduce the nation’s mounting natural disaster losses, the US Congress passed the Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390, commonly known as the 2000 Stafford Act amendments, which was approved by Congress on October 10, 2000. This act required state and local governments to develop hazard mitigation plans as a condition for federal grant assistance. Among other things, this legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide. These funds include the Hazard Mitigation Grant Program (HMGP), the Building Resilient Infrastructure and Communities (BRIC) program, which replaced the Pre-Disaster Mitigation (PDM) program, and the Flood Mitigation Assistance (FMA) Program, all of which are administered by the Federal Emergency Management Agency (FEMA) under the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next disaster strikes.

The Georgia Emergency Management Act of 1981 authorizes local emergency management agencies to conduct emergency management activities for the County. The Echols County Commission gave authority to develop this Plan due to their execution of the Grantee-Subgrantee Agreement for the Echols County Hazard Mitigation Grant.

To initiate an outreach program to neighboring communities, governments, local and regional agencies, and agencies authorized to regulate development, business, and the public, two Public Hearing Notices were published in the legal organ of the local newspaper. In addition, e-mail lists of stakeholders were kept updated, and those on them were informed of meetings through e-mails, letters, and/or telephone calls. Surrounding County EMA Directors were notified of the plan update by phone and invited to participate. Additionally, several area county Hazard Mitigation Plans were being updated simultaneously, and an active meeting list was maintained for scheduling purposes.

Planning Division staff from the Southern Georgia Regional Commission (SGRC), representing eighteen counties in the region (including Echols County), attended the Echols County meetings. They participated in all aspects of the planning process. They provided a regional perspective forming the Echols County Hazard Mitigation Plan.

Through the above efforts, the Echols County Hazard Mitigation Plan was updated, including a comprehensive range of Mitigation Goals, Objectives, and Action Steps (see Chapter 3). This will assist the local governments in emphasizing a more direct approach to Hazard Mitigation. The long-term goal is to reduce potential natural disaster losses to life, property, and the economy through Hazard Mitigation efforts.



## **SECTION II. LOCAL METHODOLOGY, PLAN UPDATE PROCESS, AND PARTICIPANTS**

### **A. Overview**

This Hazard Mitigation Plan Update encompasses the jurisdictions of Echols County, located in Southern Georgia. The SGRC provided technical assistance. A local Hazard Mitigation Plan Update Committee (Echols County HMPUC) was formed, and a planning effort was undertaken, the final product of which was a Plan Update containing updated Mitigation Goals, Objectives, and Action Steps to reduce or eliminate the potential for loss of life and damage to property and the economy caused by nature disasters (see Chapter 3)

### **B. Hazard Mitigation Planning Committee**

As with the previous plan, the Hazard Mitigation Plan was developed under the guidance of a Hazard Mitigation Planning Update Committee (HMPUC). The group led the planning and decision-making efforts throughout the planning process. The HMPUC membership included representatives from Echols County and representatives from other groups and individuals, as shown below in Table 2.1, who attended meetings and/or conducted research:



**Table 2.1 – Echols County HMPUC**

<b>Jurisdiction/Organization</b>	<b>Title</b>	<b>Name</b>
<b>GEMA</b>	<b>Planner</b>	<b>Michaela Schiesser</b>
<b>Echols County Board of Education</b>	<b>Superintendent</b>	<b>Vince Hamm</b>
<b>Echols County Commission</b>	<b>County Commissioner Chairman</b>	<b>Stanly Corbett</b>
<b>Echols County Commission</b>	<b>County Commissioner Vice-Chairman</b>	<b>Kenneth Petty</b>
<b>Echols County Commission</b>	<b>County Commissioner</b>	<b>Bobby Walker</b>
<b>Echols County Commission</b>	<b>County Manager</b>	<b>Alan Levesque</b>
<b>Echols County Commission</b>	<b>County Clerk</b>	<b>Shona Carter</b>
<b>Echols County EMA</b>	<b>Director</b>	<b>Alan Levesque</b>
<b>Echols County Extension Office</b>	<b>Secretary</b>	<b>Christy Hatcher</b>
<b>Echols County Extension Office</b>	<b>County Coordinator</b>	<b>Justin Shealey</b>
<b>Echols County Extension Office</b>	<b>4-H Agent</b>	<b>Dolly Corbett</b>
<b>Echols County Family Connection</b>	<b>Coordinator</b>	<b>Karen Black</b>
<b>Echols County Health Department</b>	<b>Nurse Manager</b>	<b>Leigh Ann Combass</b>
<b>Echols County Probate Court</b>	<b>Judge</b>	<b>Judge Carl Rodgers</b>
<b>Echols County Resident</b>	<b>Bobbi Rodgers</b>	<b>Citizen</b>
<b>Echols County Road Department</b>	<b>Superintendent</b>	<b>Wayne Suggs</b>
<b>Echols County Sheriff's Office</b>	<b>Sherriff</b>	<b>Randy Courson</b>
<b>Echols County Sheriff's Office</b>	<b>Lieutenant</b>	<b>Kathryn Lewis</b>
<b>Echols County Tax Commissioner's Office</b>	<b>Tax Commissioner</b>	<b>Jade Vinson</b>
<b>Georgia Forestry Commission</b>	<b>Chief Ranger</b>	<b>Mike Williford</b>
<b>South Health District</b>	<b>Nurse Manager</b>	<b>Leigh Ann Combass</b>
<b>Superior Court</b>	<b>Clerk</b>	<b>Nora L. Rodgers</b>
<b>Southern Georgia Regional Commission</b>	<b>Planner</b>	<b>James Horton</b>
<b>Southern Georgia Regional Commission</b>	<b>Planner</b>	<b>Alexandra Arzayus</b>
<b>WWALS Suwannee Riverkeeper</b>	<b>Executive Director</b>	<b>John S. Quarterman</b>

The Committee held the following meetings the sign-in sheets of which are included in Appendix E:

- Kick-Off Public Hearing – March 4, 2024
- First Workshop— September 4, 2024
- Second Workshop— October 24, 2024
- Final public hearing & adoption— May 1, 2025

Building on the previous plan, each chapter was reviewed chronologically, with updated hazard, risk, and vulnerability data and previous accomplishments of mitigation strategy efforts.

An open discussion was permitted at all public meetings for suggestions and/or comments regarding the plan update. Also, comments (if any) were noted by the Southern Georgia Regional Commission staff during the general question and answer periods and incorporated into the plan as appropriate.

Copies of the previous Plan were made available at each meeting, while relevant chapters and sections under discussion were photocopied and distributed to those in attendance for comments. Outside the formal meetings, parts of the plan were e-mailed to specific individuals who could not attend the meetings, and their comments

were sought. Copies of the previous Plan and the draft Plan Update document were available on the Southern Georgia Regional Commission website and from the local EMA and city and county government offices.

There was a final workshop, helping once again to invite the vulnerable population, including the homeless, and migrant population and hand out a brochure printed in Spanish and English with important information about Hazard Mitigation and contact information so they could receive additional information as needed. Brochures were available at city halls, county government, DFACS, Health Department, and local libraries. (See a copy of the brochure in Appendix H.)

For the plan update, the Hazard Mitigation Plan Update Committee (HMPUC) used the prior Hazard Mitigation Plan as a basis, reviewing all chapters and sections and updating them as appropriate using national, state, and local data sources. The HMPUC reviewed the individual parts of the prior plan (with an emphasis on the hazards, goals, objectives, and action steps) and updated these elements through open discussion in which updates were noted by SGRC staff, who then used notes from the workshops to create the new Hazard Mitigation Plan document. The Wildfire section was updated using the Georgia Forestry Commission’s “Community Wildfire Protection Plan” (see Appendix C). The CWPP was consulted to ensure consistency between the CWPP and HMP, and all action items from the CWPP that were still relevant were included as action steps in the HMP descriptions. Zoning information and community services were updated using the joint Comprehensive Plan for the County and Cities, and community services were updated using the joint Comprehensive Plan for the County and Cities. Other documents used were the local Emergency Operations Plan, the previous Hazard Mitigation Plan, the State of Georgia Hazard Mitigation Plan, and information from the National Climatic Data Center (NCDC). Data from the NCDC were used to create the Hazard Frequency Table, and the associated information regarding each hazard is regarding 2. The county and cities do not have a Flood Mitigation Assistance Plan or a Flood Insurance Study.

The Echols Family Connection, the Echols County Health Department, the Department of Family and Children Services, and the local government’s staff distributed and posted information flyers with a survey they could fill out online with a QR code. The SGRC distributed the brochures to the necessary departments so the vulnerable population could access the information. They were allowed time to receive any responses they may have. A copy of the survey QR flyer and brochure were included in the appendix.

**C. Public Comment and Participation**

An important component of any mitigation planning process is public participation. Individual citizen and community-based input provides the entire planning team with a greater understanding of local concerns and increases the likelihood of successfully implementing mitigation actions by developing community “buy-in” from those directly affected by the decisions of public officials. As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the hazards present in their community and take the steps necessary to reduce their impact. Public awareness is a key component of any community’s overall mitigation strategy aimed at making a home, neighborhood, school, business, or entire planning area safer from the potential effects of hazards.

Publicizing a Public Notice in the legal organ is the legal method of notifying the public and inviting them to meetings. The workshops were advertised on social media and announced at the County Commissioners' meetings. Also, public involvement in the plan development was sought using open public meetings, a public participation survey, and brochures. (Meeting advertisements and sign-in sheets are provided in Appendix E).

In addition, an e-mail list of stakeholders was kept up to date, including all attendees who wrote their e-mail addresses on the sign-in sheet at each meeting and any other interested parties. Further reminders of meetings were provided as needed through telephone calls and in-person communication.

**D. Mission and Vision Statements**

The HMPUC decided on the following Mission and Vision Statements in the original plan and re-confirmed them in this update to help guide them through the planning process.

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*Echols County HMPUC Mission and Vision Statements*

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- ❖ *This committee’s mission is to make Echols County, and their citizens, residences, and businesses less vulnerable to the effects of natural hazards. This will be accomplished through the effective administration of Hazard Mitigation Programs, hazard risk assessments, wise floodplain management, and a coordinated approach to mitigation policy through state, regional, and local planning activities.*
- ❖ *This committee’s vision is to institutionalize a local Hazard Mitigation ethic through leadership, professionalism, and excellence, thus leading the way to a safe, sustainable way of life for Echols County.*

Due to Echols County being a close-knit community, the Echols County HMPUC chose not to break into subcommittees, but to address issues as a whole group. Various members of this group had direct knowledge of local infrastructure and agencies, emergency planning, hazard planning, and the operation of major departments and emergency services. Through their efforts, this Plan was developed.

The HMPUC was responsible for identifying natural hazard events and completing a profile, vulnerability assessment, potential loss estimation (see Chapter 2, Appendix A, and Appendix D), and updating the Georgia Mitigation Information System (GMIS) Critical Facilities Inventory (see Appendix F). They were also responsible for reviewing and updating the Mitigation Goals, Objectives, and Action Steps (see Chapter 4), among other responsibilities.

**SECTION III PLAN REVIEW, ANALYSIS, AND REVISION**

**A. Overview**

As mentioned above the prior Hazard Mitigation Plan was used as a basis for the plan update. The Hazard Mitigation Plan Update Committee (HMPUC) reviewed all chapters and sections of the prior plan and updated them as appropriate, using national, state, and local sources. Other documents consulted included:

- The Community Wildfire Protection Plan (see Appendix C)
- The current Comprehensive Plan for the County, which includes the five-year Community Work Program
- The Local Emergency Operations Plan
- The current State of Georgia Hazard Mitigation Strategy
- The Local Service Delivery Strategy
- Data from the National Climatic Data Center (NCDC).
- Echols County Flood Insurance Study

Echols County does not have a flood mitigation assistance plan.

After organizing resources, the risk assessment was updated. New forms, worksheets, and data (included in the Appendix) were also completed. Afterward, the Mitigation Goals, Objectives, and Action Steps were reviewed to determine whether they would remain the same or be added to, modified, or removed.

All chapters of this Plan have been updated to reflect the new material. The tables at the beginning of the chapters provide further information regarding which items were changed and updated. After organizing resources, the risk assessment was updated. New forms, worksheets, and data (included in the Appendix) were also completed. Afterward, the Mitigation Goals, Objectives, and Action Steps were reviewed to determine whether they would remain the same or be added to, modified, or removed.

## **SECTION IV. ORGANIZATION OF THE PLAN**

### **A. Overview**

This Plan focuses on seven natural hazards chosen by the HMPUC that may affect and cause damage to Echols County. Chapter 2, Chapter 4, and Appendix A are each subdivided into Sections I through VII; these sections reflect the 7 natural hazards that were chosen. The natural hazards are as follows (in order of priority):

- 1. Hurricanes/Tropical Storms**
- 2. Floods**
- 3. Tornadoes**
- 4. Wildfires**
- 5. Thunderstorms/Lightning**
- 6. Extreme Heat**
- 7. Drought**

Other hazards, such as Avalanche, Coastal Erosion, Coastal Storm, Dam Failure, Earthquake, Expansive Soils, Extreme Heat, Land Slide, SLOSH (Sea, Lake and Overland Surges from Hurricanes), Tsunami, and Volcano, were examined and determined not to be of sufficient significance in the community to warrant their inclusion in the present Hazard Mitigation Planning effort, based on past history and available data.

This Plan also contains a HAZUS report (see Appendix G), a comprehensive range of Mitigation Goals, Objectives, and Action Steps (Chapter 4), and information on implementation, monitoring, and plan update and maintenance (see Chapter 6), as well as other FEMA-required items and materials (included in various Chapters, Sections and Appendices).

Throughout the adequate period of this plan, the County Commissioners will assign staff, as appropriate, to implement the comprehensive range of Mitigation Goals, Objectives, Action Steps, and other pertinent items contained in this Plan.

The County's EMA is committed to incorporating hazard mitigation planning into its Local Emergency Operation Plan and other public emergency management activities. As the EMA director becomes aware of updates to other

County plans, codes, regulations, procedures, and programs, the Director will continue to look for opportunities to include hazard mitigation into these mechanisms.

The Echols County Hazard Mitigation Plan exists in one bound volume appended with various papers and documents, as well as a PDF document that is available on the SGRC website. The planning efforts of Echols County is intended to be an ongoing process and the Plan is to be amended as appropriate.

This Plan was prepared for:

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Copies of the Plan are on file and may be examined at the County and City government offices, the County Emergency Management Agency, the Southern Georgia Regional Commission office (as well as the SGRC website, [www.sgrc.us](http://www.sgrc.us)), and the Georgia Emergency Management and the Homeland Security Agency (GEMHSA).

## **SECTION V. LOCAL HAZARD, RISK, AND VULNERABILITY**

### **(HRV) SUMMARY, LOCAL MITIGATION GOALS, AND**

### **OBJECTIVES**

#### **A. Overview**

The HMPUC determined that the hazards established in the previous plan were still the most significant threats to the community, and their order of priority remains unchanged. A Hazard, Risk, and Vulnerability (HRV) Assessment was formulated using information obtained during the planning process. Information has been obtained from online databases, published sources, and personal accounts regarding hazards, their history in the community, and when and where they were active. This summary is provided in Chapter 2.

The Hazard Frequency Table (see Appendix D) summarizes the community's vulnerability to natural hazards. The Inventory of Assets and number of people exposed to each hazard are evaluated in GEMA Worksheet 3A (see Appendix A). Appendix F includes an assessment of the present value and potential losses from natural hazards for Critical Facilities and Critical Infrastructure.

There are 13 Essential Facilities located within Echols County. There are no EOC facilities. Echols County is served by three fire stations and a single law enforcement facility, the Sherriff’s Office. There are 2 schools in Echols County, with the elementary and middle school in the same location. The total value of the 13 Essential Facilities is \$51,627,621.00 (See Appendix G).

A description that identifies and analyses a comprehensive range of Mitigation Goals, Objectives, and Action Steps to reduce the effects of each hazard (based on risk assessment findings, with identifiable wide ranges for each jurisdiction) is included in Chapter 4, Section I-VII., In Chapter 6, Section I, there is a description related to the prioritization of these Mitigation Goals, Objectives, and Action Steps using cost/benefit analysis, STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental), and other criteria also in Chapter 6, there are sections on Implementing the Action Plan (see Section 1) , Evaluation, Monitoring, Updating (see Section II), and the Plan Update and Maintenance (see Section III).

**SECTION VI. MULTI-JURISDICTIONAL SPECIAL**  
**CONSIDERATIONS**



According to the U.S. Census Bureau, the County has 415 square miles. The county contains a notable swamp, Whitehead Bay. The western half of Echols County is located in the Alapaha River sub-basin of the Suwannee River basin. The eastern half of the county, from well east of Statenville to just west of Fargo, is located in the Upper Suwannee River sub-basin of the same Suwannee River basin.

As such, certain services, including emergency services, may have long distances to cover when responding to an event, which may negatively influence emergency response times and strain resources. Echols County has no incorporated cities.

Of the there Fire Department properties in Echols County, all are staffed by volunteers, including the Fire Chief.

The following are the ISO classes for the fire district in Echols County.

Station	ISO Class
Echols County Fire Department	Class 5Y
Howell Station	Class 5Y
Chapple Station	Class 5Y

## **SECTION VII. ADOPTION, IMPLEMENTATION, MONITORING AND EVALUATION**

After all plan development workshops were concluded, the draft plan was submitted to all local governments for their review and approval. After their approval, and any recommended changes, a second and final public hearing was held on **DATE adopting the Plan Update**. Copies of the public hearing advertisements and resolutions are available in Appendix E. The plan was approved by FEMA on **DATE**

The comprehensive range of Mitigation Goals, Objectives, and Action Steps (see Chapter 4), which contains items related to all local governments, will be implemented as soon as possible and/or funds become available to do so.

All sections of the Plan will be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals Objectives and Action Steps will be reported to the public through appropriate means (TV, website, social media, local newspaper, County Commission meetings, etc.)

The method that the County EMA will use to monitor the plan will be to conduct quarterly telephone interviews with the various local governments and area agencies to chart their plan progress. Also, throughout the year, a series of informal meetings will be held in which, various aspects of the plan are discussed. In addition, annual evaluations of the plan will take place on or near the anniversary of the Plan's adoption date. The annual evaluation will assess which of the goals, objectives, and action steps have been achieved; whether those goals, objectives, and action steps still address current and expected conditions; whether the nature or magnitude of risks has changed; whether current resources are appropriate for implementing the plan; and whether agencies and other parties have participated as originally proposed.

During this annual evaluation, problems (if any) with completing the action steps will be discussed, methods of resolving those problems (if any) will be formulated, the action steps will be updated (if necessary), and new action steps will be developed (if necessary) in response to new problems that have developed throughout the year. If any changes or updates are needed to the other sections of the plan itself, these will also be discussed and noted. Critical facilities and infrastructure changes and updates will also be discussed at this time and then added to the online GEMA database as required. New hazards in the area (if any) will be discussed and planned for and an assessment made as to whether community needs dictate additions to the materials of the plan.

The major criteria to measure plan success will be the number of goals, objectives, and action steps, or components there of, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

The Plan will be updated by the EMA Director and chosen representatives of all the local governments every five years, as required by FEMA. All sections of this Plan will be updated at that time. The Plan update will be reviewed by all jurisdictions and relevant stakeholders. The requirements of this Hazard Mitigation Plan will be taken into consideration and incorporated into Comprehensive Plans, Capital Improvement Plans, Local Emergency Operations Plans, and all other such Plans, as appropriate. This updating process will be publicly advertised and public comment will be solicited and incorporated as necessary and as appropriate.

## **SECTION VIII. COMMUNITY DATA**

### **A. Overview of the Community**

Echols County located on just north of the Georgia-Florida line, on the southeastern border. The county seat is Statenville, which in an unincorporated county seat. Echols County is one of Georgia's least populated counties. Over 90% of the county is forest and under contract to private companies. Echols County is bordered by Hamilton and Columbia County, Florida to the south, Lanier and Clinch County to the north, Lowndes County to the west, and Clinch County to the east. Echols County is on the Florida border and was created from Clinch and Lowndes County Counties in 1858.

As mentioned earlier, Echols county has a total of 415 square miles. According to the U.S. Census Bureau's American Community Survey 2020 5-year estimates, the estimated total population of Echols County was 3,697 in 2020. Therefore, the average population density is approximately 9 people per square mile, which reflects the vast rural character of the county.

The location map in Figure 1.1 reflects the boundaries of the County as well as the jurisdictions within the County.

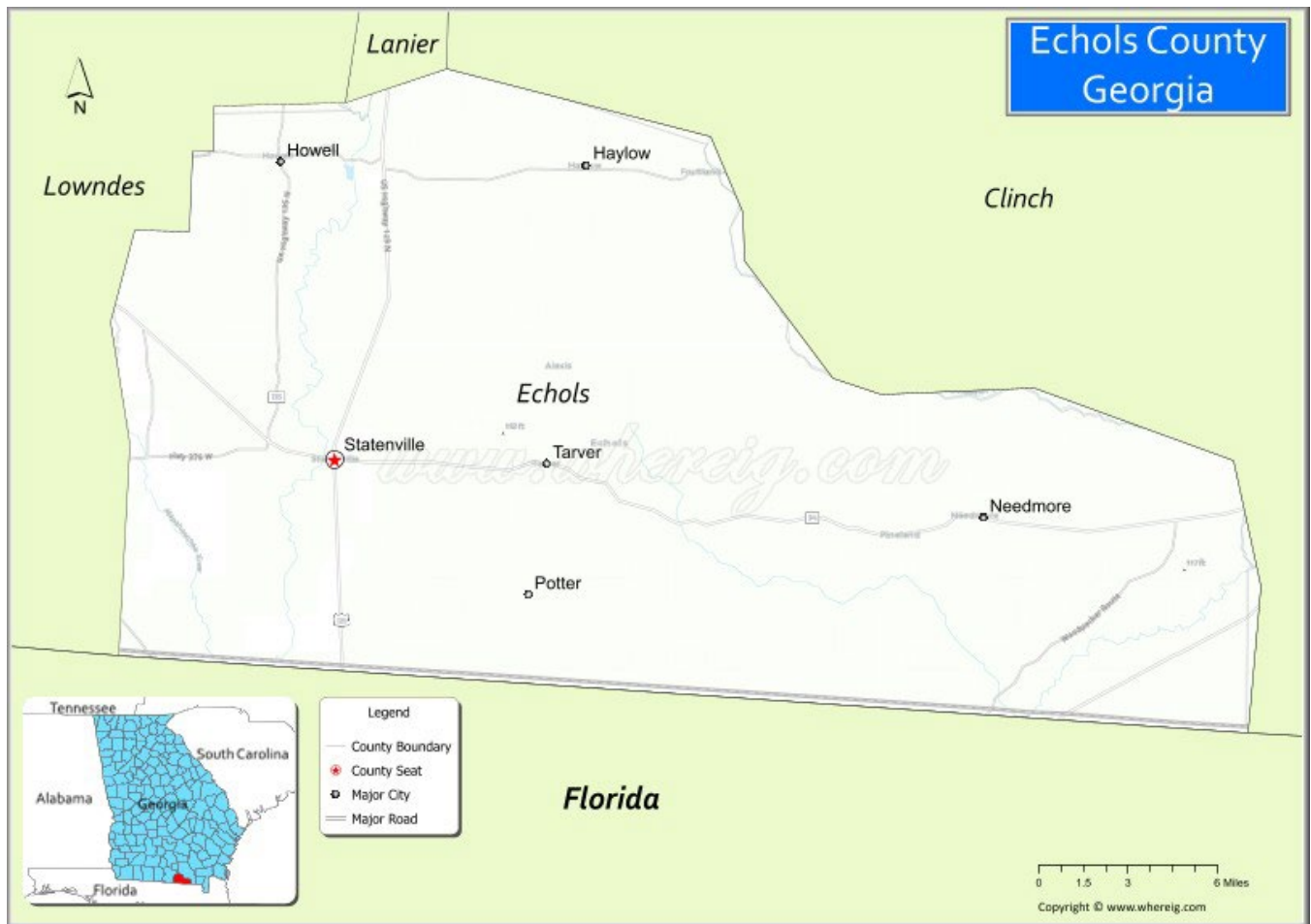
While there are no incorporated cities located in Echols County, there are several unincorporated communities which include:

- Statenville (county seat)
- Fruitland
- Haylow
- Howell
- Needmore
- Potter
- Tarver

Services provided in Echols County by the following:

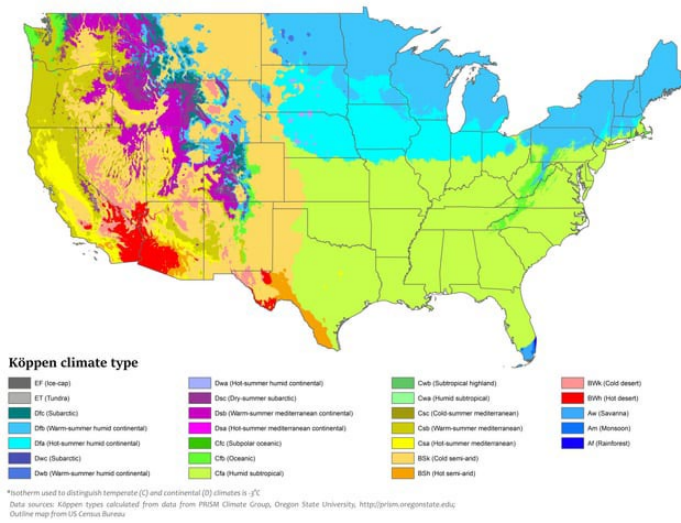
- Education (local public school): Echols County School System
- Law Enforcement: Echols County Law Enforcement
- Water: Private Water Company
- Septic Service is private
- Power Utilities: Georgia Power Company
- Medical Services: South Georgia Medical Center is the closest full-service hospital and located in Lowndes County

Figure 1.1. – Location Map



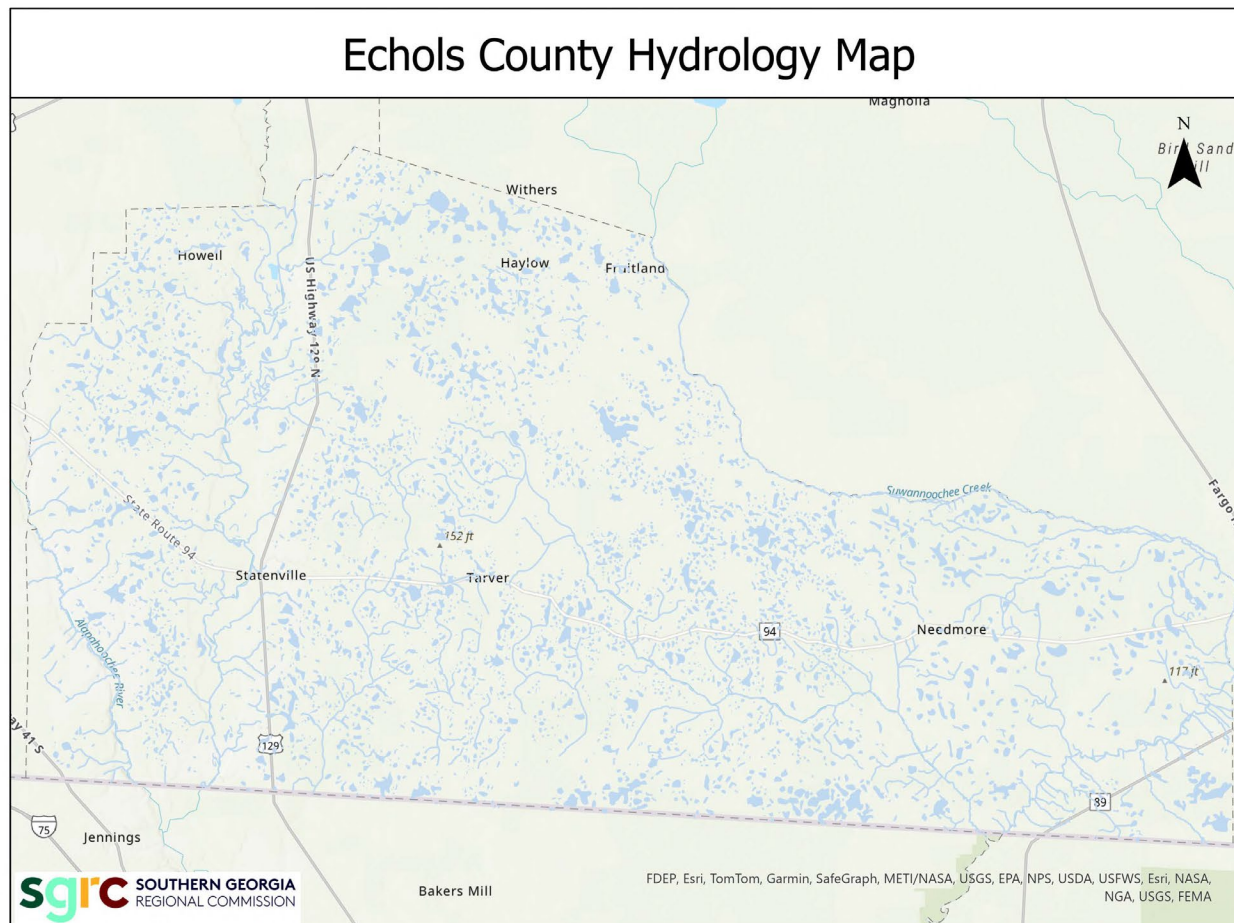
## B. Geography and Climate

### Köppen climate types of the contiguous United States



According to the Köppen Climate Classification system, Echols County is classified as subtype **Cfa (Humid Subtropical Climate)** characterized by relatively high temperatures and evenly distributed precipitation throughout the year. The typical Summer temperatures are in the 80's and 90's (°F) and winter temperatures rarely drop below freezing 32 °F. This climate makes up the majority of the southeast United States.

**Figure 1.2 –Hydrology Map**



### C. Transportation

#### a. Major Highways

Primary highway corridors in the County include:

**U.S. Route 41, U.S. Route 129, U.S. Route 441, State Route 7, State Route 11, State Route 89, State Route 94, State Route 135, State Route 187, State Route 376.**

No interstate goes through the county and the main route north and south is U.S. Route 129 and for east and west travel is SR 94. These routes are two-lane roads and can cause congestion, or limit travel for residents and first responders if they are damaged during storms. U.S. Route 129 runs through the southeastern United States, connecting Florida to Tennessee. The highway is a scenic route that drives through mountainous and forested areas, which serves as a primary route for local and long-distance traffic.

None of these routes are registered on the National Hazardous Materials Route Registry.

#### b. Rail Lines

Echols County is served by the Norfolk Southern Corporation rail line that runs parallel to the east-west State Route 187 corridor. This railroad runs through Howell, Mayday, Haylow, and Fruitland.

#### D. Cultural, Historic, and Natural Resources

Echols County boasts a wealth of historical, cultural, and natural resources. Notable landmarks include the Corbett Farm circa 1878 is listed on the National Register of Historic Places. The farm complex includes several outbuildings, such as a well house, a car house, and a cotton & corn house.

Other historic structures in Echols County include the Central Hallway Farmhouse and the Wayfare Primitive Baptist Church. In the Howell community, you can find Dr. Pennington's Office, Rentz's store and the Masonic Lodge.

The Statenville Consolidated, also known as the Echols County High School, is located on Georgia Hwy 94 in Statenville, GA. Listed in 1988 on the National Register of Historic Place, it was built in 1931 and enlarged in 1938-39. It is a one-story brick building of simple design by noted Valdosta architect Lloyd Greer (1885-1952). The school auditorium was the largest meeting space in Echols County and has been a used as a social and entertainment center.



HISTORY IN ECHOLS COUNTY

#### E. Parks, Preserves, and Conservation

The Echols County Recreation Department helps to create sporting events in the region. There is a community center with baseball fields and a small playground for children to play. There are no state parks located in Echols County.

#### F. Population

Echols County has experienced a continued decline in growth over the last decade. Echols County had 4,034 residents during the 2010 Decennial Census and an estimated population of 3,936 in 2017. Overall population density in the County decreased

from 9.72 persons per square mile in 2010 to 9.48 persons per square mile in 2017. Trends suggest that this number is likely to decrease over the next decade. Table 1.2 shows population counts from 2000, 2010, 2017, and 2022 estimates for the county.

**Table 1.2 – Echols County Population Counts**

Jurisdiction	2000 Census Population	2010 Census Population	2017 Population	2022 Population	Total Change 2010-2022	% Change 2010-2022
<b>Echols County</b>	3,707	4,034	3,936	3,707	-327	-0.08

Source: U.S. Census Bureau, Decennial Census 2000, Decennial Census 2010, ACS 2017 and 2022 5-Year Estimates

Demographic characteristics of the county are summarized below in Table 1.3. According to 2016 estimates, Echols County is 11.2% are 65 and over, 56.8 % ages 20-64, and 32% under 18. Echols County's population during that time was 52.5% female and 47.5% male. The total number of people aged 65 and older in Echols County increased by 1.6% from 2010 to 2016. In the 2022 American Community Survey 5-Year Estimates, the median age was 37.9 in Georgia, but in Echols County, it was 34.7 years old. Of the population aged 25 years and over, 82.4% have a high school degree or higher and 14% have a bachelor's degree or higher. While most Echols County residents speak only English at home, approximately 19.2 % speak a language other than English at home, which is 3.5 % higher than the State average. This is due to the higher-than-average Hispanic/Latino ethnicity of the county.

**Table 1.3 – Demographic and Social Characteristics Compared to the State and Nation**

Demographics & Social Characteristics	Echols County	Georgia	United States
<b>Median Age</b>	<b>34.7</b>	37.9	39.2
<b>% of the Population Under 5 years old</b>	<b>7.2%</b>	5.9%	5.6%
<b>% of the Population over 65 years old</b>	<b>12.8%</b>	15.4%	17.3%
<b>% of the Population over 25 with High School diploma or higher</b>	<b>82.5%</b>	88.7%	91.1%
<b>% of the Population over 25 with a bachelor's degree or higher</b>	<b>14.0%</b>	35.4%	36.2%
<b>% with Disability</b>	<b>10%</b>	13.5%	20%
<b>% Speak a language other than English</b>	<b>19.2%</b>	14.3%	21.6%

Source: U.S. Census Bureau, American Community Survey 2022 5-Year Estimates.



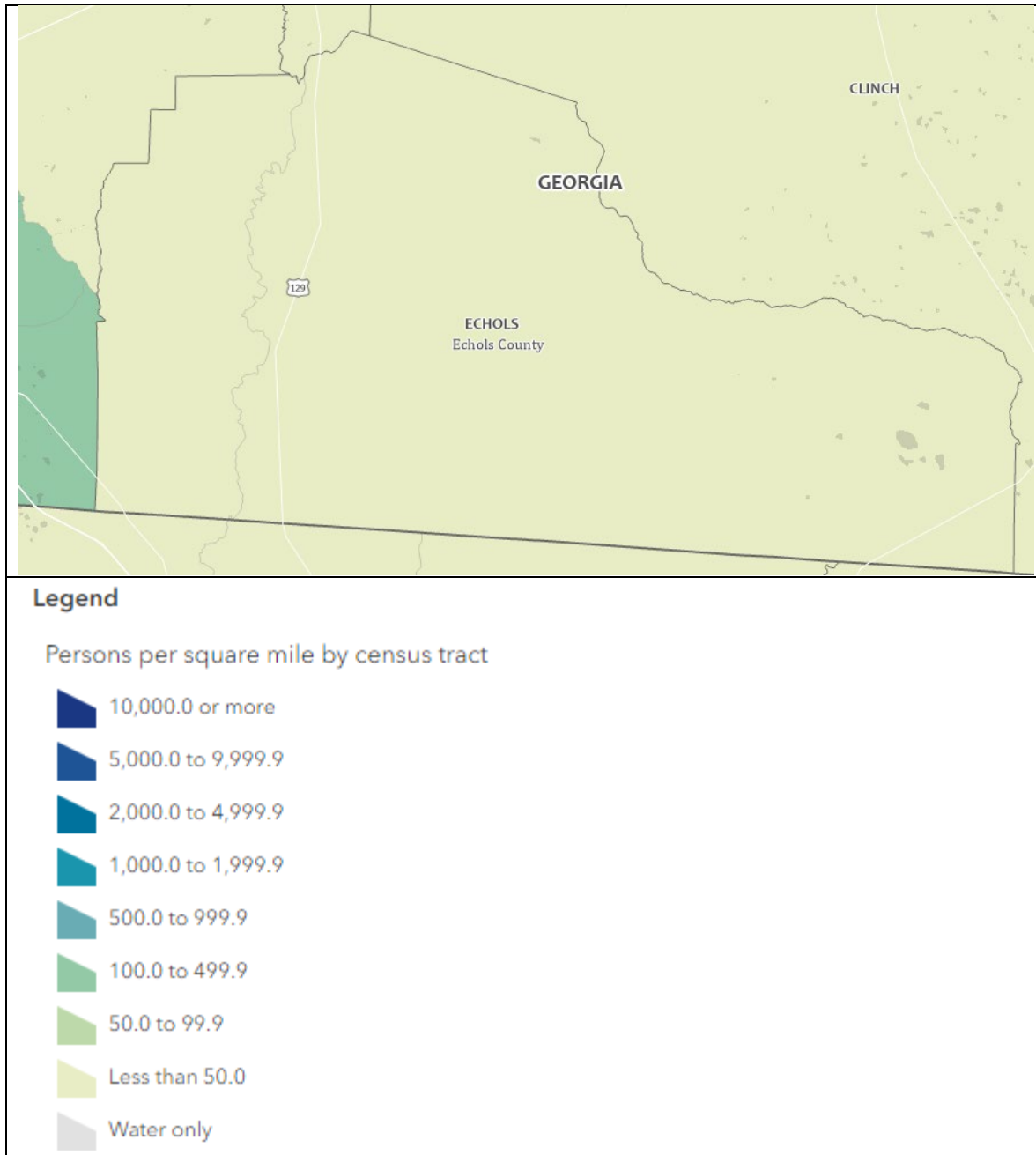
**Table 1.4 – Demographics by Race and Sex**

Echols County	Population	%
<b>Total Population</b>	<b>3,707</b>	
<b>Male</b>	<b>1,703</b>	<b>46%</b>
<b>Female</b>	<b>2,004</b>	<b>54%</b>

White alone	2534	68%
Hispanic or Latino	1,091	29%
Black or African American Alone	157	0.04%
Asian	11	0.003%

Source: U.S. Census Bureau, American Community Survey 2022 5-Year Estimates

**Figure 1.2 Population Density Map**



Source: U.S. Census Bureau, American Community Survey 2022 5-Year Estimates; Demographic Data Map Viewer

## G. Economy

Notable economic driver for Echols County are agriculture, forestry, construction, retail trade and manufacturing. Per the Department of Labor – Area Labor Profile for Echols County, some of the top employers are in the agriculture or forestry industry. These are listed below:

Coggins Farm Supply Georgia, LLC Corbett Brothers Farms, LLC Corbett Electrical Construction, Inc. Grimmway Enterprises, Inc. KMA Employee Leasing, Inc. Long Branch Land & Timber, LLC Lowndes Timber, Inc. Reigning Champs Football, LLC Sandlin Forest Products, LLC Tycor Farms, LLC

Echols County's economy has historically been based on agriculture and forestry, with over 90% of the county's land being pine forest. Other industries, like construction, employs 324 people, retail employs 278, and manufacturing employs 254 people.

### A. Economic Wages and Employment

#### a. Economic Wages and Employment

The 2022 American Community Survey indicates that the median household income for Echols County is \$ 61,187, representing a 35.5% increase from the previous year's figure of \$45,151. This is still lower than that of the state, which is \$71,355. On the other hand, Echols County per capita income is only \$24,751, which is much lower compared by the state at \$56,589. Compared to the state, a large population is living below the poverty level in the county. 15% of the population lives below the poverty line, which is higher than the national average of 12.5%. The largest demographic of impoverished people in Echols County are females aged 25-34. The most common racial group living below the poverty line in Echols County is Hispanic, followed by White and Other.



Table 1.5 shows the county's economic statistics compared to the state average, and Table 1.6 shows its employment statistics compared to the state average.

**Table 1.5- Echols County Economic Statics, 2022**

Jurisdiction	Median Household Income	Per Capita Income	Unemployment Rate (%)	% of Persons below Poverty Level	% Without Health Insurance
<b>Echols County</b>	<b>\$61,184</b>	<b>\$24,751</b>	<b>2.5%</b>	<b>15%</b>	<b>24.9%</b>
<b>State of Georgia</b>	<b>\$71,355</b>	<b>\$57,290</b>	<b>3.3%</b>	<b>12.7%</b>	<b>11.7%</b>

Source: U.S. Census Bureau, American Community Survey 2022

**Table 1.6- Echols County Employment by Industry, 2022**

Industry	Echols County (%)	Georgia (%)
Agriculture, Forestry, fishing, hunting & mining	13.3%	1.1%
Construction	17%	6.06%
Manufacturing	13.4%	10.6%
Wholesale Trade	4.05%	2.8%
Retail Trade	14.6%	11.7%
Transportation & Warehousing	3.05%	6.4%
Finance & Insurance	0.947%	6.2%
Educational Services	8.36%	20.8%
Health Care & Social Assistance	5.68%	7.9%
Accommodation & Food Services	3.63%	8.3%
Public Administration	3.73%	5.0%

Source: U.S. Census Bureau, American Community Survey 2022

The largest industry sectors in the county in 2022 were Construction, Retail Trade and Agriculture, Forestry, fishing, hunting & mining, comprising 17%, 14.6% and 13.3%, respectively.

#### H. Housing

Table 1.7 provides details on housing characteristics for the county as well as a comparison to the State of Georgia and Table 1.8 provides further detail for Echols County.

The American Community Survey estimates that there are 1,546 housing units in Echols County, of which 79.4 percent are occupied. In comparison to the state, occupancy rates are lower in Echols County. Renter-occupied units comprise less than 23.7% of the housing stock in Echols County. A high percentage of renters is an indicator of higher pre- and post-disaster vulnerability as renters often do not have the financial resources of homeowners, are more transient, are less likely to have information about or access to recovery aid following a disaster, and are more likely to require temporary shelter following a disaster (Cutter, et al. 2003). Higher homeownership rates in some jurisdictions, such as Echols County, where owner-occupied housing rates are above 60%, may indicate that more residents in these areas can implement certain types of mitigation in their homes.

Mobile homes make up almost 57 percent of the housing stock. Mobile home units can be more vulnerable to certain hazards, such as tornadoes and windstorms, especially if they are not properly secured with tie-downs. Of the total occupied housing units in Echols County, approximately 1.1 percent of householders have no vehicle available, which could cause difficulty during an evacuation, especially considering the lack of alternative transit options available in the county.



The majority of the County's housing stock—83 percent—was built between 1970 and 2009. Age can indicate a structure's potential vulnerability to certain hazards. Echols County first entered the National Flood Insurance Program in 2009. Therefore, based on the housing age estimates, the majority of the housing in the County was built without floodplain development restrictions were required and are vulnerable to damage from floods.

**Table 1.7— Echols County, Housing Characteristics, 2022**

Jurisdiction	Housing Units (2010)	Housing Units (2022)	Housing Units Percent Change (2010-2022)	Occupied Units, % (2022)	Owner-Occupied Units, % (2022)	Renter-Occupied Units, % (2022)	Median Home Value (2022)
<b>Echols County</b>	<b>1567</b>	<b>1546</b>	<b>-1.3%</b>	<b>79.4%</b>	<b>76.3%</b>	<b>23.7%</b>	<b>114,900</b>
<b>State of Georgia</b>	<b>4,088,801</b>	<b>4,283,477</b>	<b>4.8%</b>	<b>87.5%</b>	<b>63.1%</b>	<b>36.9%</b>	<b>\$245,900</b>

**Table 1.8— Echols County, Housing Characteristics, 2022**

Jurisdiction	Average Household Size	Housing with no Vehicles Available	Housing Units that are mobile homes
<b>Echols County</b>	<b>3.02</b>	1.1%	56.3%
<b>State of Georgia</b>	<b>2.71</b>	6.0%	9.0%

Source: U.S. Census Bureau, American Community Survey 2022

## I. Social Vulnerability

Social Vulnerability refers to a community's capacity to which it is susceptible to and unable to cope with, the adverse effects of climate change, including preparing for and responding to the stress of hazardous events ranging from natural disasters, such as tornadoes or hurricanes, and other extreme hazards. Social vulnerability considerations were included in this plan update to identify areas across the County that might be more vulnerable to hazard impacts based on several factors.

The Center for Disease Control and Prevention (CDC) has developed a social vulnerability index (SVI) as a way to measure the resilience of communities when confronted by external stresses such as natural or human-caused disasters or disease outbreaks. The Social Vulnerability Index (SVI) provides valuable insights into the resilience of communities at the census tract level. By analyzing 15 social factors, including poverty, unemployment, and housing type, the SVI identifies areas with heightened vulnerability to hazardous events. Higher SVI scores indicate communities may face greater challenges in responding to and recovering from disasters. This information is crucial for:

- \* \*\*Prioritizing pre-disaster aid:\*\* Targeting resources to areas most susceptible to disruption.
- \* \*\*Optimizing emergency preparedness and response:\*\* Allocating resources strategically to address specific vulnerabilities.
- \* \*\*Planning for effective recovery support:\*\* Ensuring efficient and targeted assistance for communities in need.

By utilizing the SVI, the County and its jurisdictions can enhance their disaster preparedness and response efforts, ensuring more equitable and effective support for all residents.



### ***Non- English Speaking Population***

Over 19% of the county population speaks a language other than English. Of that population, only 3.9% speak English less than “very well”. The most prominent language spoken other than English is Spanish, with 18.6% of the non-English speaking population speaking Spanish.

### ***Special Needs Population***

According to the American Community Survey, an estimated 10 percent, approximately 317, of Echols County’s population identify as having some form of disability including hearing, vision, cognitive, ambulatory, self-care, and or independent living difficulties. The lack of public transportation options available in the County outside of services could pose significant issues for special needs populations during an emergency or disaster.

### ***Homeless Population***

The homeless population in Echols County and across the state is monitored and supported by the Department of Community Affairs, which conducts a “Point in Time” (PIT) count every other January to estimate the number of homeless individuals in counties throughout Georgia through the “Continuum of Care” (CoC) reports. There are 9 CoC districts in Georgia that report on homelessness in their designated areas. The seven most urbanized counties have individual CoCs, while the remaining 152 counties are counted in the “Balance of State Continuum of Care”, (GA-501) which target the relatively less urbanized, more rural counties. The combined results from these reports help to predict the rate of homeless across the state. These efforts support the requirements by the U.S. Department of Housing and Urban Development (HUD) for each state to collect and maintain data on their homeless populations.

As of 2022, the HUD reports for the Continuum of Care (CoC) indicated that Georgia had an estimated 10,689 individuals experiencing homelessness on any given day. During this Balance of the State (PIT) county, Echols County only had 4 individuals were found to be homeless and unsheltered. A relatively low number consistent with the largely rural environment of the county and the absence of major cities.

In 2022, the HUD reports for the Continuum of Care (CoC) indicated that Georgia had an estimated 10,689 individuals experiencing homelessness on any given day. During the Point-in-Time (PIT) count for the Balance of the State, only 4 individuals were found to be homeless and unsheltered in Echols County. This relatively low number is consistent with the predominantly rural environment of the county and the absence of major cities.

## ***Inmates***

The Echols County Sheriff's Office indicates that there are no inmates in Echols County because there is no jail in Echols County. All individuals arrested by Echols County Sheriff's Office are transported to the Lowndes County Jail and housed in their facilities.

### **J. Climate Change**

Climate change is a long-term change in the average weather patterns that have come to define Earth's local, regional and global climates. These changes have a broad range of observed effect that are synonymous with the term.

Changes observed in Earth's climate since the mid-20<sup>th</sup> century are driven by human activities, particularly fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth's atmosphere, raising Earth's average surface temperature. Natural processes, which have been overwhelmed by human activities, can also contribute to climate change, including internal variability (e.g., cyclical ocean patterns like El Nino, La Nina and the Pacific Decadal Oscillation) and external forces (e.g., volcanic activity, changed in the Sun's energy output, variations in Earth's orbit).



Since the pre-industrial period, human activities are estimated to have increased the Earth's global average temperature by about 1 degree Celsius (1.8 Fahrenheit), a number that is currently increasing by more than 0.2 degrees Celsius (0.36 degrees Fahrenheit) per decade. The current warming trend is unequivocally the result of human activity since the 1950's and is proceeding at an unprecedented rate over millennia.

## Chapter 2: Local Natural Hazards, Risks, and Vulnerability (HRV) Summary



This section describes the Hazard Identification and Risk Assessment process for the development of the Echols County Hazard Mitigation Plan.

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### *Summary of Changes:*

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During the plan update process, the HMPUC reviewed the hazards that may affect the community and their priority. This updated plan includes the same seven natural hazards listed in the previous plan, in the same order of priority. Table 2.1 provides a brief description of each section in this chapter and a summary of the changes made.

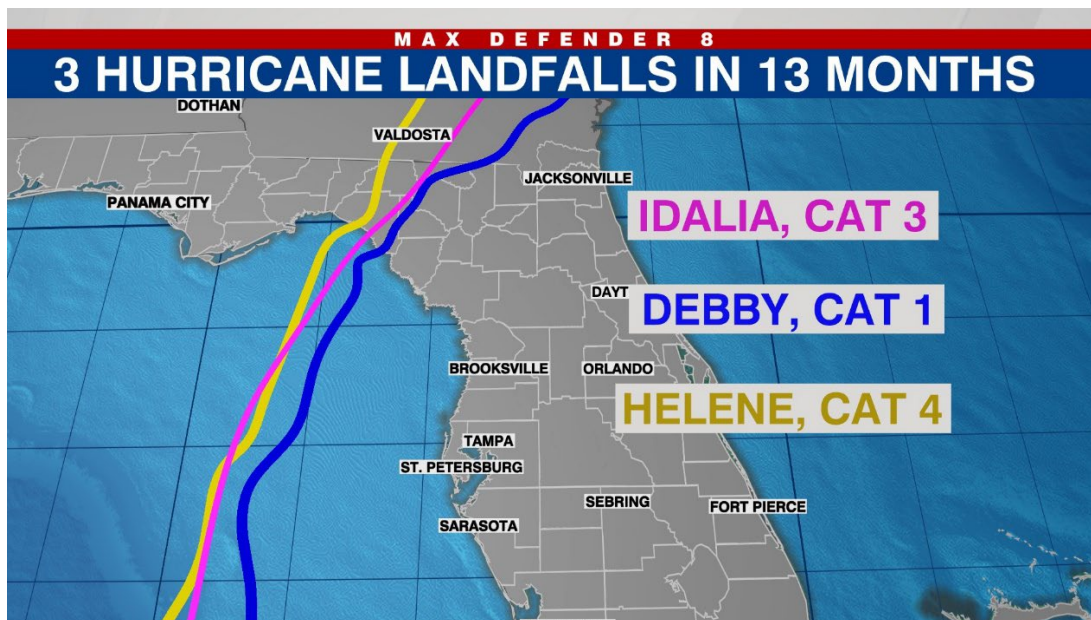
Chapter 2 Section		Updates to Section
I.	<b>Hurricanes/Tropical Storms</b>	Updated data and information; edited for clarity
II.	<b>Floods</b>	Updated data and information; edited for clarity
III.	<b>Tornadoes</b>	Updated data and information; edited for clarity
IV.	<b>Wildfires</b>	Updated data and information; edited for clarity
V.	<b>Thunderstorms/Lightning</b>	Updated data and information; edited for clarity
VI.	<b>Extreme Heat</b>	Updated data and information; edited for clarity
VII.	<b>Drought</b>	Updated data and information; edited for clarity

Table 2.1: Overview of updates to Chapter 2

Floods and Wildfires are the only hazards for which the level of risk varies geographically within the county; the remaining hazards constitute an equal threat to all geographical areas of the community. For more information, including hazard maps, see Appendix A.

Other hazards, such as Avalanches, Coastal Erosion, Coastal Storms, Dam Failures, Earthquakes, Expansive Soils, Extreme Heat, Land Slide, SLOSH (Sea, Lake, and Overland Surges from Hurricanes), Tsunamis, and Volcanoes, were examined and determined not to be of sufficient significances in the community to warrant their inclusion in the present Hazard Mitigation Planning Effort, based on history and available data.

## SECTION I. HURRICANES/TROPICAL STORMS



Source: <https://www.yahoo.com/news/3-hurricanes-made-landfall-taylor-013743118.html>

### A. Identification of Hazard

The threat of hurricanes/tropical storms has been chosen by the HMPUC as the first most likely hazard to occur and cause damage in the community, based on experience, the FEMA-described methodology, and other factors. Historical data has been examined from various sources, including the National Climatic Data Center (see Appendix F) and local history and personal accounts, to determine the frequency of events. For further information, see the HAZUS Report in Appendix G.

Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. Tropical cyclones act as a “safetyvalve,” limiting the continued build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the pole-ward latitudes. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes.

The key energy source for a tropical cyclone is the release of latent heat from the condensation of warm water. Their formation requires a low-pressure disturbance, warm sea surface temperature, rotational force from the spinning of the earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which encompasses the months of June through November. The peak of the Atlantic hurricane season is in early to mid-September and the average number of storms that reach hurricane intensity per year in the Atlantic basin is about six.

While hurricanes pose the greatest threat to life and property, tropical storms and depressions also can be devastating. A tropical disturbance can grow to a more intense stage through an increase in sustained wind speeds. The progression of a tropical disturbance is described below in the following section.








Source: <https://quizlet.com/391662935/geology-1030-hurricanes-part-1-3-flash-cards/?x=1jqt>

- **Tropical disturbance:** A discrete tropical weather system of apparently organized convection -- generally 100 to 300 nmi in diameter -- originating in the tropics or subtropics, having a non-frontal migratory character, and maintaining its identity for 24 hours or more. It may or may not be associated with a detectable perturbation of the wind field.<sup>1</sup>
- **Tropical Depression:** A tropical cyclone with maximum sustained winds of 38 mph or 62 km/hr (33 knots) or less.
- **Tropical Storm:** A tropical cyclone with maximum sustained surface wind speeds of 39 to 73 mph (34 to 63 knots).

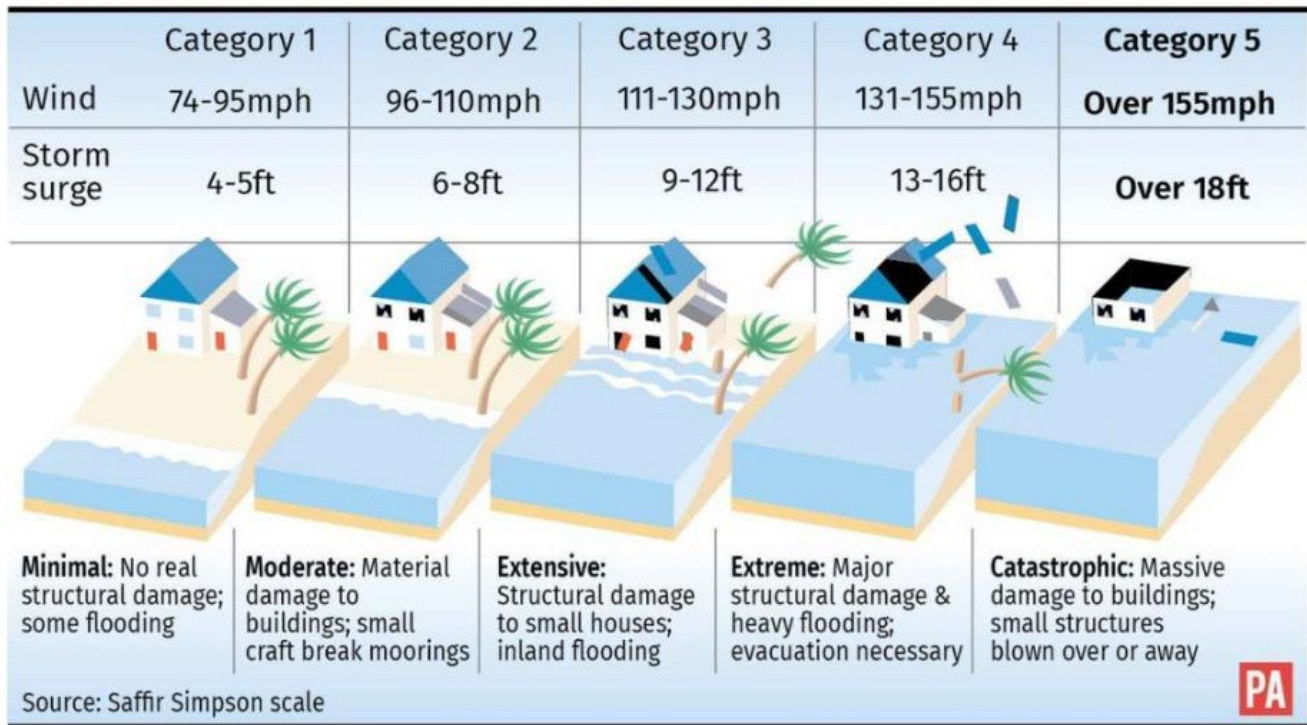
<sup>1</sup> A tropical cyclone is defined by NOAA as "a warm-core non-frontal synoptic-scale cyclone, originating over tropical or subtropical waters, with organized deep convection and a closed surface wind circulation about a well-defined center. Once formed, a tropical cyclone is maintained by the extraction of heat energy from the ocean at high temperatures and heat export at the low temperatures of the upper troposphere. In this they differ from extratropical cyclones, which derive their energy from horizontal temperature contrasts in the atmosphere (baroclinic effects)." (<http://www.nhc.noaa.gov/aboutgloss.shtml>)

- **Hurricane:** A tropical cyclone with maximum sustained winds of 74 mph (64 knots) or higher. In the western North Pacific, hurricanes are called typhoons; similar storms in the Indian Ocean and South Pacific Ocean are called cyclones.
- **Major Hurricane:** A tropical cyclone with maximum sustained winds of 111 mph (96 knots) or higher, corresponding to a Category 3, 4 or 5 on the Saffir-Simpson Hurricane Wind Scale.

Storm Category	Damage Level	Description of Damages	Photo Example
1	MINIMAL	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.	
2	MODERATE	Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings.	
3	EXTENSIVE	Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures, with larger structures damaged by floating debris. Terrain may be flooded well inland.	
4	EXTREME	More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.	
5	CATASTROPHIC	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.	

Source: Pinterest

# Categories of hurricane



The **Saffir-Simpson Hurricane Wind Scale** is a 1 to 5 categorization based on the hurricane's intensity at the indicated time. The scale provides examples of damage and impacts in the United States associated with winds of the predicted intensity. The following table shows the scale broken down by winds:

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 kt 119-153 km/h	<b>Very dangerous winds will produce some damage:</b> 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	<b>Extremely dangerous winds will cause extensive damage:</b> 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	<b>Devastating damage will occur:</b> 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	<b>Catastrophic damage will occur:</b> 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	<b>Catastrophic damage will occur:</b> 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.

The official Atlantic hurricane season (which includes Gulf Coast and East Coast hurricanes) is June 1 through November 30, but hurricanes and tropical storms may also occur outside those dates. Whether the hurricane/tropical storm is a short-term or long-term event depends on many factors, including category, strength, speed, and impact of other weather systems, including fronts and wind patterns.

Because of its location, Echols County is vulnerable to severe hurricanes/tropical storms forming in the Atlantic Ocean and the Gulf of Mexico. Also, due to location, hurricanes may degrade into tropical storms, tropical depressions, or tropical disturbances by the time they reach this area. These may or may not contain tornadoes or hail. Tropical storms, depressions, or disturbances may never reach hurricane strength before reaching the shore. The effects vary depending on the hurricane/tropical storm's severity and the event's duration.

**B. Profile of Events, Frequency of Occurrences, Probability**

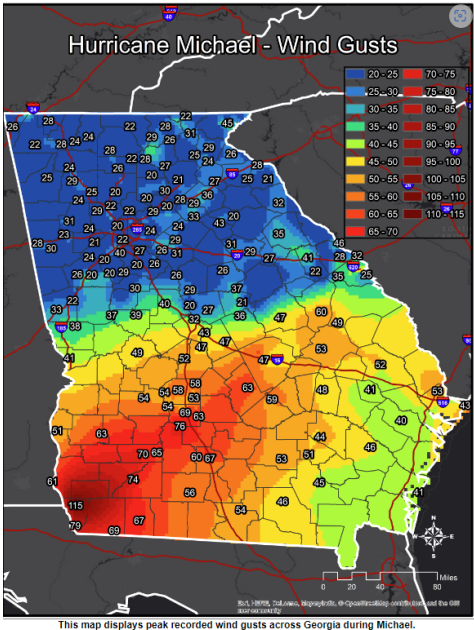
*Historical Occurrences*

According to the NOAA Storm Events Database (see Appendix F), four reports of Tropical Storms occurred in Echols County between 01/01/1950 and 8/30/2023. Besides these events, there were three additional Hurricane/Tropical Storm events occurring on Sept. 11, 2017, one on October 10, 2018, one on July 7, 2021, and on August 30, 2023, which none have yet been recorded in the NCDC database, bringing the total to 7 events between 01/01/1950 and 8/30/2023. The Historic Recurrence Interval is 10.57 years. This is a 9.46% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.3, the past 20-year frequency is 0.1, and the past 50-year frequency is 0.08 (see the Hazard Frequency Table in Appendix D).

Since the Previous Hazard Mitigation Plan was completed in 2018, several Hurricane/Tropical Storm events have occurred. Hurricane Michael, Elsa, Idalia and Helene.

Hurricane Michael (Tropical Storm Michael) passed through Echols County in October 2018, causing 45-55 mph wind gusts. At landfall, it was recorded as a Category storm with 1-minute sustained wind speeds up to 132 mph and 3-second wind gusts up to 169 mph. There are no records of how many properties were impacted.

On July 7, 2021, Tropical Storm Elsa caused a State of Emergency for Echols County as it passed through the area, packing 45 mph winds and heavy rains.



4

## Storm Elsa

July 7

3:00 PM Wed

Time Center

Current Information: Center Location: 28.5 N 83.5 W  
Max Sustained Winds: 65 mph  
Movement: N at 14 mph

Forecast Positions: Tropical Cyclone  
 Post-Tropical  
D = 38 mph S = 38-73 mph  
H = 14-110 mph M = 170 mph

### Inland Flooding Potential

Tropical Storm Elsa

Potential Impacts of Moderate Flooding Rain:

**Flood Watch in effect for NE FL and SE GA**

Flooding rainfall begins this morning with rainbands moving up the coast and continue into tonight

Potential rainfall totals through tonight 3 to 6 inches, locally higher amounts up to 9 inches possible

Heavy rainfall and saturated grounds will enhance the potential for flash, urban, and river flooding

Rivers and tributaries may rapidly overflow their banks. Small creeks, canals, and ditches may become dangerous to cross

Driving conditions could become hazardous with heavy rainfall and flooded roads

Flood waters can enter many structures within multiple hours, some structures becoming uninhabitable or washed away

Ad: 7/7/2021 5:47 AM National Weather Service - Jacksonville

### Storm Total Rainfall

Tropical Storm Elsa

Potential Storm Total Rainfall Amounts:

Inland NE FL (mainly Suwannee Valley) and SE GA: 3 to 6 inches, locally higher amounts up to 9 inches possible

Along the Coast: 2 to 4 inches, locally higher amounts up to 6 inches possible

Timing: Through early Thursday morning

Ad: 7/7/2021 5:47 AM National Weather Service - Jacksonville

### Warnings and Advisories

Storm Elsa

#### Flooding and Wind Advisory

- Tropical Storm Warning** in effect for NE FL and SE GA waters
- Wind Advisory** in effect for St. Johns River basin and FL coast
  - Locally higher winds over the coast along the coast
- Flood Watch** in effect for NE FL and SE GA
- Tornado Watch** in effect for Marion County through 8 AM Wednesday
- Small Craft Advisory** over the NE FL coast

Ad: 7/7/2021 5:47 AM National Weather Service - Jacksonville

### Wind Potential

Tropical Storm Elsa

Potential Impacts of Winds up to 73 MPH:

Tropical storm force winds possible across NE FL and SE GA, with strongest tropical storm force winds likely along and west of the I-75 corridor

Tropical storm force winds begin this morning across the I-75 corridor with higher winds expected over St. Johns River basin and along the coast

Several billion trees or tree limbs, power outages and damage to structures and mobile homes possible

Given saturated grounds, it won't take Tropical Storm force winds to cause trees to blow down

Brief periods with winds over 40 mph on high profile bridges

Ad: 7/7/2021 5:47 AM National Weather Service - Jacksonville

US National Weather Service Jacksonville Florida

July 7, 2021

\*\*\*This information is outdated\*\*\*

07/07 5 AM TS Elsa Update:

Elsa rainbands have already spread into NE FL with some potentially tornadic cells embedded. Elsa moves through area later today into tonight.

Main hazards: widespread moderate flooding potential, heavy rainfall, TS winds (best chance along and west of I-75 corridor), isolated tornadoes, high rips and rough surf.

Monitor briefing: <https://www.weather.gov/.../briefings/nws-jax-briefing.pdf>

# Hurricane Elsa

Watches, Warnings and Advisories

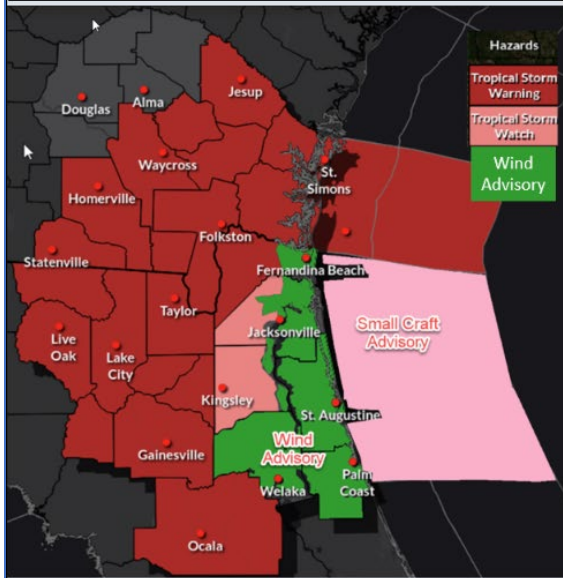
Weather Forecast Office

Jacksonville

Issued July 6, 2021 8:23 PM ET



## Tropical Storm Watch/Warning and Wind Advisories



## Flood Watch



### Timing

- Main impacts begin later tonight into Wednesday
- Some impacts may begin tonight as rain bands move up from the south



- Storm Total rainfall (QPF) forecast valid through Thursday morning.
- Locally, most rainfall from Elsa will occur overnight Tonight into Wednesday.
  - General 3 to 5" inches
  - Near core of storm 5 to 6 inches
  - Locally higher amounts.

**Note:** There will likely be locally higher amounts

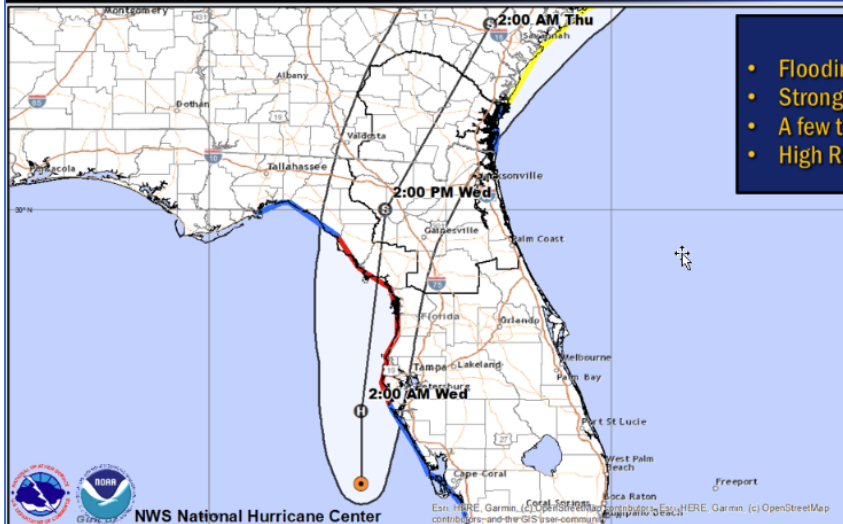
# Hurricane Elsa

8 PM Advisory - July 6

Weather Forecast Office

Jacksonville

Issued July 6, 2021 8:21 PM ET



## Impacts

- **Flooding/Heavy Rainfall** (3-5 inches, isolated 6 inches)
- **Strong Winds** (winds 39 mph or greater possible)
- **A few tornadoes** are possible
- **High Rip Currents** possible Wed

## Hurricane Elsa

Advisory 27A

Tuesday July 06, 2021

08 PM ET

Watches Warnings

HU TS HU TS

NWS Jacksonville

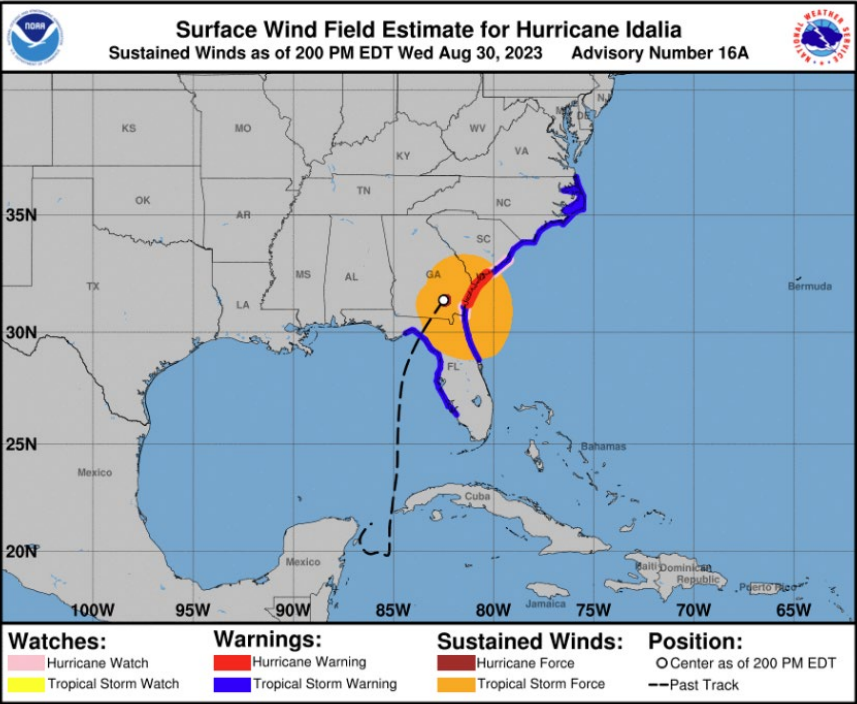
**Current Information:**  
 Center Location: 26.6 N 83.1 W  
 Max Sustained Winds: 75 mph  
 Movement: N at 10 mph

## Forecast Positions:

● Tropical Cyclone  
 ○ Post-Tropical  
 D < 39 mph S 39-73 mph  
 H 74-110 mph M > 110mph

weather.gov/jax

Echols County was one of the many counties in Georgia affected by Hurricane Idalia on August 30, 2023. The county was also one of many that was declared a major disaster. There was heavy rain, causing saturated soil, fallen trees and power lines, and power outages for residents.



Source: <https://www.gpb.org/news/2023/08/29/updates-hurricane-idalias-aftermath-and-georgia-impact>

### Disaster Declaration

**DISASTER DECLARATION**

**PUBLIC & INDIVIDUAL ASSISTANCE**  
Berrien, Brooks, Cook, Glynn and Lowndes

**PUBLIC ASSISTANCE**  
Appling, Atkinson, Bacon, Brantley, Bulloch, Burke, Camden, Candler, Charlton, Clinch, Coffee, Colquitt, Echols, Emanuel, Jeff Davis, Jenkins, Lanier, Montgomery, Pierce, Screven, Tattnall, Thomas, Tift, Toombs, Treutlen, Ware, and Wayne

**PUBLIC ASSISTANCE** can fund debris removal and emergency work on a PUBLIC facility or infrastructure which is damaged or destroyed by a disaster.

**INDIVIDUAL ASSISTANCE** can fund individual and family recovery efforts after a disaster.

**Register now!**  
To register for assistance or for more information, visit [www.disasterassistance.gov](http://www.disasterassistance.gov) or call 1-800-621-3362.

Source: GA GEMA Facebook Post

# Major Hurricane Idalia

5 AM Advisory Wednesday

Jacksonville, FL  
Weather Forecast Office  
Issued August 30, 2023 5:56 AM EDT

Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



## NE FL & SE GA Key Points



Idalia is now a major hurricane, making landfall near the Big Bend this morning. It is the time to hunker down and anticipate tropical storm to hurricane force winds.



Tornado Watch in effect for all of NE FL & SE GA until 3 PM.

## Potential Hazards



Flooding  
Rainfall



Coastal Flooding  
Deadly Rip  
Currents



Tropical Storm /  
Hurricane Winds



Several  
Tornadoes



Review your hurricane emergency  
and ensure your hurricane kit is stocked.

Jacksonville

Visit [hurricanes.gov](https://hurricanes.gov) and [floridadisaster.org](https://floridadisaster.org)

weather

## Tornado Watch



## Tornado Warning

A thunderstorm capable of  
producing a tornado is imminent.

Take shelter now!  
Go to a basement or interior  
room. Stay informed of forecast  
updates.

Take action.

[weather.gov/safety/thunderstorms](https://weather.gov/safety/thunderstorms)

## Tornado Watch

Conditions are favorable for  
development of thunderstorm  
capable of producing tornadoes.

Stay informed in case a warning  
is issued, and know where  
to take shelter.

Be prepared.



US National Weather Service Jacksonville Florida

August 30 · 🌐

\*\*\* Please refer to the latest post for the most up to date information on Hurricane Idalia\*\*\*

🔊 5 AM Major Hurricane Idalia Update Wednesday 8/30

Idalia will make landfall this morning as a Major Hurricane. Remain sheltered today as tropical storm to hurricane force winds are expected. There is also a Tornado Watch now in effect for all of NE FL & SE GA. 🌪️

If a tornado warning is issued, go to your safe room:

- ✅ Lowest Floor
- ✅ Interior Room
- ✅ Away from Windows

Be sure to have multiple ways to receive warnings. Stay safe and weather aware today!

Source: US National Weather Service Jacksonville, Florida Facebook Post

Although the most complete available data were used for this analysis, the possibility remains that other hurricane/tropical storm events that went unreported or underreported may have occurred in the community.

**Almost all of Echols County has a wind hazard score of 2 (91-100 mph gust).** A wind hazard score of 3 (101-110 mph gust) affects a small portion of the southwestern corner of the County. A map showing the wind hazard scores and critical facilities can be found in Appendix A.

**C. Inventory of Assets Exposed and Potential Loss**

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Echols County are equally vulnerable to this hazard.

An estimated 100% of the Residential property (1,726 of 1,726) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the community's Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (20 of 20) may be affected, totaling \$13,596,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor's Office.

Damage to crops is not considered in any of these figures. According to the Center for Agribusiness & Economic Development's 2022 Georgia Farm Gate Value Report, agricultural production's total farm gate value in Echols County is \$198,242,782.

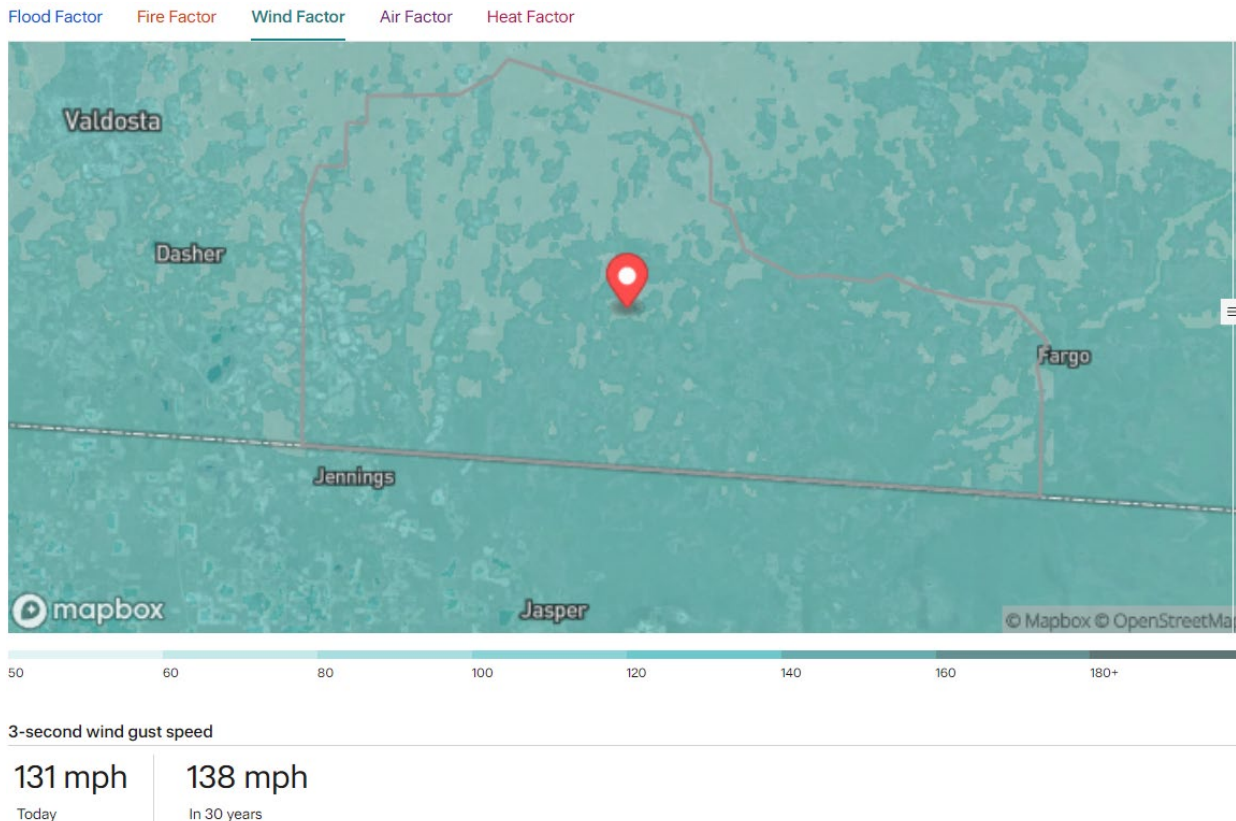
A potential Category 1 Hurricane would damage buildings, No essential facilities would be damaged, but all essential facilities within Echols County would have an expected operation loss of less than one day. No households would be displaced, and no short-term shelter would be needed.

**D. Climate Change and Hurricanes for Echols County**

According to 1 First Street, Echols County has an extreme wind factor based on the projected likelihood and speed of hurricane, tornado, or severe storm winds impacting it. It is most at risk from hurricanes. Average maximum wind speeds in Echols County have increased compared to 30 years ago, and 46% of homes in Echols County have at least some risk.

If an exceedingly rare windstorm (a 1-in-3,000-year storm event) occurred today, it could cause wind gusts of up to 131 mph to reach Echols County. A hurricane of this severity has a 1% chance of occurring at least once over the next 30 years. In 30 years, an event of this same likelihood would show increased wind gusts up to 138 mph due to a changing environment.

Echols County's potential high wind gust as of today is 131 mph.



Source: 1 First Street

#### E. Land Use and Development Trends

The County has seen a slight decrease in population over the last few years. Echols County does not have zoning regulations. The county's mandatory building and fire codes are enforced by a building inspector. The County participates in comprehensive planning and the required updates of the Service Delivery Strategy. No other land use or development trends related to this hazard have been identified.

#### F. Multi-Jurisdictional Differences

Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. Hurricane/tropical storm events are usually area-wide, but the impact may be more severe in places with higher population density due to more people being in danger, more people needing to evacuate, more debris from damaged buildings, and other impacts associated with higher population density. Echols County has been a member of the National Flood Insurance Program since 2009. (source: <https://www.fema.gov/cis/GA.html>).

#### G. Overall HRV Summary of Events and Their Impact

Hurricanes/tropical storms can potentially cause damage at any place or time throughout Echols County. They are usually preceded by some watch or warning well in advance. The cost of damage and potential loss of life may be higher if the path of the hurricanes/tropical storms covers populated areas instead of more sparsely populated or unpopulated areas.

The Echols HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community’s overall vulnerability to this hazard.

## **SECTION II. FLOODS**



Terry Richards, Valdosta Daily Times, A boat sits in the roadway at one flood end of Elkus Garden Road in Mayday Tuesday. The road leads towards homes by the banks of the Alapaha River which are now cut off. (02/24/2021)

### **A. Identification of Hazard**

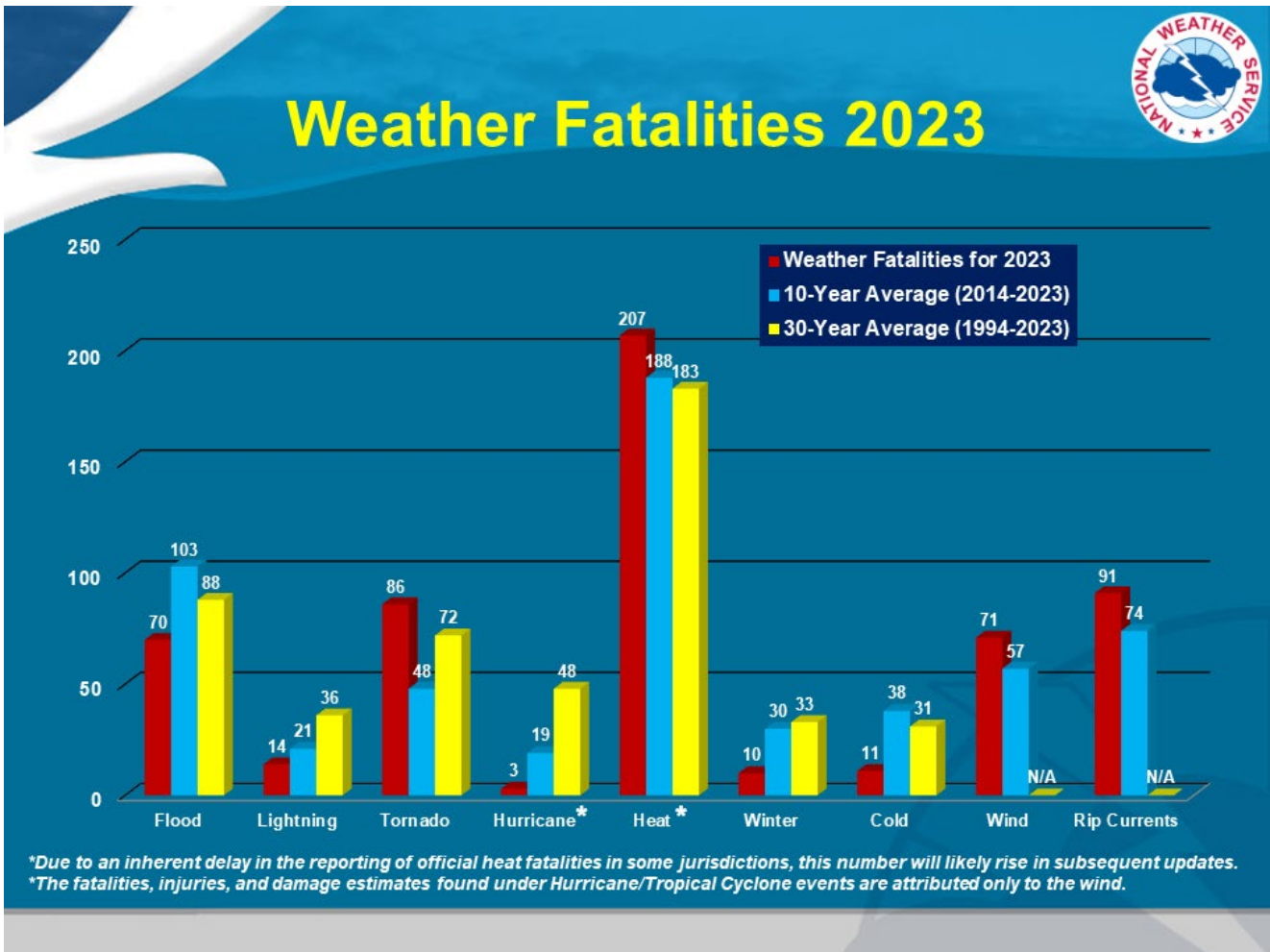
The threat of a flood has been chosen by the HMPUC as the second most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events. For further information, see the HAZUS Report in Appendix G.

Floods may occur at any time, in many cases without warning, and their effects can range from minor inconvenience to wholesale destruction. Floods are most often caused by heavy rains associated with thunderstorms, hurricanes, or tropical storms. Flooding can result from a rise in the level of a body of water such as a river or a lake, or from rain falling faster than it can be absorbed by the ground (especially under weather conditions that make soil less pervious, for example after a period of drought). Flooding frequently occurs in urban areas when a large amount of rain, above the capacity of the urban drainage system, falls on impervious surfaces such as streets, buildings, and parking lots. Flooding can also result from the failure of man-made structures such as levees and dams.

Flash floods are floods that occur in short time-spans, often so quickly that people are caught off-guard. Flash floods can occur as a result of any of the causes mentioned above, but are most often due to extremely

heavy rainfall from thunderstorms. More information is available at the National Weather Service (<https://www.weather.gov/phi/FlashFloodingDefinition>).

According to the National Weather Service, more deaths occur each year due to flooding than from any other thunderstorm-related hazard. The Centers for Disease Control and Prevention report that over half of all flood-related drownings occur when a vehicle is driven into hazardous flood water. The next highest percentage of flood-related deaths is due to walking into or near flood waters. People underestimate the force and power of water. Many of the deaths occur in automobiles as they are swept downstream. Of these drownings, many are preventable, but too many people continue to drive around the barriers that warn you the road is flooded. A mere 6 inches of fast-moving flood water can knock over an adult. It takes just 12 inches of rushing water to carry away a small car, while 2 feet of rushing water can carry away most vehicles. It is never safe to drive or walk into flood waters.



Source: <https://www.threads.net/@rmaywx/post/C8-q5SOSydW/media>

Flood Zones, as defined by FEMA, are described in the table below.

### Flood Zone Designations and Descriptions

Source: FEMA (<https://hazards.fema.gov/onlinelomc/ext/Help/loadInstructions>)

Zone Designations	Zone Descriptions
<b>A</b>	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.
<b>AH</b>	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
<b>AO</b>	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
<b>A1-A30</b>	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
<b>A99</b>	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.
<b>AE</b>	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
<b>AR</b>	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
<b>V</b>	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
<b>V1-V30</b>	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
<b>VE</b>	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
<b>B</b>	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
<b>C</b>	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.
<b>D</b>	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.
<b>X Shaded</b>	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
<b>X Unshaded</b>	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.

Echols County is vulnerable to the effects of flooding. Areas within flood zones are naturally more vulnerable. For more information, see the maps in Appendix A.

## B. Profile of Events, Frequency of Occurrence Probability



According to the NOAA Storm Events Database (see Appendix F), there are 6 reports of floods occurring in Echols County between 01/01/1950 and 12/31/2024. The Historic Recurrence Interval is 12.33 years. This is a 8.11% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.1, the past 20-year frequency is 0.1, and the past 50-year frequency is 0.12 (see the Hazard Frequency Table in Appendix D).

Flood events have been recorded since the previous hazard mitigation plan was adopted. However, a major flooding event occurred on April 5, 2009 in the unincorporated community of Mayday. 25 homes were evacuated, and a road was closed due to a washout. Major flooding was reported on both sides of the Alapaha River. A house normally 10 feet above ground level had a water level 20 inches below the floor at that time. During this event, the Alapaha River reached the highest crest on record, 107.62 feet.

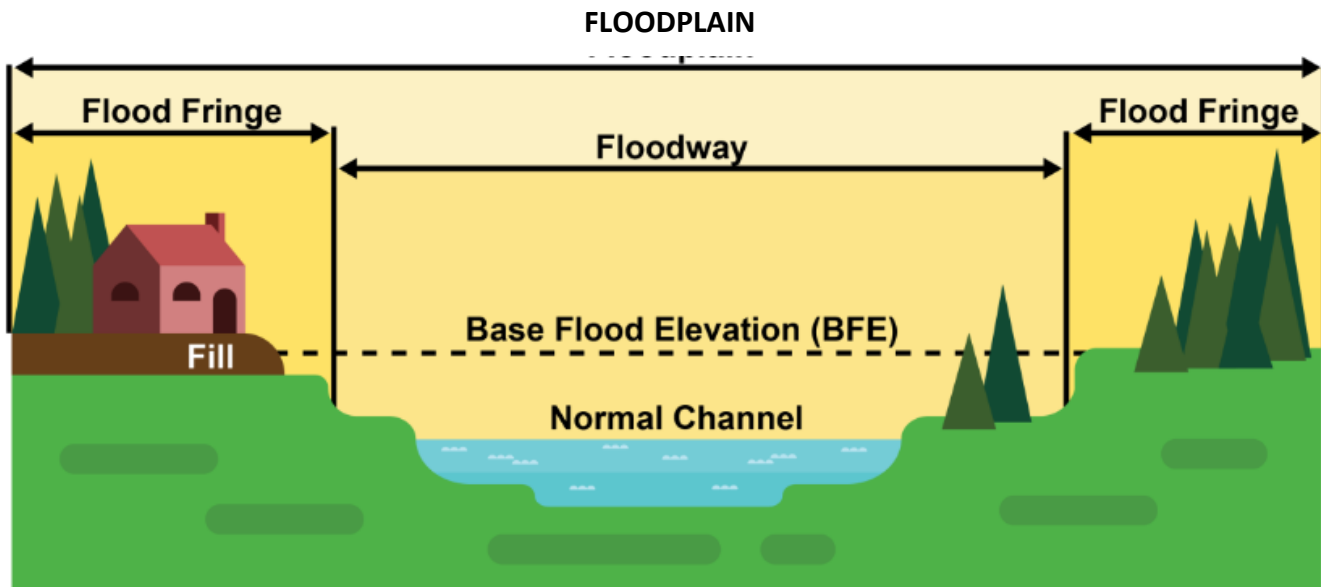
Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

## C. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that those parts of Echols County that are in FEMA-determined flood zones (in the case of Echols County, all these zones are Flood Zone “A”) are vulnerable to this hazard.

An estimated 100% of the Residential property (1,726 of 1768) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (42 of 42) in the community may be affected, with a total value of \$31,544,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor’s Office.

Damage to crops is not taken into account in any of these figures. According to the Center for Agribusiness & Economic Development’s 2022 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Echols County is \$198,242,782.



Source: [flood2.jpg \(800×342\)](#)

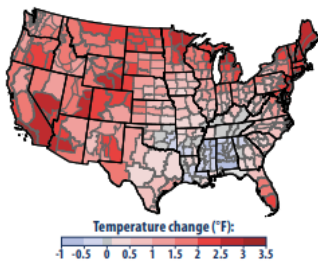
According to the inventory database reports and maps, none of the 25 Critical Facilities and Infrastructure for Echols County are within flood zones, therefore it is predicted that no Critical Facilities are vulnerable to this hazard.

Many individuals do not have access to transportation and thus are susceptible to weather hazards. It is very important to notify these individuals through weather radios, radio stations, and other means so that they may seek shelter and/or make arrangements for transportation to shelter facilities. Therefore, a major consideration should be helping individuals, government, and non-profit organizations prepare for the pending flood hazard events.

The GMIS reports does not list any Repetitive Loss/NFIP properties in Echols County.

#### D. Climate Change and Floods for Echols County

In the coming decades, Georgia will become warmer, and the state will probably experience more severe floods



*Rising temperatures in the last century. Georgia has warmed less than most of the United States. Source: EPA, Climate Change Indicators in the United States.*

and droughts. Even today, more rain is falling in heavy downpours, and sea level is rising about one inch every decade. Higher water levels are eroding beaches, submerging low lands, and exacerbating coastal flooding. Like other southeastern states, Georgia has warmed less than most of the nation during the last century. But during the next few decades, the changing climate is likely to harm livestock, increase the number of unpleasantly hot days, and increase the risk of heat stroke and other heat-related illnesses.

Changing the climate is likely to increase the severity of both inland flooding and droughts. Since 1958, the amount of precipitation falling during heavy rainstorms has increased by 27 percent in the Southeast, and the trend toward increasingly heavy rainstorms is likely to continue.

Source: <https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-ga.pdf>

Floods are the most common type of natural hazard in the United States, with 99% of the U.S. counties experiencing a flood event from 1996-2019. Climate change is increasing the frequency and magnitude of flooding across Georgia. In coastal communities, sea level rise is elevating storm surge and high tide flooding to new heights. Throughout the state, severe rain events are overwhelming local infrastructure, flooding streets and properties. As higher temperatures lead to prolonged droughts, even natural surfaces will struggle to absorb heavy downpours, intensifying erosion and runoff.

Community Rating System in Georgia



Many Georgia property owners need to consider the increasing risk of flood damage due to climate change. According to the Federal Emergency Management Agency (FEMA), just one inch of water can result in \$25,000 in damage to a home. These repairs are typically not covered by standard homeowners or renters’ insurance policies. Instead, households must purchase separate flood insurance to protect their property. Most Americans get their flood insurance through the National Flood Insurance Program, or NFIP, which is managed by FEMA.

FEMA develops Flood Insurance Rate Maps (FIRMs) to delineate areas at high risk from flooding, known as the Special Flood Hazard Area (SFHA). These maps are based on studies that use highly accurate elevation data and account for watershed characteristics, history of past storms, and dynamics of the water bodies in the area.

Flood insurance is legally required for insurable structures that 1) are located within a mapped SFHA, and 2) have a federally backed mortgage. However, property owners are only eligible for flood insurance through the NFIP if their community meets the minimum floodplain management criteria<sup>2</sup>.

Source: [https://www.georgiaclimatoproject.org/portal/wp-content/uploads/sites/7/2022/02/NFIP-Final-12-20-21\\_jg.pdf](https://www.georgiaclimatoproject.org/portal/wp-content/uploads/sites/7/2022/02/NFIP-Final-12-20-21_jg.pdf)

<sup>2</sup> A floodplain is the relatively flat land adjacent to a body of water, such as a river or stream, which becomes flooded when a channel capacity is exceeded. The natural processes of periodic flooding, accompanied by erosion and deposition, bring changes to the topography, soils, vegetation, and physical features within these areas over time.


## E. Land Use and Development Trends

The County has seen a slight decrease in population over the last few years. Echols County does not have zoning regulations. The County does have mandatory building and fire codes which are enforced by a building inspector. The County participates in comprehensive planning and in the required updates of the Service Delivery Strategy.

No other land use or development trends that relate to this hazard have been identified at this time.

## F. Multi-Jurisdictional Differences

Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. According to FEMA data, 15.0% of the total area of Echols County (40,345 acres) is within a flood zone (all in Zone A).




FEMA

Community Status Book Report

Communities Participating in the National Flood Program

Select here for not participating



GEORGIA

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Tribal	Reg-Emer Date	CRS Entry Date	Curr Eff Date	Curr Class	% Disc
135272#	ECHOLS COUNTY*	ECHOLS COUNTY		08/03/09	08/03/09	No	08/03/09				
130085#	EDISON, CITY OF	CALHOUN COUNTY		09/02/09	09/02/09(M)	No	09/02/09				

Echols County is a member of the National Flood Insurance Program. (source: <https://www.fema.gov/cis/GA.html>). As of late 2017, Echols County is in compliance with NFIP requirements and intend to remain in compliance by enforcing flood plain ordinances which prohibit or severely limit development in floodplains. For example, the Echols County Water Resource Districts Ordinance establishes Groundwater Recharge Area Districts, River Corridor Protection Districts, and Wetlands Districts, with restrictions on construction and land uses within those districts.

## DAMAGE ASSESSMENT AFTER A FLOOD EVENT

Echols County has in place mechanisms for flood event damage determinations through the EMA Director working with the Echols County Building Inspector and Board of Commissioners. The EMA Director and Building Inspector will, following a flood event, or any other event that causes damage to structures in flood areas, make damage determinations to structures in the flood hazard areas that have been affected by the flood.

They will perform damage assessments, using the market value, to determine if they constitute SI (Substantial Improvements), or SD (Substantial Damage) and inform property owners of how to apply for permits. As the agencies that implement the addressed commitments and requirements of the NFIP, permits are not approved until signed off as compliant with all building codes and NFIP requirements. Assessment of damages after a disaster helps in community resiliency and future mitigation strategies.

Once the repair work has begun, the EMA Director and the Building Inspector will conduct field investigations during construction to make sure that the work complies with issued permits and work with owners to correct any violations found. The final step of the process is for the Echols County officials to coordinate with property owners and insurance adjusters on all NFIP flood insurance claims and Increased Cost of Compliance (ICC) coverage

Echols county is a consolidated government with 53% of the county's land sand population living in a watershed. Echols County's initial Flood Insurance Rate Map (FIRM) date was 08/06/2009 with the current effective date of

08/06/2009. The county does not qualify to participate in the Community Rating System (CRS) discount program.

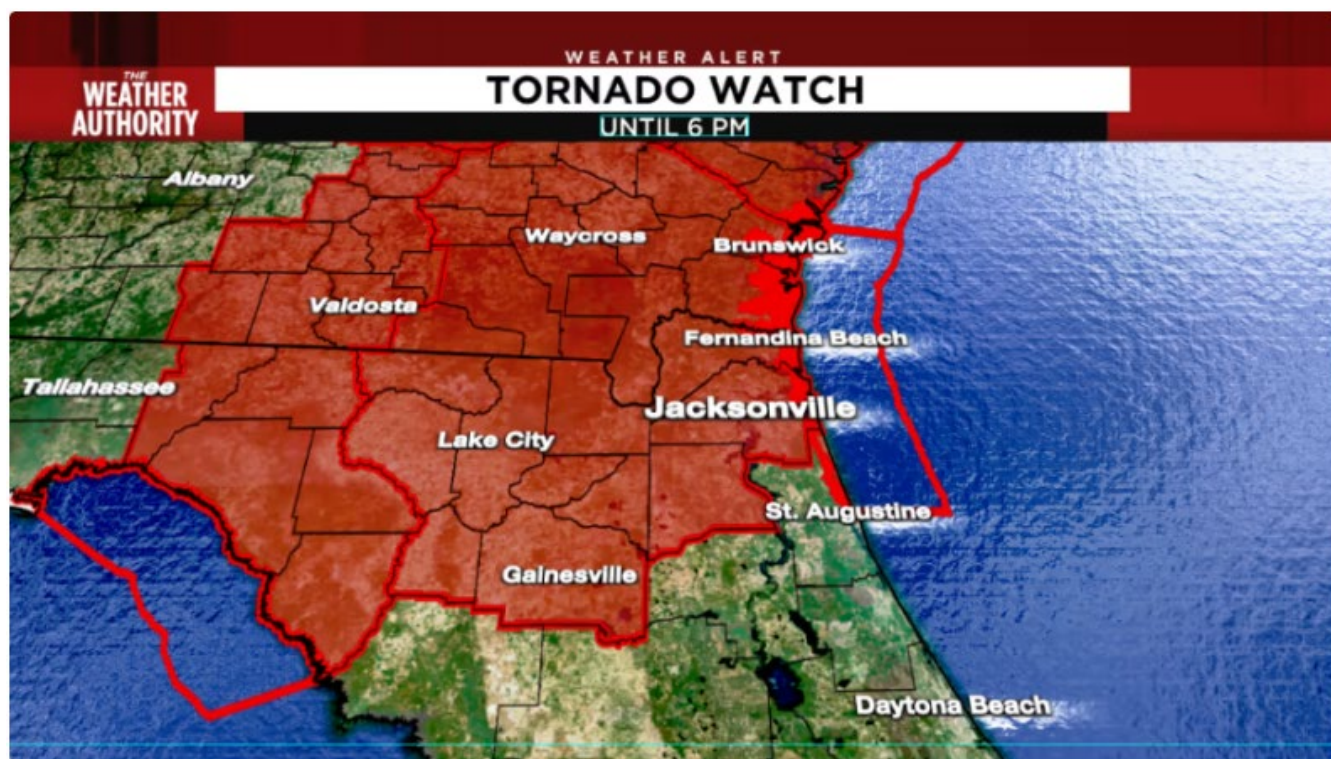
G. Overall HRV Summary of Events and Their Impact

Floods have the potential to cause damage at any place, at any time, throughout Echols County, and especially in flood-prone areas. Floods can happen quickly and residents may not have time to evade floodwaters. The cost of the damage and potential loss of life may be higher if the event strikes populated areas compared to more sparsely populated or unpopulated areas.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts from this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community’s overall vulnerability to this hazard.

### SECTION III. TORNADOS



*Tornado Watch (Copyright 2021 by WJXT News4jax - All rights reserved.)*

#### A. Identification of Hazard

The threat of tornadoes has been chosen by the HMPUC as the third most likely hazard to occur and cause damage in the community, based on experience, the FEMA-described methodology, and other factors. Historical data have been examined from various sources, including the National Climatic Data Center (see Appendix F) , as well as from local history and personal accounts in order to determine the frequency of events. For further information, see the HAZUS Report in Appendix G.

A tornado is a violently rotating column of air extending from a thunderstorm to the ground, usually spawned when the weather is warm, humid and unsettled, which are conditions common to the local area. Severe weather conditions, such as a thunderstorm or hurricane, can produce a tornado. Tremendous destruction can occur with the combined action of strong winds (some at speeds over 250 mph) and the impact of wind-borne debris. Damage paths can be more than one mile wide and fifty miles long. Although the path may be erratic, storm movement is usually from southwest to northeast. Tornadoes most often occur between 3 p. m. and 8 p.m., but may occur at any time of day or night. The official tornado season lasts from March-August with a peak in March-May; but they can occur anywhere, any time of year. Planning and quick response are keys to surviving a tornado.

About 1,200 tornadoes hit the U.S. yearly. A tornado watch is issued when weather conditions are favorable for tornadoes. During a tornado watch, residents are advised to watch and prepare for severe weather and stay tuned to NOAA Weather Radio to know when warnings are issued. A tornado warning is issued when a tornado has been reported by spotters or indicated by radar and there is a serious threat to life and property to those in the path of

the tornado. When a tornado warning is issued, residents must act immediately to find safe shelter. A warning can cover parts of counties or several counties in the path of danger.

The Enhanced Fujita Scale, implemented by the National Weather Service in 2007, assigns a tornado a rating based on estimated wind speeds and related damage. The wind speeds associated with the EF ratings are shown in the table below. Because of the difficulty of measuring wind speeds inside a tornado, wind speeds are estimated based on the type of damage that occurs; more information is available on the NOAA website at <http://www.spc.noaa.gov/faq/tornado/ef-scale.html>.

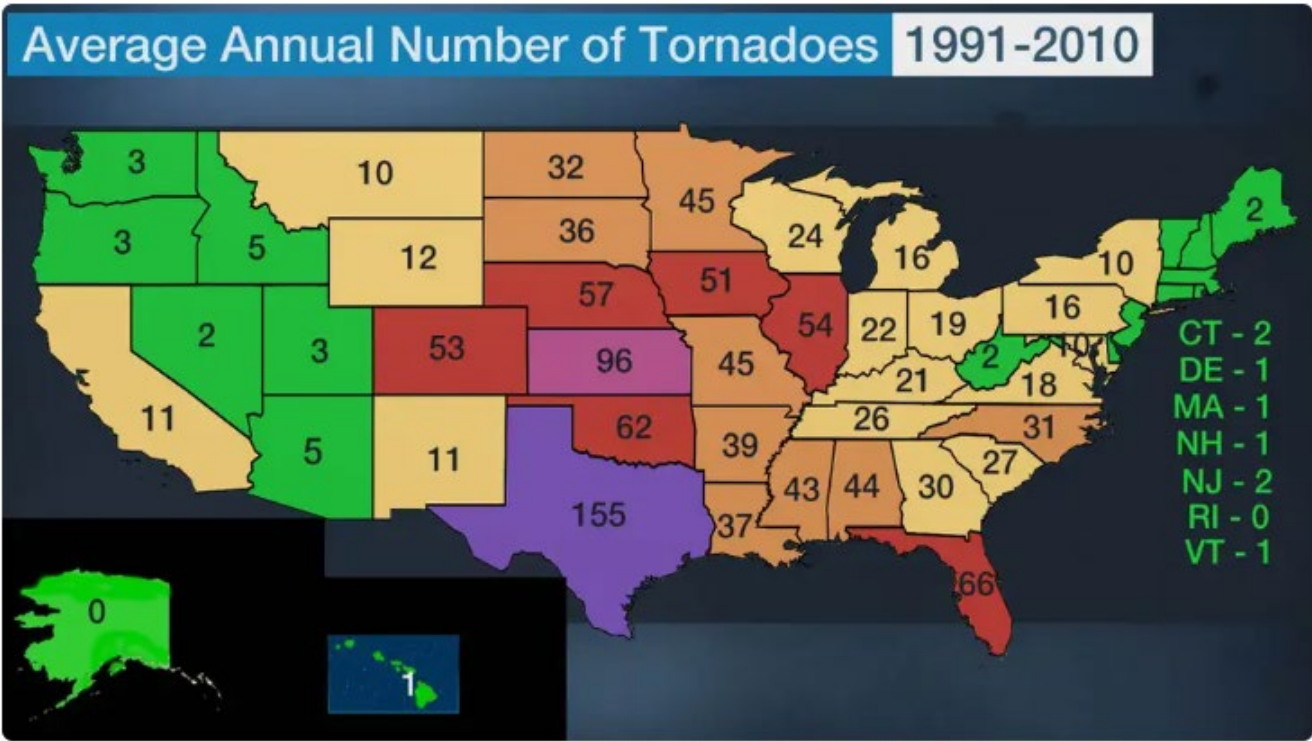
#### ENHANCED FUJITA WIND DAMAGE SCALE

(Source: <http://www.spc.noaa.gov/faq/tornado/ef-scale.html>)

EF Number	3-Second Gust	Damage
EF-0	65 to 85 mph	Light damage. Some damaged chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
EF-1	86 to 110 mph	Moderate Damage., The lower limit is the beginning of hurricane wind speed, peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
EF-2	111 to 135 mph	Significant Damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; high rise windows broken and blown in; light-object missiles generated.
EF-3	136 to 165 mph	Severe Damage. Roofs and walls were torn off well-constructed houses; trains overturned; most trees in the forest were uprooted; heavy cars were lifted off the ground and thrown.
EF-4	166 to 200 mph	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated.
EF-5	Over 200 mph	Incredible, damage. Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 m (109 yards); trees debarked; steel reinforced concrete structures badly damaged.

Echols County is vulnerable to the effects of tornadoes. In Figure 1.3 shows the average number of tornadoes throughout the county. NOAA’s National Centers for Environmental (NCEI) compiled the 20-year annual average for every state based on data from 1991 to 2010. The State of Georgia has an estimate of 30 tornadoes per month. However, Georgia surpassed the historical data of an average of 30 tornadoes annually in mid-February 2023. Georgia was ranked last year by the National Oceanic and Atmosphere Administration as the top ten states for tornadic activity, with 56 twisters ripping through.

Figure 1.3



The number in each state depicts the average annual number of tornadoes based on the 20-year period from 1991 to 2010.  
(Data: NOAA/NCEI)

**B. Profile of Events, Frequency of Occurrences, Probability**

According to the NOAA Storm Events Database (see Appendix F), there are 5 reports of tornadoes occurring in Echols County between 01/01/1950 and 12/31/2024. The Historic Recurrence Interval is 14.8 years. This is a 6.76% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.1, the past 20-year frequency is 0.05, and the past 50-year frequency is 0.1 (see the Hazard Frequency Table in Appendix D). The most severe tornado on record has been an F-1, in 1993, and there have also been 3 F-0 tornadoes recorded.

No tornado events have been recorded since the previous hazard mitigation plan was adopted. However, tornadoes have historically affected the community. On Nov. 6, 2002, a tornado caused trees to be blown down along the County’s main transportation route (Highway 94) and produced a 200 yard wide debris

field. Earlier, on March 31, 1993, a tornado destroyed a large building on the north side of Statesville on U.S. Highway 129. A church and about 50 homes and trailers were also damaged from the tornado.

Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

C. Inventory of Assets Exposed and Potential Loss

**In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Echols County is equally vulnerable to this hazard.**

An estimated 100% of the Residential property (1,726 of 1,726) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (20 of 20) in the community may be affected, with a total value of \$13,596,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor’s Office.

Damage to crops is not taken into account in any of these figures. According to the Center for Agribusiness & Economic Development’s 2022 Georgia Farm Gate Value Report ([2022 Farm Gate Value Report](#)), the total farm gate value of agricultural production in Echols County is \$198,242,782.

According to the inventory database reports and maps, all of the 25 Critical Facilities and Infrastructure for Echols County could be affected by this hazard. The total value of these Critical Facilities is \$17,829,730.

D. Climate Change and Tornadoes in Echols County

John T. Allen, a professor of meteorology at Central Michigan University, wrote in a USA Today opinion column that while ties to climate change are still uncertain, there appears to have been an "eastward shift in tornado frequency" and increasing frequency of tornadoes in outbreaks over the past few decades. “Climate projections for the late 21<sup>st</sup> century have suggested that the conditions favorable to the development of severe storms that produce tornadoes will increase over North America, and the impact could be greatest in the winter and fall,” he added. (Source: USA Today March 27, 2023)

Years of research have shown how climate change intensifies rain storms, heat waves, and hurricanes, as NPR reported, however the same cannot exactly be said for tornadoes, however. Scientists know that warm weather is a key ingredient in tornadoes and that climate change is altering the environment in which these kinds of storms form. But they can’t directly connect those dots, as the research into the link between climate change and tornadoes still lags behind that of the other extreme weather events such as hurricanes and wildfires. This is due in part to the lack of data – even though the U.S. leads the world in tornadoes, averaging about 1,200 a year.

Less than 10% of severe thunderstorms produce tornadoes, which makes it tricky to draw firm conclusions about the processes leading up to them and how they might be influenced by climate change, Harold Brooks, a tornado scientist at the National Severe Storms Laboratory, told the Associated Press in 2021.

Other factors that make climate change attribution difficult include the quality of the observational record and the ability of models to simulate certain weather events. The National Oceanic and Atmospheric Administration says that is the case with tornadoes.

Source:<https://www.npr.org/2023/03/27/1166209327/tornadoes-climate-change-mississippi-alabama#:~:text=John%20T.,over%20the%20past%20few%20decades>

**E. Land Use and Development Trends**

Typically, mobile/manufactured homes are most vulnerable to tornado damage. According to 2022 Census Bureau estimates, 56.3% of occupied housing units in Echols County are mobile homes (870 mobile homes, containing an estimated 2,629 people based on the average household size of 3.02 persons per household in the County).

The County has seen a slight decrease in population over the last few years. Echols County does not have zoning regulations. The County participates in comprehensive planning and in the required updates of the Service Delivery Strategy. No other land use or development trends that relate to this hazard have been identified at this time.

**F. Multi-Jurisdictional Differences**

Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. Tornadoes tend to follow a straight path regardless of natural features or political boundaries. However, the impact may be more severe in places with higher population density due to more people being in danger, more people needing to be evacuated, more debris from damaged buildings, and other impacts associated with higher population density. The community of Statenville (unincorporated) is the largest community in Echols County. In jurisdictions with many mobile homes, the damage can be more severe.

**G. Overall HRV Summary of Events and Their Impact**

Tornadoes have the potential to cause damage at any place, at any time, throughout Echols County. They can form quickly and residents may not have time to find adequate shelter, or else adequate shelter facilities may not be available. The cost of the damage and potential loss of life may be higher if the event strikes populated areas as opposed to more sparsely populated or unpopulated areas, or if the event strikes areas with a large number of mobile homes.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts of this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community’s overall vulnerability to this hazard.

## **SECTION IV. WILDFIRES**



### **A. Identification of Hazard**

The threat of wildfire has been chosen by the HMPUC as the fourth most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center and Georgia Forestry Commission (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events.

Much of southern Georgia is covered by forests, and fires play an important role in the health of forest ecosystems by breaking down organic matter into soil nutrients and helping seeds to germinate (source: NASA, [https://earthobservatory.nasa.gov/Features/GlobalFire/fire\\_2.php](https://earthobservatory.nasa.gov/Features/GlobalFire/fire_2.php)). When naturally occurring wildfires are suppressed, combustible fuel (such as dead leaves and branches) accumulates in the forest. This increases the risk of larger, more destructive fire events in the future. Controlled, prescribed fires lower the risk of larger fire events and are beneficial to forest health (source: USDA, <https://www.fs.usda.gov/detail/dbnf/home/?cid=stelprdb5281464>).

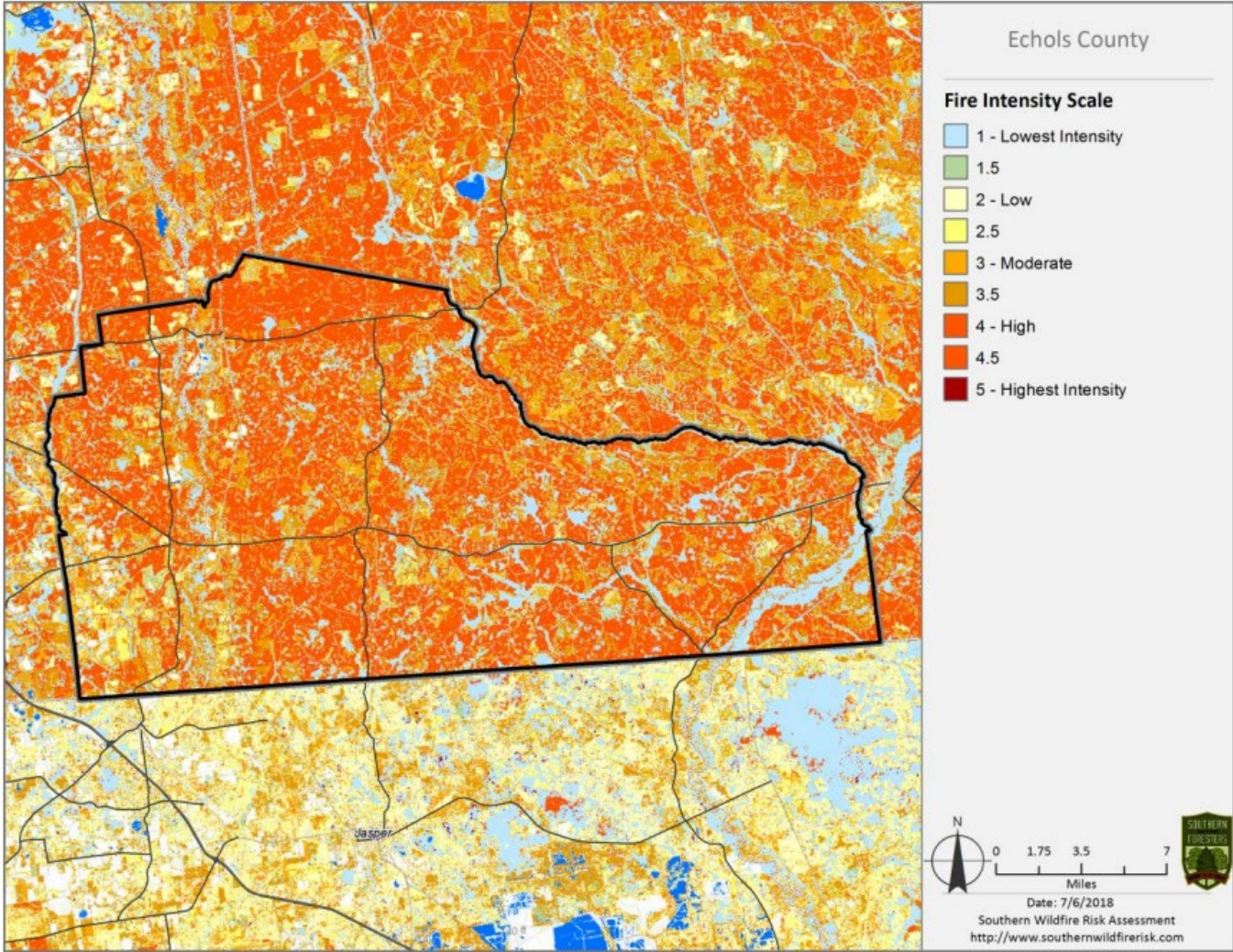
Low humidity, lack of recent precipitation (or drought conditions), wind speed, and temperature are a combination of weather conditions that favor the kindling and spread of wildfires. A high fuel load (i.e. the accumulation of dead vegetation), in combination with the above, also provides for the kindling and spread of wildfires. Most of Echols County is forested with commercial and free-growing pine trees and other trees. These trees can and do catch fire frequently in both small and large fire events.

According to NASA (<https://earthobservatory.nasa.gov/IOTD/view.php?id=89757>), an estimated 84 percent of wildfires are caused by humans. Some common ways that people start fires include discarding cigarettes, leaving campfires unattended, and losing control of prescribed burns or crop fires. Sparks from railroads and power lines, as well as arson, also routinely cause wildfires.

When a residential area, whether it be a single home or an entire subdivision, is adjacent to an area containing vegetative fuels, such as a forest or other wooded area, this is referred to as a Wildland-Urban Interface area (WUI). These are the areas at greatest risk for property damage due to Wildfire.

Echols County is vulnerable to the effects of wildfires. The USDA Forest Service assigns areas a Wildfire Hazard Potential (WHP) score of Very Low, Low, Moderate, High, or Very High. As the map below shows, much of Echols County is scored High, with some areas scored Very High as well as some areas rated Low or Moderate and very few areas rated Non-burnable.

Source: Southern Wildfire Risk Assessment



## B. Profile of Events, Frequency of Occurrences, Probability

According to Georgia Forestry Commission data (see Appendix F), there are 164 reports of wildfires occurring in Echols County between 01/01/1967 and 12/31/2024. The Historic Recurrence Interval is 0.07 years. This is a 1366.67% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 14.8, the past 20-year frequency is 8.2, and the past 50-year frequency is 3.28 (see the Hazard Frequency Table in Appendix D). The most destructive event on record was in May 1985, when 1,724 acres burned.

Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

## C. Inventory of Assets Exposed and Potential Loss

**In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Echols County is equally vulnerable to this hazard.**

An estimated 100% of the Residential property (1,726 of 1,726) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (20 of 20) in the community may be affected, with a total value of \$13,596,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor's Office.

Damage to crops is not taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2022 Georgia Farm Gate Value Report ([2022 Farm Gate Value Report](#)), the total farm gate value of agricultural production in Echols County is \$198,242,782.

According to the inventory database reports and maps, all of the 25 Critical Facilities and Infrastructure for Echols County could be affected by this hazard. The total value of these Critical Facilities is \$17,829,730.

## D. Climate Change and Wildfires in Echols County

Climate change has been a key factor in increasing the risk and extent of wildfires in the United States. Climate change enhances the drying of organic matter in forests (the material that burns and spreads wildfire), and has doubled the number of large fires between 1984 and 2015 in the western United States.

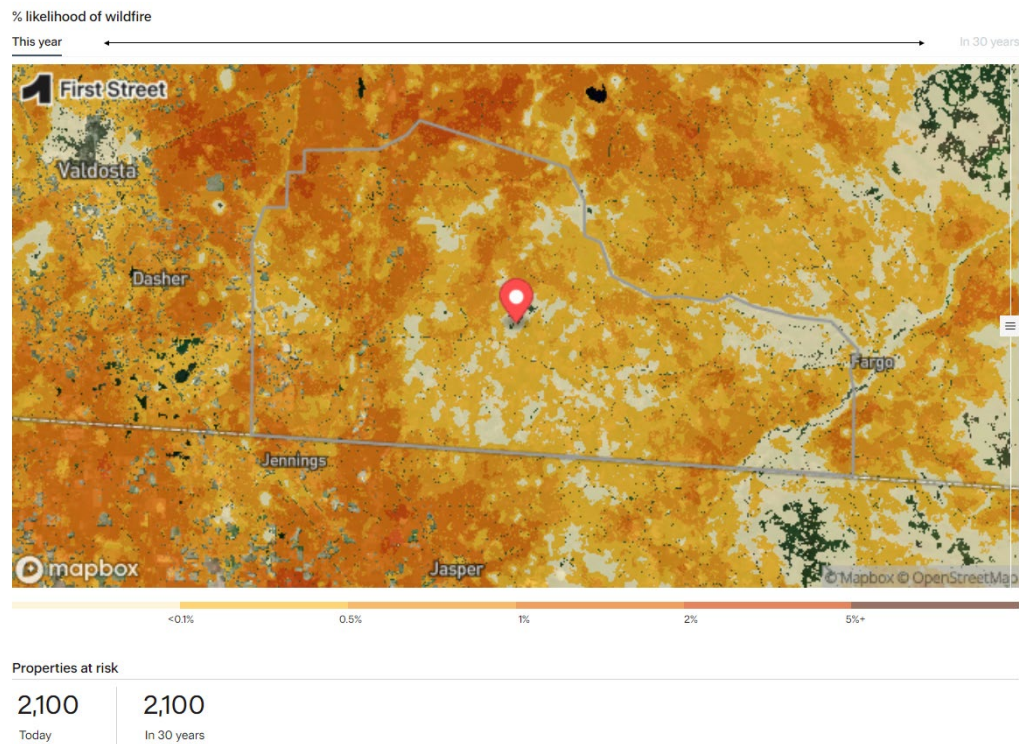
Research shows that changes in climate create warmer, drier conditions. Increased drought, and a longer fire season are boosting these increases in wildfire risk. For much of the U.S. West, projections show that an average annual 1 degree C temperature increase (1.8 degrees Fahrenheit) would increase the median burned area per year as much as 600 percent in some types of forests. In the Southeastern United States modeling suggest increased fire risk and a longer fire season, with at least a 30 percent increase from 2011 in the area burned by lightning -ignited wildfire by 2060. Source:

<https://www.c2es.org/content/wildfires-and-climate-change/>

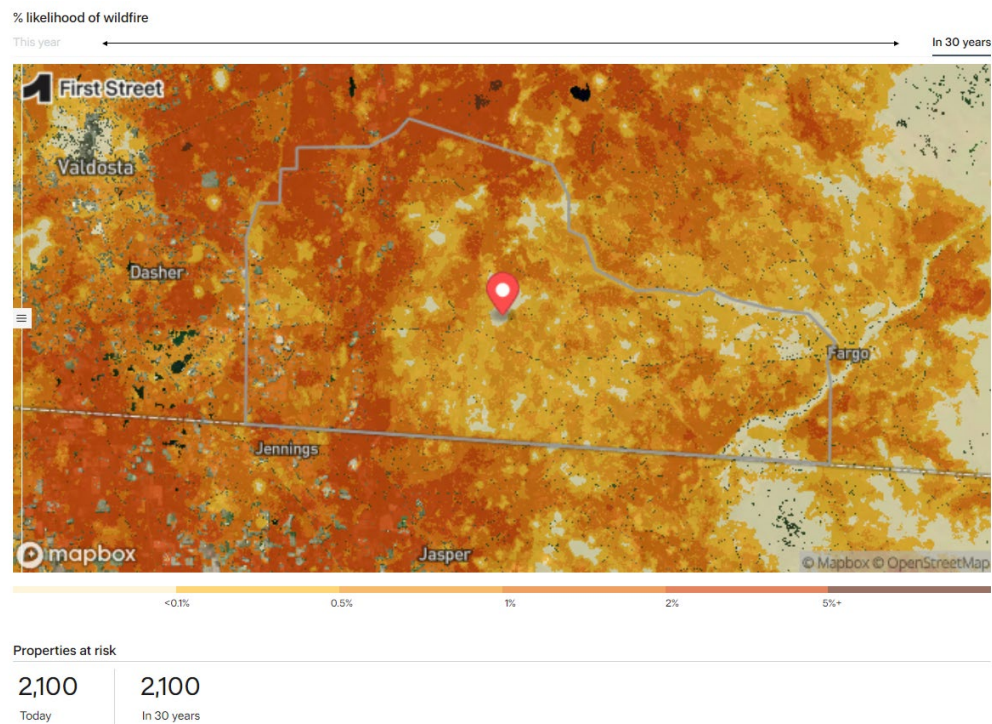
According to 1 First Street, there are 2,100 properties in Echols County that have some risk of being affected by wildfire over the next 30 years. This represents 99% of all properties in Echols County.

In addition to damaging properties, wildfire can also cut off access to utilities, emergency services, impact evacuation routes, and may impact the overall economic well-being of an area. Overall, Echols County has a severe risk of wildfire over the next 30 years. This is based on the level of risk the properties face rather than the proportion of properties with risk. Source: <https://firststreet.org/city/echols-county-ga/1326156/fsid/fire>

# **Echols County potential for wildfires today**



# **Echols County’s potential for wildfires in 30 years due to Climate Change**



Source: <https://firststreet.org/city/echols-county-ga/1326156/fsid/fire>

### E. Land Use and Development Trends

The County has seen a slight decrease in population over the last few years.

Echols County does not have zoning regulations. The County has mandatory building and fire codes which are enforced by a building inspector. The County participates in joint comprehensive planning and in the required updates of the Service Delivery Strategy.

No other land use or development trends that relate to this hazard have been identified at this time.

### F. Multi-Jurisdictional Differences

Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. Wildfires may happen at any place at any time, but are more likely in forested areas. Echols County has many areas rated “High” and “Very High” for Wildfire Hazard Potential. The impact of a wildfire would be more severe in places with higher population density due to more people being in danger and more potential for the destruction of homes and other buildings. In jurisdictions without building codes and inspections, structures may exist that are not built to code and therefore may be especially vulnerable to the effects of wildfires and other hazards.

The Echols County Fire Department has 3 volunteer fire stations and are staffed by volunteer forces.

The ISO classes of the fire stations in Echols County are as follows:

Station	ISO Class
<b>Echols County Fire Department</b>	Class 5Y
<b>Howell Station</b>	Class 5Y
<b>Chapple Station</b>	Class 5Y

### G. Overall HRV Summary of Events

Wildfires have the potential to cause damage at any place, at any time, throughout Echols County. They can spread quickly and residents may not have time to evacuate. The cost of the damage and potential loss of life may be higher if the event strikes populated areas as opposed to more sparsely populated or unpopulated areas. The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts from this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community’s overall vulnerability to this hazard.

## **SECTION V. THUNDERSTORMS/LIGHTNING**



### **A. Identification of Hazard**

The threat of thunderstorms and lighting has been chosen by the HMPUC as the fifth most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events.

Thunderstorms and wind have the potential to be destructive and may occur at any time. Thunderstorms may develop quickly in Echols County due to inclement weather conditions, a passing front, or hurricane/tropical storm events. Wind events may occur on their own, due to inclement weather, as a result of a passing front, or as part of thunderstorm or hurricane/tropical storm events.

Thunderstorms are one of the most common weather products of our atmosphere and should not be underestimated. They can cause serious injury, substantial property damage, and even death. Dangers associated with thunderstorms include lightning, hail, heavy rain, flooding, and strong winds. Wind speeds in a thunderstorm can exceed 100 mph and can be as damaging as a tornado. Lightning associated with these events may be one of the leading causes of wildfire in Echols County. Lightning can also occur even if it is not raining.

NOAA defines thunderstorms as rain showers during which thunder is heard. The following are some of the most common thunderstorm types:

(Source: <http://www.nssl.noaa.gov/education/svrwx101/thunderstorms/types/>)

- **Single-cell thunderstorms**, often called “popcorn” convection, are small, brief, weak storms that grow and die within an hour. They are typically driven by heat on a summer afternoon. Single-cell storms may produce brief heavy rain and lightning.
  - A **multi-cell storm** is a common thunderstorm in which new updrafts form along the leading edge of rain-cooled air (the gust front). Individual cells usually last 30 to 60 minutes, while the system may last many hours. Multicell storms may produce hail, strong winds, brief tornadoes, and/or flooding.
  - A **squall line** is a group of storms arranged in a line, often accompanied by “squalls” of high wind and heavy rain. Squall lines pass quickly and are less prone to produce tornadoes than supercells. They can be hundreds of miles long but are typically only 10 or 20 miles wide.
  - A **supercell** is a long-lived (greater than 1 hour) and highly organized storm feeding off an updraft (a rising current of air) that is tilted and rotating. This rotating updraft - as large as 10 miles in diameter and up to 50,000 feet tall - can be present as much as 20 to 60 minutes before a tornado forms. Scientists call this rotation a mesocyclone when it is detected by Doppler radar. The tornado is a very small extension of this larger rotation. Most large and violent tornadoes come from supercells.
  - **Wind** is categorized according to its strength and severity using the Beaufort Wind Scale, developed in 1805 by Sir Francis Beaufort of the U.K. Royal Navy. The Beaufort Wind Scale is shown in the table below.
- (Source: <http://www.spc.noaa.gov/faq/tornado/beaufort.html>)

## Beaufort Wind Scale

Force	Wind (Knots)	Wind (Mph)	World Meteorological Organization (WMO) Classification	Appearance of Wind Effects	
				On the Water	On Land
0	Less than 1	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction; still wind vanes
2	4-6	4-7	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	8-12	Gentle Breeze	Large wavelets and crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	13-18	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	19-24	Fresh Breeze	Moderate waves 4-8 ft taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	25-31	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	32-38	Near Gale	Sea heaps up, waves 13-19 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	39-46	Gale	Moderately high (18-25 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Twigs breaking off trees, generally impedes progress
9	41-47	47-54	Strong Gale	High waves (23-32 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	55-63	Storm	Very high waves (29-41 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	64-72	Violent Storm	Exceptionally high (37-52 ft) waves, foam patches cover sea, visibility more reduced	Very rarely experienced; accompanied by widespread damage.
12	64+	73+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	Devastation.

**All of Echols County is equally vulnerable to the effects of lightning.** Most thunderstorm and wind events in Echols County are relatively minimal, typically lasting about 30 minutes. However, there is also the possibility of longer-duration thunderstorms and wind events associated with hurricane/tropical storm events or passing fronts. Thunderstorms and wind events can occur at any time, but are most likely to occur in the afternoon and evening hours in the spring and summer.

Lightning is a giant spark of electricity in the atmosphere or between the atmosphere and the ground. In the initial stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground; however, when the differences in charges becomes too great, this insulating capacity of the air breaks down and there is a rapid discharge of electricity that we know as lightning. Lightning most often strikes during thunderstorms, but can strike many miles from the center of the storm, or can even strike in areas not covered by a storm (this phenomenon is known as a “bolt from the blue”).

According to NWS ([Lightning Safety Tips and Resources](#)), lightning strikes the United States about 25 million times a year. Although most lightning occurs in the summer, people can be struck at any time of year. Lightning kills an average of 47 people in the United States each year, and hundreds more are severely injured.

Lightning can strike in any place at any time but, contrary to popular myth, is not attracted to metal. Tall, isolated structures with a pointy shape are most likely to be struck by lightning. When thunder and lightning are present,

the best course of action is to seek shelter inside a robust building. Sheltering under a tree increases the risk of getting struck by lightning and is more dangerous than being out in the open. Most cars protect their occupants from lightning because they have metal roofs and sides; contrary to popular myth, it is not the car’s rubber tires that protect the occupants. When sheltering inside a building, one should avoid metal objects (metal doors, plumbing, electronics, etc.). (Source: [5 striking facts versus myths about lightning you should know | National Oceanic and Atmospheric Administration](#))

# Lightning

## Do's and Don'ts

### Do

Go Inside When You Hear Thunder or See Lightning!

Find a Sturdy House, Building, Car With A Hard-Top Roof

Stay Indoors For at Least 30 Minutes After You Last Hear Thunder



[weather.gov/lightning](https://weather.gov/lightning)

### Don't

Retreat to Dugouts, Sheds, Pavilions, Picnic Shelters or Other Small Structures

Use or Touch Electronics, Outlets, or Corded Phones

Go Under or Near Tall Trees, Swim or Be Near Water, Be Near Metal Objects or Windows

**B. Profile of Events, Frequency of Occurrences, Probability**

According to the NOAA Storm Events Database (see Appendix F), 66 reports of Thunderstorm/Wind events occurred in Echols County between 01/01/1950 and 12/31/2024. The Historic Recurrence

Interval is 1.12 years. This is a 89.19% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 1.8, the past 20-year frequency is 1.9, and the past 50-year frequency is 1.32 (see the Hazard Frequency Table in Appendix D).

Recently, thunderstorm events caused trees to be blown down across roads on May 31, 2016 and again on August 14, 2016. During another event, on July 1, 2015, the law enforcement complex in Statenville was damaged due to wind, and several trees were also blown down.

Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

C. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Echols County is equally vulnerable to this hazard.

An estimated 100% of the Residential property (1,726 of 1,726) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (20 of 20) in the community may be affected, with a total value of \$13,596,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor’s Office.

Damage to crops is not taken into account in any of these figures. According to the Center for Agribusiness & Economic Development’s 2022 Georgia Farm Gate Value Report (<https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2022%20Farm%20Gate%20Value%20Report.pdf>) , the total farm gate value of agricultural production in Echols County is \$198,242,782.

According to the inventory database reports and maps, all of the 25 Critical Facilities and Infrastructure for Echols County could be affected by this hazard. All 25 Critical Facilities are in areas with a wind hazard score of 2. The total value of these Critical Facilities is \$17,829,730.

D. Climate Change and Thunderstorms/Lightning

Recent research has brought to the forefront a pressing environmental issue: the significant increase in the prevalence of damaging thunderstorms and straight-line winds in the central United States brought on by climate change.

Source: <https://www.earth.com/news/thunderstorms-are-becoming-more-intense-due-to-climate-change/>

Rising global temperatures due to climate change means warmer air, which allows it to hold more moisture, roughly 7% more moisture per 1 degree Celsius of warming. This boosts the chance of thunderstorms, leading to more violent storms and more lightning strikes. And the intense downpours will lead to localized flash flooding.

Source: <https://www.rmets.org/metmatters/how-does-climate-change-affect-thunderstorms>

For every 1 degree Celsius of global warming, lightning strikes will increase by about 12%, new research shows, but scientists don’t yet know where increases will occur.

Lightning strikes are predicted to occur far more frequently due to climate change. New research from the University of California found that warming conditions would result in 50% more lightning strikes by the end of the century.

“For every two lightning strikes you had at the beginning of the century, we will have three at the end of the century,” said David Romps, a researcher at the University of California, Berkeley.

Source: <https://romps.berkeley.edu/papers/pubdata/2014/lightning/guardian.pdf>

E. Land Use and Development Trends

The County has seen a slight decrease in population over the last few years. Echols County does not have zoning regulations. The County has mandatory building and fire codes which are enforced by a building inspector. No other land use or development trends that relate to this hazard have been identified at this time.

F. Multi-Jurisdiction Differences

Thunderstorms and lightning have the potential to cause damage at any place, at any time, throughout Echols County. Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. Lightning and thunderstorm events may happen at any place at any time, but the impact may be more severe in places with higher population density due to more people being in danger, and other impacts associated with higher population density. No other multi-jurisdictional differences have been identified at this time.

G. Overall HRV Summary of Events

Where lightning strikes cannot be predicted and residents may not have time to seek shelter. The cost of the damage and potential loss of life may be higher if the event strikers populated areas as opposed to more sparsely populated or unpopulated areas.

THE HMPUS has developed a comprehensive range of Mitigation Goals, Objectives, and Actions Steps to lessen the impacts from this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community’s overall vulnerability to this hazard.

## **SECTION VI: EXTREME HEAT**



### **A. Identification of Hazard**

The threat of extreme heat has been chosen by the HMPUC as the sixth most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events.

The major hazard presented by heat waves is not so much to infrastructure as to the population. Despite the comparatively warm climate of this region, there are many residents who are not adequately prepared to handle extreme heat events for example, those without air conditioning in their homes, or those on limited incomes who cannot afford high utility bills derived from air conditioning). The risk is particularly high for the elderly and the young. Extreme heat is a hazard that may result in loss of life or damage to property and the economy. Due to weather forecasting methods, most extreme heat events can be predicted with some level of accuracy ahead of time.

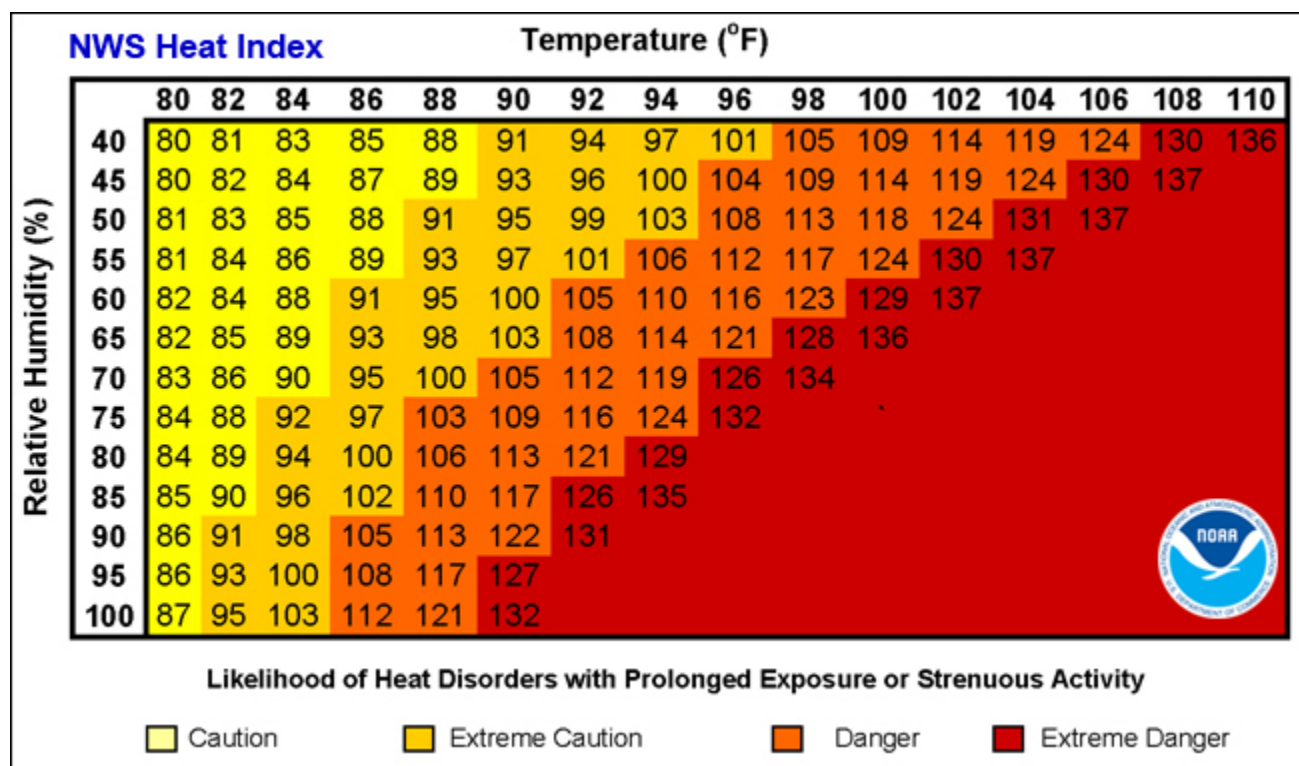
*“It’s not the heat, it’s the humidity!”* That a partly valid phrase you may have heard in the summer, but it’s actually both. The heat index, also known as the apparent temperature, is a measure that combines the effects of heat and humidity. When heat and humidity combine to reduce the amount of evaporation of sweat from the body, outdoor exercise becomes dangerous even for those in good shape (source: National Weather Service, <https://www.weather.gov/ama/heatindex>).

The table below shows the levels of danger associated with the heat index as calculated by the National Weather Service (source: <https://www.weather.gov/ama/heatindex>).

#### Heat Index category and effects

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

The Heat Index chart below shows Heat Index Values for various temperatures and humidity levels. As an example, if the air temperature is 96° F and the relative humidity is 65%, the heat index—i.e., how hot it feels—is 121° F.



For the National Weather Service's Tallahassee district (which includes Echols County), an **Excessive Heat Watch** is issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours. A Watch is used

when the risk of a heat wave has increased but its occurrence and timing is still uncertain. A Watch provides enough lead time so that those who need to prepare can do so, such as county officials who have excessive heat event mitigation plans. The National Weather Service office in Tallahassee will issue this product if the heat index might reach or exceed 113°F.

A **Heat Advisory** is issued when an excessive heat event is expected in the next 24 hours. This products are issued when an excessive heat event is occurring, is imminent, or has a very high probability of occurring. An advisory is for less serious conditions that cause significant discomfort or inconvenience and, if caution is not taken, could lead to a threat to life. The National Weather Service will issue this product if the heat index might reach 108-112°F.

An **Excessive Heat Warning** is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for this Warning is when the maximum heat index temperature is expected to be 105° or higher for at least 2 days and night time air temperatures will not drop below 75°; however, these criteria vary across the country, especially for areas not used to extreme heat conditions. If you don't take precautions immediately when conditions are extreme, you may become seriously ill or even die. (Source: [Heat Watch vs. Warning](#))

**All of Echols County is equally vulnerable to the effects of extreme heat.**

**B. Profile of Events, Frequency of Occurrences, Probability**

According to National Weather Service data (see Appendix F), there are 58 reports of extreme heat events occurring in Echols County between 01/01/2006 and 12/31/2024. The Historic Recurrence Interval is 1.28 years. This is a 78.38% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 3.4, the past 20-year frequency is 0.85, and the past 50-year frequency is 0.16 (see the Hazard Frequency Table in Appendix D). These events were all Heat Advisories, except for 3 Excessive Heat Warnings in 2007 and 2 Excessive Heat Warnings in 2012. The all-time hottest day on record was August 2, 1999, when temperatures reached 106 degrees Fahrenheit.

An estimated 11 Extreme Heat events have occurred since the last Hazard Mitigation Plan was adopted. These were all Heat Advisories.

Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

**C. Inventory of Assets Exposed and Potential Loss**

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Echols County is equally vulnerable to this hazard.

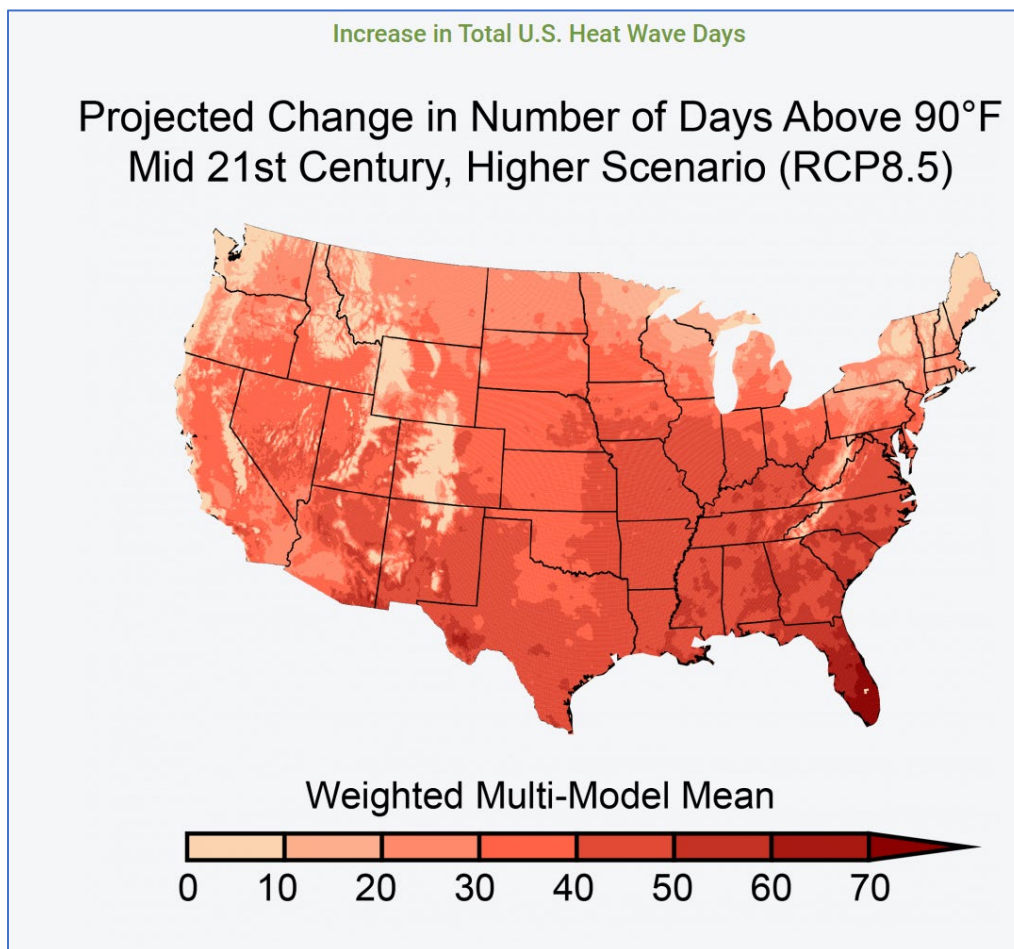
An estimated 100% of the Residential property (1,726 of 1,726) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (20 of 20) in the community may be affected, with a total value of \$13,596,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor’s Office.

Damage to crops is not taken into account in any of these figures. According to the Center for Agribusiness & Economic Development’s 2022 Georgia Farm Gate Value Report (<https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2022%20Farm%20Gate%20Value%20Report.pdf>), the total farm gate value of agricultural production in Echols County is \$198,242,782.

According to the inventory database reports and maps, all of the 25 Critical Facilities and Infrastructure for Echols County could be affected by this hazard. The total value of these Critical Facilities is \$17,829,730.

**D. Climate Change and Extreme Heat in Echols County**

Average temperatures in Georgia, which have climbed nearly 2 degrees Fahrenheit since the 1960’s, are expected to exceed historical records by about 12 degrees Fahrenheit by the end of the century if high carbon pollution levels continue globally. NRDC’s analysis shows that in Georgia, 41 counties already see an average of more than nine extreme summer heat days per year, with 26 of those counties averaging more than two weeks’ worth of extremely hot summer days. Climate change is fueling hotter summer days and increasing the intensity and frequency of heat waves, raising the risk of heatstroke and other heat-related illnesses. Georgia had a particularly deadly year in 2010, when 25 heat-related deaths were reported. Source: <https://www.nrdc.org/resources/climate-change-and-health-extreme-heat#/map/detail/GA>



Source: <https://www.c2es.org/content/heat-waves-and-climate-change/>

#### E. Land Use and Development Trends

The County has seen a slight decrease in population over the last few years. Echols County does not have zoning regulations. The County has mandatory building and fire codes which are enforced by a building inspector. The County participates in joint comprehensive planning and in the required updates of the Service Delivery Strategy.

No other land use or development trends that relate to this hazard have been identified at this time.

#### F. Multi-Jurisdictional Differences

Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. Extreme heat may happen at any place at any time, but the impact may be more severe in places with higher population density due to more people being in danger. Power failures exacerbate extreme heat events because of the ensuing lack of air conditioning. No other multi-jurisdictional differences have been identified at this time.

### G. Overall HRV Summary of Events and Their Impact

Extreme heat has the potential to harm people throughout Echols County, especially during the summer months. The potential for damage to health and loss of life will be higher for people without air conditioning, and would be exacerbated by a power failure. Extreme heat is a far greater threat to public health than to buildings and infrastructure.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts from this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

## **SECTION VII. DROUGHT**



The Alapaha River at Statenville during a drought

### **A. Identification of Hazard**

The threat of drought has been chosen by the HMPUC as the seventh most likely hazard to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center and U.S. Drought Monitor (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events.

Although drought is associated with the summer months in many other parts of the United States, our region has a humid subtropical climate with more precipitation, on average, in the summer than in the winter. Drought can occur at any time, and its effects can last throughout the year and continue from year to year. These effects may include agricultural losses, increased wildfire and fire risk, lack of water for citizens and firefighting, increased flooding risk (because dry land can be less absorbent of rainfall), and other effects that influence other hazards and the safety of the community.

Crops (including trees) are usually most adversely affected by drought events, along with community residents whose water supplies are restricted or cut off (especially those using individual wells). Residents of unincorporated Echols County have wells, which may go dry during drought periods, thus leaving those residents without water for extended periods of time.

The U.S. Drought Monitor (<http://droughtmonitor.unl.edu>), established in 1999, is a weekly map of drought conditions that is produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln. The U.S. Drought Monitor website is hosted and maintained by the NDMC. The Drought Monitor summary map identifies general drought areas, labelling droughts by intensity, with D0 being the least intense and D4 being the most intense. Following is a legend describing the drought intensity numbering system.

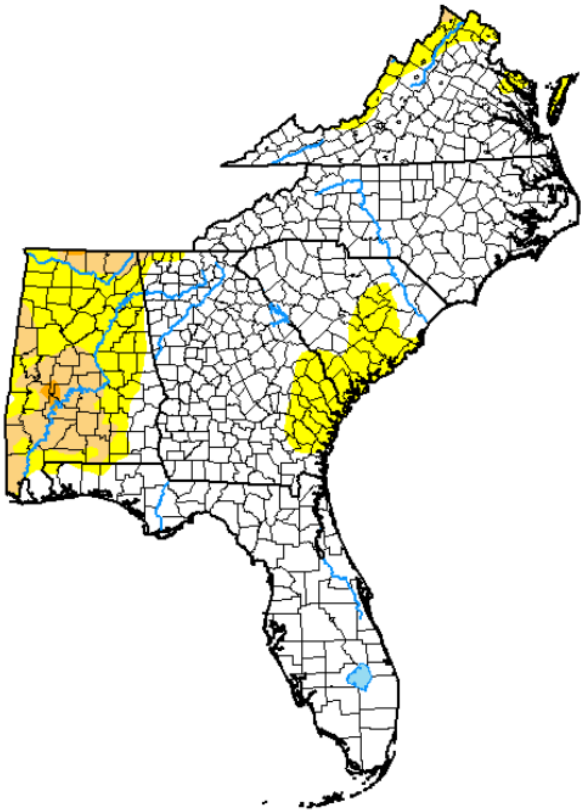
Category	None	D0	D1	D2	D3	D4
Description	Normal or wet conditions	Abnormally Dry	Moderate Drought	Severe Drought	Extreme Drought	Exceptional Drought

(Source: <https://droughtmonitor.unl.edu/About/WhatistheUSDM.aspx>)

The following graphic shows Georgia, with its counties including Echols County, as part of a southeast region for drought monitoring purposes. The chart included gives the current drought conditions and goes back one year. Echols County is currently shown as having no drought conditions. However, as a whole, parts of the southeast region have experienced drought conditions over the last year. The portions that experienced drought comprised approximately 30% of the area. Of that 30% that experienced drought, the majority experienced only abnormally dry conditions and a smaller percentage, 16.96% of the area experienced moderate drought, while a fraction of the area, less than one percent, experienced severe drought.

## U.S. Drought Monitor Southeast

**October 15, 2024**  
(Released Thursday, Oct. 17, 2024)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	75.33	24.67	6.70	0.29	0.00	0.00
<b>Last Week</b> 10-08-2024	75.33	24.67	5.35	0.05	0.00	0.00
<b>3 Months Ago</b> 07-16-2024	18.04	81.96	45.98	18.20	3.08	0.00
<b>Start of Calendar Year</b> 01-02-2024	46.90	53.10	29.74	12.32	2.53	0.00
<b>Start of Water Year</b> 10-01-2024	80.09	19.91	5.69	0.03	0.00	0.00
<b>One Year Ago</b> 10-17-2023	43.89	56.11	30.66	12.28	1.28	0.00

### Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

### Author:

Brian Fuchs  
National Drought Mitigation Center



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

Source: <https://sercc.com/drought-maps/>

Agriculture is one of the most well-known and monitored resources that is affected by drought. Row crops that are monitored by the U.S. Drought Monitor include: barley, corn, cotton, durum, peanuts, rice, sorghum, soybean, spring wheat, sugar beet, sugarcane, sunflowers and winter wheat production.

Specialty crops monitored by the U.S. Drought Monitor include: vegetable crop resources, fruit crop resources, and cranberry crop resources. Livestock & Forage are also monitored as well and include the following: alfalfa hay, cattle inventory, hay inventory, hog inventory, milk cow inventory, and sheep inventory. Grassland productivity is also monitored for drought purposes.

Drought intensity numbering system chart and description of impacts:

Category	Description	Possible Impacts
<b>D0</b>	Abnormally Dry	<p>Going into drought:</p> <ul style="list-style-type: none"> <li>▪ short-term dryness slowing planting, growth of crops or pastures</li> </ul> <p>Coming out of drought:</p> <ul style="list-style-type: none"> <li>▪ some lingering water deficits</li> <li>▪ pastures or crops not fully recovered</li> </ul>
<b>D1</b>	Moderate Drought	<ul style="list-style-type: none"> <li>▪ Some damage to crops, pastures</li> <li>▪ Streams, reservoirs, or wells low, some water shortages developing or imminent</li> <li>▪ Voluntary water-use restrictions requested</li> </ul>
<b>D2</b>	Severe Drought	<ul style="list-style-type: none"> <li>▪ Crop or pasture losses likely</li> <li>▪ Water shortages common</li> <li>▪ Water restrictions imposed</li> </ul>
<b>D3</b>	Extreme Drought	<ul style="list-style-type: none"> <li>▪ Major crop/pasture losses</li> <li>▪ Widespread water shortages or restrictions</li> </ul>
<b>D4</b>	Exceptional Drought	<ul style="list-style-type: none"> <li>▪ Exceptional and widespread crop/pasture losses</li> <li>▪ Shortages of water in reservoirs, streams, and wells creating water emergencies</li> </ul>

[AA1] **Echols County is all equally vulnerable to the effects of drought.**

#### B. Profile of Events, Frequency of Occurrences, Probability

According to U.S. Drought Monitor data (see Appendix F), there are 363 reports of drought events (D1, D2, D3, or D4) occurring in Echols County between 01/01/2000 and 12/31/2024. The Historic Recurrence Interval is 0.07 years. This is a 1,512.5% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 36, the past 20-year frequency is 18.15. (see the Hazard Frequency Table in Appendix D). The most severe drought on record was in April and May 2012, with D4 conditions persisting for five consecutive weeks.

Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

C. Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Echols County is equally vulnerable to this hazard.

An estimated 100% of the Residential property (1,726 of 1,726) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (20 of 20) in the community may be affected, with a total value of \$13,596,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor’s Office.

Damage to crops is not taken into account in any of these figures. According to the Center for Agribusiness & Economic Development’s 2022 Georgia Farm Gate Value Report (<https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2022%20Farm%20Gate%20Value%20Report.pdf>), the total farm gate value of agricultural production in Echols County is \$198,242,782.

According to the inventory database reports and maps, all of the 25 Critical Facilities and Infrastructure for Echols County could be affected by this hazard. The total value of these Critical Facilities is \$17,829,730.

D. Climate Change and Drought in Echols County

Drought is expected to increase in Georgia and the rest of the Southeast due to a combination of higher temperatures, as well as increased population, industry, and urban land use demands, which will further affect water resource recharge and amplify competing water needs in the region.

Source: <https://www.drought.gov/states/georgia>

Climate change increases the odds of worsening drought in many part of the United States and the world. Regions such as the U.S. Southwest, where droughts are expected to get more frequent, intense, and longer lasting, are at particular risk.

Climate change is contributing to droughts with warmer temperatures that enhance evaporation, which reduces surface water and dries out soils and vegetation. This makes periods with low precipitation drier than they would be in cooler conditions.

Some climate models find that warming increases precipitation variability, meaning there will be more periods of both extreme precipitation and drought. This creates the need for expanded water storage during drought years and increased risk of flooding and dam failure during periods of extreme precipitation. Source: <https://www.c2es.org/content/drought-and-climate-change/>

#### E. Land Use and Development Trends

The County has seen a slight decrease in population over the last few years. The County has mandatory building and fire codes which are enforced by a building inspector. The County participates in joint comprehensive planning and in the required updates of the Service Delivery Strategy. No other land use or development trends that relate to this hazard have been identified at this time.

#### F. Multi-Jurisdictional Differences

Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. Residents of Echols County have wells, which may go dry during drought periods, thus leaving those residents without water for extended periods of time. There is also a privately owned water utilities company in Echols County and is available to residents. No other multi-jurisdictional differences have been identified at this time.

#### G. Overall HRV Summary of Events and Their Impact

Drought has the potential to harm people and the economy throughout Echols County, potentially at any time of the year, and most significantly in unincorporated areas not served by municipal water systems. Drought may increase the likelihood of wildfires and flooding. Water shortages can impede firefighting efforts at all levels.

The HMPUC has developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impacts from this hazard. These are contained in Chapter 4.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard.

## Chapter 3: Local Technological Hazard, Risk, and Vulnerability (HRV) Summary

### **SECTION I. HAZARDOUS MATERIALS RELEASE**



#### **A. Identification of Hazard**

Hazardous materials are substances or materials that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce. When these materials are released, they become dangerous. A release may occur by spilling, leaking, emitting toxic vapors, or any other process that enables the material to escape its container, enter the environment, and create a potential hazard.

The effects of hazardous material releases can occur very rapidly with little or no advance warning, in the form of explosions, fires, and immediate health problems resulting from exposure.

#### **B. Profile of Events, Frequency of Occurrences, Probability**

Hazardous material spills are common in areas where hazardous materials are fabricated, processed and stored. Transportation of hazardous materials by truck is the cause of the greatest number of hazardous materials events. Many products containing hazardous chemicals are routinely used and stored in homes. These products containing hazardous chemicals are routinely used and stored in homes. These products are also shipped daily on the nation's highways, railroads, waterways and in pipelines. In most cases, disasters involving hazardous material are confined to a localized area, whether an accidental release occurs at a fixed facility or in association with a transportation incident. The United States Environmental Protection Agency categorizes wastes according to four characteristics: Ignitability, corrosivity, reactivity, and toxicity. Furthermore, the EPA categorizes hazardous wastes according to the following hazard codes (source: [Defining Hazardous Waste: Listed, Characteristic and Mixed Radiological Wastes | US EPA](#))

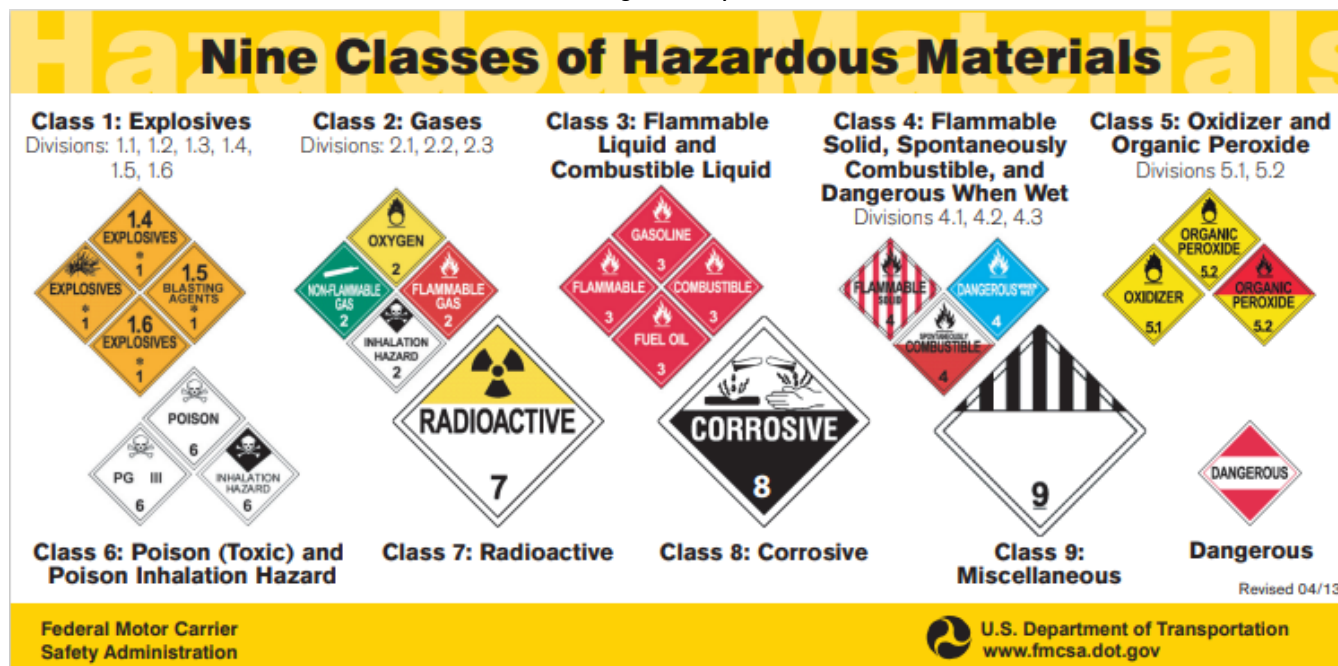
- (T) - Toxic Waste
- (H) - Acute Hazardous Waste
- (I) - Ignitable Waste
- (C) - Corrosive Waste
- (R) - Reactive Waste
- (E) - Toxicity Characteristic Waste

The extent of severity of a hazardous materials release within the community is not predictable due to the varied nature of hazardous materials and the widespread area covered by the transportation network upon which such materials may be transported.

According to the USDOT Pipeline and Hazardous Materials Safety Administration’s Office of Hazardous Materials Safety database (see Appendix F), there is 1 report of Hazardous Materials Release events occurring in Echols County between 01/01/1978 and 12/31/2024. This event was on Nov. 2, 1998 and involved a 15-gallon fuel oil spill. The Historic Recurrence Interval is 74.00 years. This is a 1.35% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0, the past 20-year frequency is 0, and the past 50-year frequency is 0.02 (see the Hazard Frequency Table in Appendix D).

No hazardous materials release events have been recorded since the previous Hazard Mitigation Plan was completed.

Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.



### C./D.: Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Echols County is equally vulnerable to this hazard.

An estimated 100% of the Residential property (1,726 of 1,726) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (20 of 20) in the community may be affected, with a total value of \$13,596,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor's Office.

Damage to crops is not taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2022 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Echols County is \$198,242,782.

According to the inventory database reports and maps, all of the 25 Critical Facilities and Infrastructure for Echols County could be affected by this hazard. All 25 Critical Facilities are in areas with a wind hazard score of 2. The total value of these Critical Facilities is \$17,829,730.

### E. Land Use and Development Trends

Residential land use in Echols County is widely dispersed, where some relatively higher residential density exists.

Overall, the County has seen a slight decrease in population over the last few years. Echols County has no zoning ordinance. The County has mandatory building and fire codes which are enforced by a building inspector. The County participates in joint comprehensive planning and in the required updates of the Service Delivery Strategy.

No other land use or development trends that relate to this hazard have been identified at this time.

**F. Multi-Jurisdictional Differences**

Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. The facilities most vulnerable to a hazardous materials release are those located within a one-mile buffer of the major highways and railways in the community.

State highways carrying truck traffic pass through all the jurisdictions, but the only major four-lane highway is State Route 94 (SR 94), passing southeast entering the County and intersects with SR 135, crossing over the Alapaha River. In Statenville, an unincorporated municipality, SR 135 meets US 129/SR11. A Norfolk Southern rail line passes through the northern part of the County.

**G. Overall HRV Summary**

A significant portion of the community could be vulnerable to a hazardous materials release. Preparation for such an event requires specific training for first responders and coordination among agencies to ensure a swift response and containment of hazardous materials in order to minimize the potential loss of life and property. Therefore, a key priority should be to train responders to fulfill their responsibilities and conduct periodic tests to be sure the response plan is realistic and responders are ready to carry it out.

Human error is the probable cause of most transportation incidents and associated consequences involving the accidental release of hazardous materials. Varying quantities of hazardous materials are manufactured, used, or stored in Echols County. Due to the county’s location on or near several major transportation routes, the potential exists for a catastrophic hazardous material release event due to a transportation accident.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would increase or decrease its overall vulnerability to this hazard.

## **SECTION II. PUBLIC HEALTH EMERGENCY**



### **A. Identification of Hazard**

The HMPUC has chosen the threat of a public health emergency as the second most likely human-caused hazard to occur and cause damage in the community.

The community is vulnerable to public health emergencies that may occur naturally on their own, including but not limited to:

- ❖ Communicable disease outbreaks
- ❖ Pandemic influenza
- ❖ Mosquito-borne illness
- ❖ Food-borne illness

Diseases that lead to a public health emergency may have a rapid onset or a slow onset. They may be highly localized or may be widespread. Depending on the nature of the public health emergency, treatment may or may not be immediately available.

Some examples of recent public health emergencies include:

- ❖ **The COVID-19 pandemic, or the Coronavirus Disease 2019** – caused by the SARS-CoV-2 virus, it can be very contagious and can spread quickly. As of June 1, 2024, nearly 1.2 million people have died of COVID-19 in the United States. (Source: <https://www.cdc.gov/covid/index.html>)
- ❖ **The Opioid Crisis**—Drug overdoses have dramatically increase over the last two decades and is an evolving public health crisis. Among the 2022 overdose deaths, about 76% involved any opioid

(prescription or illicit), 68% involved a synthetic opioid other than methadone — such as fentanyl, fentanyl analogs, and tramadol), 26% involved cocaine, and 32% involved a psychostimulant such as methamphetamine. (Source: <https://www.cdc.gov/overdose-prevention/about/index.html>)

## B. Profile of Events, Frequency of Occurrences, Probability

Beyond the COVID-19 pandemic, there have not been any other disease outbreak events in Echols County in recent history. However, the entire community is equally vulnerable to this hazard and an outbreak could happen at any time.

## C./D.: Inventory of Assets Exposed and Potential Loss

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Echols County is equally vulnerable to this hazard.

An estimated 100% of the Residential property (1,726 of 1,726) in Echols County could be affected by this hazard, with a total value of \$170,304,000. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (20 of 20) in the community may be affected, with a total value of \$13,596,000. The values are based on the most recent available tax roll data for Echols County, provided by the Echols County Tax Assessor's Office.

Damage to crops is not taken into account in any of these figures. According to the Center for Agribusiness & Economic Development's 2022 Georgia Farm Gate Value Report ([http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015\\_DEC16.pdf](http://caes2.caes.uga.edu/center/caed/documents/GAFGVR2015_DEC16.pdf)), the total farm gate value of agricultural production in Echols County is \$198,242,782.

According to the inventory database reports and maps, all of the 25 Critical Facilities and Infrastructure for Echols County could be affected by this hazard. The total value of these Critical Facilities is \$17,829,730

## E. Land Use and Development Trends

The County has seen a slight decrease in population over the last few years.

Echols County does not have zoning regulations. The County has mandatory building and fire codes which are enforced by a building inspector. The County participates in joint comprehensive planning and in the required updates of the Service Delivery Strategy.

No other land use or development trends that relate to this hazard have been identified at this time.

## F. Multi-Jurisdictional Differences

Echols County has no incorporated cities, and therefore there is only one jurisdiction in this community. The impact of a disease event will be more severe in places with higher population density due to more people being exposed and higher potential for person-to-person transmission. No other multi-jurisdictional differences have been identified at this time.

## Chapter 4: Local Natural Hazard Mitigation Goals and Objectives

### Summary of Changes:

Table 4.1 provides a brief description of each section in this chapter and a summary of the changes that have been made.

Chapter 4 Section	Updates to Section
I. Hurricanes/Tropical Storms	Updated Goals, Objectives, and Action Step Formatting, Numbering and Data Fields, Updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
II. Floods	Updated Goals, Objectives, and Action Step Formatting, Numbering and Data Fields, Updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
III. Tornadoes	Updated Goals, Objectives, and Action Step Formatting, Numbering and Data Fields, Updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
IV. Wildfires	Updated Goals, Objectives, and Action Step Formatting, Numbering and Data Fields, Updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
V. Thunderstorms/Lightning	Updated Goals, Objectives, and Action Step Formatting, Numbering and Data Fields, Updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
VI. Extreme Heat	Updated Goals, Objectives, and Action Step Formatting, Numbering and Data Fields, Updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
VII. Drought	Updated Goals, Objectives, and Action Step Formatting, Numbering and Data Fields, Updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)

Table 4.1: Overview of updates to Chapter 4: Local Natural Hazards, Mitigation Goals and Objectives

## **OVERALL COMMUNITY MITIGATION GOALS, POLICIES, AND VALUES NARRATIVE**

There is a high level of cooperation exhibited among agencies within the County when it comes to hazard mitigation and emergency planning efforts. All relevant departments in Echols County have designated representatives to participate in the emergency management process, whether it be during planning, response, or recovery phases. The local Emergency Management Agency hosts regular meetings to gather all of the relevant local, regional and state partners together to develop effective plans and strengthen relationships among all of the stakeholders. Working together, the community has been able to access resources available through several state and federal sources that have been instrumental in improving the technical capabilities of Echols County to more effectively mitigate hazards and provide more accurate warning and preparatory information to citizens. Local authorities are listed in the following table.

Function	Responsible Authority
<b>Planning</b>	Echols County Board of Commissioners Staff
<b>Historic Preservation</b>	Echols County Board of Commissioners Staff
<b>Building codes</b> <b>(Note: County has no zoning ordinance or land development regulations)</b>	Echols County Board of Commissioners Staff
<b>NFIP participation</b>	Echols County EMA
<b>EMAP participation</b>	Echols County EMA
<b>Emergency management</b>	Echols County EMA

Overall, community priorities have remained relatively unchanged. The hazards and risks associated with each have not changed, and many of the action steps identified during previous Hazard Mitigation Plans are still relevant and remain a priority in this plan as well.

Authority for the development of this Plan was given by the Echols County Commission as a result of their execution of the Grantee-Subgrantee Agreement for the Echols County Hazard Mitigation Grant Program (HMGP) Planning Project, through their participation in the planning project. The Echols County Emergency Management Agency is authorized to oversee emergency management within Echols County.

The County has many current policies and programs related to hazard mitigation, which are described in detail in the goals, objectives, and action steps contained in Chapter 4 of this Plan. All jurisdictions (within the boundaries of their budgets) have the ability to expand and improve their existing policies and programs as evidenced by the new and existing goals, objectives, and action steps included in this plan. The amount of resources available to the jurisdictions for expansion and improvement of existing programs will depend on factors such as the local government budgets and the availability of state and federal funding to support hazard mitigation activities.

This chapter contains a description of the comprehensive range of Mitigation Goals, Objectives, and Action Steps that were developed by the HMPUC to reduce damages and improve safety through Hazard Mitigation. These have been arranged by the natural hazards contained in Chapter 2. There is particular emphasis on emergency preparedness and infrastructure.

The HMPUC discussed and identified the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Chapter 4 of this Plan after identifying the hazards noted in Chapter 2 of this Plan. All areas of the community were taken into account in the development of the comprehensive range of Mitigation Goals, Objectives, and Action Steps. These were identified after weighing of many factors discovered during the planning process, including risk assessment, storm history, past damage, community resources, and other factors.

A list of the comprehensive range of Mitigation Goals, Objectives, and Action Steps was compiled from the input of the HMPUC, as well as from others within the community. Members of the HMPUC prioritized the identified comprehensive range of Mitigation Goals, Objectives, and Action Steps based on what was anticipated to be most beneficial to the community. The benefits of all action steps were determined to be greater than the costs involved.

Several criteria were established to assist the HMPUC members in the prioritization of these suggested Mitigation Goals, Objectives, and Action Steps. Criteria included perceived cost vs. benefit or cost-effectiveness, availability of potential funding sources, overall feasibility, measurable milestones, political support for the proposed actions, and the STAPLEE criteria.

Through this prioritization process, several projects emerged as having higher priority than others. Some of the projects involved expending considerable amounts of funds to initiate the required actions. The determination of the cost/benefit analysis (such as the FEMA B/CA model) of a project will be implemented at the time of project application or funding request. Other projects allowed the communities to pursue completion of the project using potential grant funding. Still, others required no significant financial commitment by the communities.

In Chapter 6, Sections I-III, there is a description of the planning process involved in selecting the comprehensive range of Mitigation Goals, Objectives, and Action Steps. The Action Steps are given a rating of High, Medium, or Low Priority by the HMPUC based on several factors (with a primary emphasis on prioritized cost versus benefit review) identified in Chapter 6, Section I.

Relevant comprehensive ranges of Mitigation Goals, Objectives, and Action Steps are listed below throughout the chapter. The Echols County EMA Director has been chosen by Echols County to oversee the projects. The Echols County EMA has been designated by Echols County to be the coordinating agency for the implementation and administration of these projects.

## **SECTION I. HURRICANES/TROPICAL STORMS**

### **A. Community Mitigation Goals**

As previously indicated in Chapter 2, hurricanes and tropical storms may cause substantial damage to life, property, and the economy in Echols County. They are usually accompanied by some advanced notice, giving the community time to prepare and/or evacuate. The HMPUC believes that, because these extreme weather events have the potential to cause great damage, injury, and loss of life, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

### **B. Identification and Analysis of Comprehensive Range of Mitigation Options**

#### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

#### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 2, Section I.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges to the retrofitting of historic buildings to make them more resilient to natural hazards.

#### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

#### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

### **C. Mitigation Strategy and Recommendations**

#### **Goal 1: Minimize damage caused by high winds of Hurricanes/Tropical Storms in Echols County.**

*Objective #1: Protect the life, health, and property of residents from high winds of Hurricanes/Tropical Storms.*

<b>Action Step 1: Educate the public on the risks of hurricanes through social media, brochures and other methods.</b>	
<b>Responsible Department</b>	<i>Echols County EMA, Echols County BOE</i>
<b>Anticipated Cost</b>	<i>Staff Time</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>High</i>
<b>Status</b>	<i>New Action Step- a continual need. Brochures have been distributed to the public and this needs to continue.</i>

<b>Action Step 2: Educate citizens on emergency preparedness.</b>	
<b>Responsible Department</b>	<i>Echols County EMA</i>
<b>Anticipated Cost</b>	<i>\$2,000</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>High</i>
<b>Status</b>	<i>Ongoing- performed continually due to the importance</i>

<b>Action Step 3: Encourage various training organizations to teach Citizen Disaster Courses frequently and put a link to the American Red Cross and other important government sites on the county website.</b>	
<b>Responsible Department</b>	<i>Echols County EMA</i>
<b>Anticipated Cost</b>	<i>Staff Time</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>Medium</i>
<b>Status</b>	<i>Ongoing- performed continually due to the importance</i>

<b>Action Step 4: Provide safe emergency shelter locations for Echols County citizens impacted by disasters</b>	
<b>Responsible Department</b>	<i>Echols County EMA</i>
<b>Anticipated Cost</b>	<i>Staff Time</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds,</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>High</i>
<b>Status</b>	<i>New Action Step—Public information will be forthcoming via social media and other emergency communication systems during the disaster.</i>

**Action Step 5: Increase public awareness of Code Red through social media, holding town hall meetings and providing bulletins to local churches and schools.**

<b>Responsible Department</b>	<i>Echols County EMA</i>
<b>Anticipated Cost</b>	<i>Staff time</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>High</i>
<b>Status</b>	<i>Ongoing – Public awareness has been conducted through social media, websites, and brochures in the EMA office. Remains an ongoing need.</i>

**Action Step 6: Trim tree lines around roads, homes, utilities and businesses.**

<b>Responsible Department</b>	<i>Echols County Public Works</i>
<b>Anticipated Cost</b>	<i>\$100,000</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds, GA Power, Colquitt EMC, Slash Pine EMC</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>High</i>
<b>Status</b>	<i>Ongoing – This is done approximately every month on an ongoing basis.</i>

**Action Step 7: Improve communication systems between emergency personnel.**

<b>Responsible Department</b>	<i>Echols County EMA</i>
<b>Anticipated Cost</b>	<i>\$6,500</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>Medium</i>
<b>Status</b>	<i>New Action Item</i>

Objective 2: Minimize damages from high winds to institutional/public buildings in Echols County.

**Action Step 1: Purchase and install mobile and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, critical facilities, stop lights and wherever else they are needed.**

<b>Responsible Department</b>	<i>Echols County EMA</i>
<b>Anticipated Cost</b>	<i>\$100,000 per generator</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds, HMPG, EMPG, FMG</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>High</i>
<b>Status</b>	<i>Ongoing – Facilities still lack generators and none have been purchased since the last HMP was updated.</i>

**Action Step 2: Seek funding to retrofit public buildings to reinforce windows, roofs and doors.**

<b>Responsible Department</b>	Echols County EMA, Echols County BOE
<b>Anticipated Cost</b>	\$500,000.00
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMPG, EMPG, FMG
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Action Step

**Action Step 3: Initiate an inspection program at critical facilities to identify construction weaknesses subject to storm damage.**

<b>Responsible Department</b>	Echols County Building Inspector, Dept Heads, Echols County Board of Commissioners,
<b>Anticipated Cost</b>	\$10,000.00
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMPG, EMPG, FMG
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Action Step

#### D. Special Multi-Jurisdictional Strategy and Considerations:

There is only one jurisdiction in Echols County (Echols County itself).

#### E. Local Public Information and Awareness Strategy:

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By

utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

## F. Changes from the Previous Plan

### Goal 1, Objective 1

Action Step	Changes
<b>Action Step #1: Educate homeowners and builders on individual safe rooms.</b>	Deleted-Unable to implement
<b>Action Step #1: Educate the public on the risks of hurricanes through social media, brochures and other methods.</b>	New Action Step
<b>Action Step #2: Distribute programs on personal emergency preparedness, i.e., emergency survival kits.</b>	Reword/Update - Ongoing
<b>Action Step #3: Encourage the American Red Cross to teach Citizen Disaster Courses on a frequent basis.</b>	Reword/Update - Ongoing
<b>Action Step #4: Encourage businesses to develop emergency plans.</b>	Deleted – Unable to implement
<b>Action Step #4: Provide safe emergency shelter locations for Echols County citizens impacted by disasters</b>	New Action Step
<b>Action Step #5: Increase public awareness of Code Red through social media, holding town hall meetings, and providing bulletins to local churches and schools.</b>	Reword/Update - Ongoing
<b>Action Step #6: Trim tree lines around roads, homes, utilities, and businesses.</b>	Reword/Update– Ongoing
<b>Action Step #7: Improve communication systems between emergency personnel.</b>	New Action Step

### Goal 1, Objective 2

Action Step	Changes
<b>Action Step #1: Install auxiliary generators for all designated evacuation and emergency shelters and community water systems.</b>	Ongoing; renumbered in plan update
<b>Action Step #2: Seek funding to retrofit public buildings to reinforce windows, roofs and doors.</b>	New Action Step
<b>Action Step 3: Initiate an inspection program at critical facilities to identify construction weaknesses subject to storm damage.</b>	New Action Step

## **SECTION II. FLOODS**

### **A. Community Mitigation Goals**

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Echols County. Floods are unpredictable and can happen at any place and at any time. Because of the damage and loss of life it may cause, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

The major flooding sources in Echols County are the Alapaha River, Alapahoochee River, Grand Bay Creek running south through the county, and Suwanoochee Creek, which runs southwest thru Echols County. There is also Mud Swamp, which runs into Grand Bay Creek from a westerly direction. The western half of Echols County is located in the Alapaha River sub-basin of the Suwannee River basin. The eastern half of the county, from well east of Statenville to just west of Fargo, is located in the Upper Suwannee River sub-basin of the same Suwannee River basin.

Due to these facts, the Echols County HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps listed below should be implemented to reduce the threat of flood damage in Echols County.

### **B. Identification and Analysis of the Comprehensive Range of Mitigation Options**

#### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

#### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 2, Section II.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them more resilient to natural hazards.

#### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard

#### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

### **C. Mitigation Strategy and Recommendations:**

***Goal 1: Minimize flood damage in Echols County.***

***Objective 1: Minimize losses to existing and future structures, especially community critical facilities,***

*due to flooding caused by excessive rainfall.*

**Action Step 1: Review data on storm events to determine where repetitive Flooding occurs due to inadequate drainage infrastructure and identify & pursue grant funds to upgrade deficient drainage systems.**

<b>Responsible Department</b>	<i>Echols County EMA, Echols County Commission</i>
<b>Anticipated Cost</b>	<i>\$500,000 each project</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds, HMPG, EMPG, FMG, GA DCA CDBG</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>High</i>
<b>Status</b>	<i>Ongoing – Extended due to importance. Data have been reviewed but further review and system upgrades are needed.</i>

**Action Step 2 (formally #4): Continue membership in the NFIP by adopting updated ordinances and FIRM maps as updates are available.**

<b>Responsible Department</b>	<i>Echols County EMA</i>
<b>Anticipated Cost</b>	<i>Staff Time</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds/HMPG, EMPG, FMG</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>High</i>
<b>Status</b>	<i>Ongoing – partly accomplished (FIRM maps updated) but it is anticipated that further updates will be necessary.</i>

**Action Step 3 (formally #5) Encourage homeowners to review benefits offered through the National Flood Insurance Program.**

<b>Responsible Department</b>	<i>Echols County EMA</i>
<b>Anticipated Cost</b>	<i>Staff Time</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds/HMPG, EMPG, FMG</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>Low</i>
<b>Status</b>	<i>Ongoing – Extended due to importance. Homeowners have been informed of the benefits through brochures and social media. Further encouragement is needed in order to reach more homeowners.</i>

**Objective 2: Protect and preserve flood-prone areas for green space use, such as community parks and recreational areas.**

<b>Action Step 1: Monitor comprehensive land use plans to ensure the mapping of lands to be permanently protected.</b>	
<b>Responsible Department</b>	<i>Echols County</i>
<b>Anticipated Cost</b>	<i>Staff Time</i>
<b>Existing &amp; Potential Funding Sources</b>	<i>General Funds</i>
<b>Jurisdiction</b>	<i>Echols County</i>
<b>Timeframe</b>	<i>2025-2029</i>
<b>Priority</b>	<i>Low</i>
<b>Status</b>	<i>Ongoing -Monitoring is being done a continual basis.</i>

<b>Action Step 2: Monitor existing subdivision regulations to promote conservation of floodplains, wetlands, and groundwater recharge areas.</b>	
<b>Responsible Department</b>	Echols County Board of Commissioners
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Low
<b>Status</b>	Ongoing –monitoring is being done continually

<b>Action Step 3: Seek funding from private foundations, individuals, federal and state grants, and local communities to leverage available green space grant funds.</b>	
<b>Responsible Department</b>	Echols County EMA, Echols County Commission,
<b>Anticipated Cost</b>	\$2,000,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA DOT TE, USDA, LWCF, Private Foundations, Individual Assistance
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Low
<b>Status</b>	Ongoing – Extended due to importance. No funding has been found.

<b>Action Step 4: Educate public and private organizations on methods for preserving parks and recreation areas.</b>	
<b>Responsible Department</b>	Echols County EMA, Echols County Commission,
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Low
<b>Status</b>	Ongoing – Extended due to importance. Some education has been conducted via social media, but more is needed.

**Objective 3: Establish correct boundaries for flood-prone areas along the major rivers in Echols County**

*Action Step 1: Rebuild SR-135 bridge over the Alapahoochee River (known locally as the “Little River”) has been completed.*

Action Step 1: Repair J. Frank Culpepper Rd. bridge over the Alapahoochee River (known locally as the “Little River”)	
<b>Responsible Department</b>	Echols County, GDOT
<b>Anticipated Cost</b>	\$1 million
<b>Existing &amp; Potential Funding Sources</b>	General Funds, T-SPLOSTs, LMIG, GDOT
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing

Action Step 2 (new): Repair Howell Rd. bridges over flood zones and the Alapaha River.	
<b>Responsible Department</b>	Echols County, GDOT
<b>Anticipated Cost</b>	\$1 million
<b>Existing &amp; Potential Funding Sources</b>	General Funds, T-SPLOSTs, LMIG, GDOT
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Construction

**D. Special Multi-Jurisdictional Strategy and Considerations:**

There is only one jurisdiction in Echols County (Echols County itself).

**E. Local Public Information and Awareness Strategy.**

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

**F. Changes from the Previous Plan**

Goal 1, Objective 1

Action Step	Changes
<b>Action Step 1: Review data on storm events to determine where repetitive Flooding occurs as a result of inadequate drainage infrastructure and identify &amp; pursue grant funds to upgrade deficient drainage systems.</b>	Update funding source - ongoing
<b>Action Step 2: Utilize tax evaluation data to determine cost effectiveness of acquiring properties in flood prone areas.</b>	Cancel – inability to complete due to staff
<b>Action Step 3: Identify and pursue funding to acquire properties in flood prone areas.</b>	Cancel – inability to complete due to funding or staff
<b>Action Step 4: Continue membership in the NFIP by adopting updated ordinances and FIRM maps as updates are available.</b>	Ongoing Renumbered – to #2
<b>Action Step 5 (formerly #4): Encourage homeowners review benefits offered through the National Flood Insurance Program.</b>	Ongoing. Renumbered –to #3

Goal 1, Objective 2

Action Step	Changes
<b>Action Step 1: Monitor comprehensive land use plans to ensure mapping of lands to be permanently protected.</b>	None - ongoing
<b>Action Step 2: Monitor existing subdivision regulations to promote conservation of floodplains, wetlands, and groundwater recharge areas.</b>	None - ongoing
<b>Action Step 3: Seek funding from private foundations, individuals, federal and state grants, and local communities to leverage available green space grant funds.</b>	None - ongoing
<b>Action Step 4: Educate public and private organizations on methods for preserving parks and recreation areas.</b>	None - ongoing

Goal 1, Objective 3

Action Step	Changes
<b>Action Step 1: Petition the National Weather Service or US Geological Survey to place and maintain river gauges at identified locations along the Alapaha and Suwannee Rivers in Echols County.</b>	Completed
<b>Action Step 1 (new): Rebuild SR-135 bridge over the Alapahoochee River (known locally as the “Little River”)</b>	Completed
<b>Action Step 2 (new): Repair J. Frank Culpepper Rd. bridge over the Alapahoochee River (known locally as the “Little River”)</b>	Renumbered – ongoing
<b>Action 2 (new): Repair Howell Rd. bridges over flood zones and the Alapaha River.</b>	New

Goal 1, Objective 4

This objective was removed and no new action steps have been created.

## **SECTION III. TORNADOES**

### **A. Community Mitigation Goals**

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Echols County. Tornadoes are unpredictable and can happen at any place and at any time. Because these tornadoes may be extremely powerful and cause great damage, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

### **B. Identification and Analysis of Comprehensive Range of Mitigation Options**

#### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

#### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 2, Section II.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them more resilient to natural hazards.

#### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard

#### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

### **C. Mitigation Strategy and Recommendation:**

**Goal 1:** Enhance the community's ability to issue early warning of Tornadoes in an effective, dependable, and rapid manner.

**Objective 1:** Ensure that a comprehensive early warning notification system is in place.

<b>Action Step 1: Get an early warning system horn in Statenville by seeking funding from various sources.</b>	
<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	\$25,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Low
<b>Status</b>	Ongoing

Objective 2: Enhance the ability of the Echols County Emergency Management Agency to respond effectively and efficiently to emergency needs during and after a Tornado event.

Action Step 1: Become a designated “StormReady Community”.	
<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – work has not yet begun on this item and it has not been completed.

Action Step 2: Implement the “Community Emergency Response Team” (CERT) program.	
<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	\$5,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – assembling the team

Action Step 3: Seek funds to purchase 800 mhz (or similar) base station and portable radios for emergency use and improvement of communication ability for a multi-agency communication system.	
<b>Responsible Department</b>	Echols County
<b>Anticipated Cost</b>	\$60,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – extended due to importance. Funding has not been identified for this item and it has not been completed.

Goal 2: Reduce the risks and vulnerability of citizens and critical facilities to Tornado Damage.

Objective 1: Protect residents’ life, health, and property from the force of Tornadoes.

Action Step 1: Educate the public on the risks of tornadoes through social media, brochures and other methods.	
<b>Responsible Department</b>	Echols County EMA, Echols County BOE
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Action Step- a continual need. Brochures have been distributed to the public and this needs to continue.

**Action Step 2: Distribute programs on personal emergency preparedness, i.e., emergency survival kits on website.**

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	\$1,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – performed on a continual basis.

**Action Step 3: Encourage various training organizations to teach Citizen Disaster Courses frequently and put a link to the American Red Cross and other important government sites on the county website.**

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	Red Cross, HMGP
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – extended due to importance. No classes have yet been taught.

**Action Step 4: Encourage businesses to develop emergency plans.**

<b>Responsible Department</b>	Echols County EMA, Health Department
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – extended due to importance. Businesses have been encouraged to develop plans through distribution of brochures. So far no businesses are known to have developed emergency plans.

**Action Step 5: Increase public awareness of Code Red through social media, holding town hall meetings and providing bulletins to local churches and schools.**

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – extended due to importance. Public awareness has been conducted through social media, local paper, and brochures in the EMA office. Remains an ongoing need.

**Action Step 6: Purchase and install mobile and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, and critical facilities, and wherever else they are needed.**

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	\$100,000 per generator
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Facilities are still lacking generators and none have been purchased since the last HMP was updated.

**Action Step 7: Trim tree lines around roads, homes, utilities and businesses.**

<b>Responsible Department</b>	Echols County Public Works
<b>Anticipated Cost</b>	\$100,000.00
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Power, Colquitt EMC, Slash Pine EMC, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – extended due to importance. This is done approximately every month on an ongoing basis.

**Action Step 8: Seek funding to retrofit public buildings to reinforce windows, roofs and doors.**

<b>Responsible Department</b>	Echols County EMA, Echols County BOE
<b>Anticipated Cost</b>	\$500,000.00
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing

<b>Action Step 9: Initiate an inspection program at critical facilities to identify construction weaknesses subject to storm damage.</b>	
<b>Responsible Department</b>	Echols County Building Inspector, Dept Heads, Echols County Board of Commissioners,
<b>Anticipated Cost</b>	\$10,000.00
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – extended due to importance. Resources have not been available to start this program yet.

#### **D. Special Multi-Jurisdictional Strategy and Considerations:**

There is only one jurisdiction in Echols County (Echols County itself).

#### **E. Local Public Information and Awareness Strategy:**

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

#### **F. Changes from the Previous Plan**

Goal 1, Objective 1

<b>Action Step</b>	<b>Changes</b>
<b>Action Step 1: Get an early warning system horn in Statenville by seeking funding from various sources.</b>	None - ongoing

Goal 1, Objective 2

<b>Action Step</b>	<b>Changes</b>
<b>Action Step 1: Become a designated “Storm Ready Community”</b>	None - ongoing
<b>Action Step 2: Implement the “Community Emergency Response Team” (CERT) program.</b>	None - ongoing
<b>Action Step 3: Seek funds to purchase 800 mhz (or similar) base station and portable radios for emergency use and improvement of communication ability for a multi-agency communication system.</b>	Reword - ongoing

Goal 2, Objective 1

<b>Action Step</b>	<b>Changes</b>
<b>Action Step 1: Educate homeowners and builders on individual safe rooms</b>	Reword - ongoing
<b>Action Step 2: Distribute programs on personal emergency preparedness, i.e., emergency survival kits</b>	None - ongoing
<b>Action Step 3: Encourage the American Red Cross to teach Citizen Disaster Courses on a frequent basis.</b>	Reword - ongoing
<b>Action Step 4: Encourage businesses to develop emergency plans.</b>	None - Ongoing
<b>Action Step 5: Increase public awareness of the Early Warning Communication/ Notification System, NOAA weather radios and available community safe shelters by publishing articles in the local newspaper, holding town hall meetings and providing bulletins to local churches and the schools.</b>	Reword - Ongoing
<b>Action Step 6: Purchase and install mobile and fixed generators (including transfer switches) for all designated evacuation and emergency shelters, community water systems, and critical facilities, and wherever else they are needed.</b>	None - Ongoing
<b>Action Step 7: Trim tree lines around roads, homes, utilities and businesses.</b>	None - Ongoing
<b>Action Step 8: Seek funding to retrofit public buildings to reinforce windows, roofs and doors.</b>	Change Priority - Ongoing
<b>Action Step 9: Initiate an inspection program at critical facilities to identify construction weaknesses subject to high wind damage.</b>	Reword & change Responsibilities, & Priorities - Ongoing

## **SECTION IV. WILDFIRES**

### **A. Community Mitigation Goals**

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Echols County. Wildfires are unpredictable and can happen at any place and at any time. Due to the great damage it may cause, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

### **B. Identification and Analysis of the Comprehensive Range of Mitigation Options**

#### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

#### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 2, Section IV.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them more resilient to natural hazards.

#### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

#### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

### **C. Mitigation Strategy and Recommendation**

**Goal 4. Prevent damage resulting from wildfires in Echols County, reduce the threat of Wildfires, and protect the life and property of residents.**

Objective 1: Minimize the threat of Wildfires to persons and properties in Echols County.

**Action Step 1: Request the Echols County Commission to consider the use of Urban/Wildland Interface in its development of its comprehensive plan**

<b>Responsible Department</b>	Echols County EMA, Echols County BOC
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing - Extended due to importance. This has not been accomplished but is a goal for the next comprehensive plan update.

**Action Step 2: Implement Fire-Wise program in Echols County and create 50-foot buffer around all governmental structures.**

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – Extended due to importance. Not yet implemented.

**Action Step 3: Train all firefighters to FF1 & FF2 standards and ensure that emergency vehicle drivers are trained properly.**

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	\$4,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA, AFG
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Most firefighters and drivers have been trained but new hires will need to be trained.

<b>Action Step 4: Ensure that all firefighters have latest NFPA compliant PPE turnout gear sets and SCBAs.</b>	
<b>Responsible Department</b>	Echols County EMA & Fire Dept
<b>Anticipated Cost</b>	\$100,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA, AFG, CWDG
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance.

<b>Action Step 5: Obtain a new fire truck and rehabilitate old trucks, as needed.</b>	
<b>Responsible Department</b>	Echols County Fire Dept.
<b>Anticipated Cost</b>	\$50,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA, AFG, CWDG
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Currently, fire truck needs are met but new trucks and/or repairs will be needed during the next 5 years.

<b>Action Step 6: Recommend to homeowners &amp; community stakeholders that they create some space through the trimming of shrubs and vines, overhanging limbs, replacement of flammable plants with less flammable varieties and remove vegetation around chimneys.</b>	
<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept. & Public Works Dept.
<b>Anticipated Cost</b>	\$35.00 an acre
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA, USFS
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance.

**Action Step 7: Reduce structural ignitability by cleaning flammable vegetative materials from roofs and gutters, store firewood appropriately, install skirting around raised structures, store water hoses for easy access and replace pine straw and mulch around plantings with less flammable landscaping materials around all governmental structures and recommend same to homeowners and community stakeholders.**

<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept. & Public Works Dept.
<b>Anticipated Cost</b>	\$35.00 an acre
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA, USFS
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. This has been accomplished but needs to continue on an ongoing basis.

**Action Step 8: Work with GA Power and EMCs to encourage new underground service to rural homes.**

<b>Responsible Department</b>	Echols County Commission
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, CWGD
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2020-2025
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. This has been accomplished but needs to continue on an ongoing basis for new development.

**Action Step 9: Complete the Southern Wildfire Risk Assessment at <https://www.southernwildfirerisk.com/>**

<b>Responsible Department</b>	Echols County Commission
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	New Action Step

**Action Step 10: Ensure Driveway Access/Right-Of-Way Clearance by maintaining vertical and horizontal clearance for emergency equipment and seeing that adequate lengths of culverts are installed to allow emergency vehicle access.**

<b>Responsible Department</b>	Echols County Road Dept., Building Inspection Dept. & Public Works Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. This has been accomplished but needs to continue on an ongoing basis.

**Action Step 11: Ensure Road Access by identifying needed road improvements and as roads are upgraded, widen to minimum standards with at least 50 foot diameter cul-de-sacs or turn arounds.**

<b>Responsible Department</b>	Echols County Road Dept., Building Inspection Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, CWDG
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing

**Action Step 12: Examine existing codes and ordinances and amend and enforce existing building codes as they relate to skirting, propane tank locations, public nuisances (trash/debris on property) and other relevant concerns; Review subdivision and development ordinances for public safety concerns; Enact and enforce uniform addressing ordinance.**

<b>Responsible Department</b>	Echols County Building Inspection Dept. & Public Works Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Resources have not yet become available to accomplish this item.

**Action Step 13: Work with local law enforcement to better control non-essential traffic during fire emergencies.**

<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. This has been accomplished but needs to continue on an ongoing basis.

**Action Step 14: On adjacent WUI Lands, reduce hazardous fuels by encouraging prescribed burning for private landowners and industrial timberlands particularly adjacent to residential areas; Seek grant for mowing or prescribed burning in WUI areas.**

<b>Responsible Department</b>	Georgia Forestry Commission
<b>Anticipated Cost</b>	\$35.00 an acre
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA, USFS
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. This has been accomplished but needs to continue on an ongoing basis. No grant funding has been found.

*Action Step #15: Encourage railroads to better maintain their ROW eliminating brush and grass through herbicide and mowing. Maintain firebreaks along ROW adjacent to residential areas has been completed.*

**Action Step 15: Encourage prescribed burning for private landowners and industries especially near residential areas.**

<b>Responsible Department</b>	Echols County Fire Dept. & EMA.
<b>Anticipated Cost</b>	General Funds
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Action Step

**Action Step 16: Improve existing fire lines by reducing hazardous fuels through the cleaning and re-harrowing of existing lines.**

<b>Responsible Department</b>	Georgia Forestry
<b>Anticipated Cost</b>	\$75.00 an hour
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA, USFS, CWDG
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. This has been accomplished but needs to continue on an ongoing basis.

**Action Step 17: Ensure access to water sources and dry hydrants by inspecting, maintaining and improving access to existing dry hydrants, adding signage along roads to mark the hydrants, purchasing improved drafting equipment, floating and turbo drafts, investigating the possibility of placing compatible fittings on irrigation wells and updating the GFC Fire plan to include identified helicopter dip sites.**

<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept., Road Dept. & Public Works Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, CWGD
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. These items have not been accomplished. The GFC fire plan update is in progress.

**Action Step 18: Ensure all fire stations and firefighters are equipped with wildland hand tools & lightweight PPE gear. Obtain a new brush truck and a 2,500-gallon water tanker.**

<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept.
<b>Anticipated Cost</b>	\$250,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA, AFG, CWGD, Tanker grants
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Tools and gear are available but upgrades will be needed in the next 5 years. Additional tankers and tanks are still needed.

**Action Step 19: Ensure that road names are adequately marked through improved road signage at crossroads and installation of “Dead End” or “No Outlet” tags on road signs.**

<b>Responsible Department</b>	Echols County EMA, Echols County Road Dept.
<b>Anticipated Cost</b>	\$25,000.00
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Accomplished for some but not all roads.

**Action Step 20: Ensure that all personnel are trained in Wildfire Suppression.**

<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Forestry
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Existing staff has been trained but new hires will need to be trained.

**Action Step 21: Conduct a “How to Have a Firewise Home” Workshop for Echols County Residents.**

<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept., GA Forestry
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Forestry
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Annual workshops have been held and will continue.

**Action Step 22: Conduct “Firewise” Workshop for Echols County Community Leaders.**

<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Forestry
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Annual workshops have been held and will continue.

**Action Step 23: Conduct a Spring Clean-up Event Every Spring.**

<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Forestry
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Annual cleanups have been held and will continue.

*Action Step 24: Develop and distribute Firewise informational packets to realtors, tax office & insurance agents has been completed.*

<b>Action Step 24: Create and Exhibit a Wildfire Protection Display at Local Events.</b>	
<b>Responsible Department</b>	Echols County EMA, Echols County Fire Dept.
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, GA Forestry
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance. Annual exhibits have been held and should continue.

*Action Step 26: Invite the Local News Media to Community “Firewise” Functions for News Coverage and Regularly Submit Press Releases Documenting Wildfire Risk Improvements has been completed.*

#### **D. Special Multi-Jurisdictional Strategy and Considerations:**

There is only one jurisdiction in Echols County (Echols County itself).

#### **E. Local Public Information and Awareness Strategy:**

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

## F. Changes from the Previous Plan

### Goal 1, Objective 1

Action Step	Changes
Action Step #1: Request the Echols County Commission to consider the use of Urban/Wildland Interface in the development of its comprehensive plan.	None - Ongoing
Action Step #2: Implement Fire-Wise program in Echols County.	None - Ongoing
Action Step #3: Train all firefighters to FF1 & FF2 standards and ensure that emergency vehicle drivers are trained properly.	None - Ongoing
Action Step #4: Ensure that all firefighters have latest NFPA compliant PPE turnout gear sets and SCBAs.	None - Ongoing
Action Step #5: Obtain a new fire trucks and rehabilitate old trucks, as needed.	Update cost - Ongoing
Action Step #6: Create a minimum of 30 feet of defensible space around all governmental structures and recommend to homeowners & community stakeholders that they create same space through the trimming of shrubs and vines, overhanging limbs, replacement of flammable plants with less flammable varieties and remove vegetation around chimneys.	Update wording - Ongoing
Action Step #7: Reduce structural ignitability by cleaning flammable vegetative materials from roofs and gutters, store firewood appropriately, install skirting around raised structures, store water hoses for easy access and replace pine straw and mulch around plantings with less flammable landscaping materials around all governmental structures and recommend same to homeowners and community stakeholders.	None - Ongoing
Action Step #8: Work with GA Power and EMCs to encourage new underground services to rural homes.	None - Ongoing
Action Step #9: Adopt standards for safety zones around propane distribution tanks.	Completed
Action Step #9: Complete the Southern Wildfire Risk Assessment at <a href="http://www.southernwildfirerisk.com">www.southernwildfirerisk.com</a>	New Action Step
Action Step #10: Ensure Driveway Access/Right-Of-Way Clearance by maintaining vertical and horizontal clearance for emergency equipment and seeing that adequate lengths of culverts are installed to allow emergency vehicle access.	None - Ongoing
Action Step #11: Ensure Road Access by identifying needed road improvements and as roads are upgraded, widen to minimum standards with at least 50-foot diameter cul-de-sacs or turn arounds.	None - Ongoing
Action Step #12: Examine existing codes and ordinances and amend and enforce existing building codes as they relate to skirting, propane tank locations, public nuisances (trash/debris on property) and other relevant concerns; Review subdivision and development ordinances for public safety concerns; Enact and enforce uniform addressing ordinance.	None - Ongoing
Action Step #13: Work with local law enforcement to better control non-essential traffic during fire emergencies.	None - Ongoing

<b>Action Step #14: On adjacent WUI Lands, reduce hazardous fuels by encouraging prescribed burning for private landowners and industrial timberlands particularly adjacent to residential areas; Seek grant for mowing or prescribed burning in WUI areas.</b>	None - Ongoing
<b>Action Step #15: Encourage railroads to better maintain their ROW eliminating brush and grass through herbicide and mowing. Maintain firebreaks along ROW adjacent to residential areas.</b>	Reworded - Ongoing
<b>Action Step #16: Improve existing fire lines by reducing hazardous fuels through the cleaning and re-harrowing of existing lines.</b>	None - Ongoing
<b>Action Step #17: Ensure access to water sources and dry hydrants by inspecting, maintaining and improving access to existing dry hydrants, adding signage along roads to mark the hydrants, purchasing improved drafting equipment, floating and turbo drafts, investigating the possibility of placing compatible fittings on irrigation wells and updating the GFC Fire plan to include identified helicopter dip sites.</b>	None - Ongoing
<b>Action Step #18: Ensure all fire stations and firefighters are equipped with wildland hand tools &amp; lightweight PPE gear and investigate the need for additional tankers and overhead refill tanks (at rural stations).</b>	Reworded - Ongoing
<b>Action Step #19: Ensure that road names are adequately marked through improved road signage at crossroads and installation of “Dead End” or “No Outlet” tags on road signs.</b>	None - Ongoing
<b>Action Step #20: Ensure that all personnel are trained in Wildfire Suppression.</b>	None - Ongoing
<b>Action Step #21: Conduct “How to Have a Firewise Home” Workshop for Echols County Residents.</b>	Reword Responsible Party - Ongoing
<b>Action Step #22: Conduct “Firewise” Workshop for Echols County Community Leaders.</b>	None - Ongoing
<b>Action Step #23: Conduct a Spring Clean-up Event Every Spring.</b>	None - Ongoing
<b>Action Step #24: Develop and distribute Firewise informational packets to realtors, tax office &amp; insurance agents.</b>	Completed
<b>Action Step #25: Create and Exhibit a Wildfire Protection Display at Local Events such as the Carrot Festival &amp; Fourth of July and Hold Open Houses At Fire Stations to Develop Community Support and Understanding of Local Fire Departments and Current Issues.</b>	Reworded- Ongoing
<b>Action Step #26: Invite the Local News Media to Community “Firewise” Functions for News Coverage and Regularly Submit Press Releases Documenting Wildfire Risk Improvements.</b>	Completed

## **SECTION V. THUNDERSTORMS AND LIGHTNING**

### **A. Community Mitigation Goals**

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Echols County. Thunderstorms and lightning are unpredictable and can happen at any place or time. Because these storms may be extremely violent and cause great damage, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Actions Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

### **B. Identification and Analysis of the Comprehensive Range of Mitigation Options**

#### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

#### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 2, Section IV.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them more resilient to natural hazards.

#### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

#### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

### **C. Mitigation Strategy and Recommendations:**

Goal 5: Protect Citizens of Echols County from the threat of Thunderstorms & Lightning Strikes.

Objective #1: Provide tools necessary for warning of Thunderstorms & Lightning Strikes.

**Action Step 1: Provide every public outdoor recreation facility and every public school outdoor recreation facility with an automatic warning device, if feasible.**

<b>Responsible Department</b>	Echols County EMA, & BOA
<b>Anticipated Cost</b>	\$25,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium

<b>Status</b>	Ongoing
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**Action Step 2: Educate the public on the risks of thunderstorms & lightning through press releases on thunderstorms & lightning, brochures and other methods.**

<b>Responsible Department</b>	Echols County EMA, Echols County BOE
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – a continual need. Brochures have been distributed to the public and this needs to continue.

#### **D. Special Multi-Jurisdictional Strategy and Considerations:**

There is only one jurisdiction in Echols County (Echols County itself).

#### **E. Local Public Information and Awareness Strategy:**

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

#### **F. Changes from the Previous Plan**

Goal 1, Objective 1

<b>Action Step</b>	<b>Changes</b>
<b>Action Step 1: Provide every public outdoor recreation facility and every public school outdoor recreation facility with an automatic warning device, if feasible.</b>	None – Ongoing
<b>Action Step 3: Educate the public on the risks of thunderstorms &amp; lightning through press releases on thunderstorms &amp; lightning, brochures and other methods.</b>	Renumbered from #3 to #2 – Ongoing

## **SECTION VI. EXTREME HEAT**

### **A. Community Mitigation Goals**

As previously indicated in Chapter 2, this hazard may cause substantial damage to life, property, and the economy in Echols County. Extreme Heat events can happen at any place and at any time. Because of the potential for injury and death, the HMPUC believes that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

### **B. Identification and Analysis of Comprehensive Range of Mitigation Options**

#### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

#### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 2, Section VI.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them more resilient to natural hazards.

#### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

#### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

### **C. Mitigation Strategy and Recommendation:**

#### **Goal 6: Ensure the citizens of Echols County are warned of conditions of extreme heat.**

Objective 1: Employ methodology for determining "Heat Stress" days in Echols County and forecasting the danger.

### Action Step 1: Organize outreach to vulnerable populations on the signs of Heat Exhaustion and Heat Stroke

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Action Step

### Action Step 2: Educate the community of the dangers and signs of heat risks via social media, Code Red, etc)

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Action Step

**Goal 6a: Ensure the vulnerable citizens of Echols County are protected against conditions of extreme heat.**

### Action Step 1: Establish and promote accessible cooling centers in the community.

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Action Step

### Action Step 2: Provide generators for the cooling centers during high heat waves or when power is out during a natural disaster in the community.

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	\$10,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	New Action Step

**Action Step 3: Work with Parks and Recreation to plant more shade trees in the parks; apply for tree planting grants**

<b>Responsible Department</b>	Echols County EMA; Parks and Recreation;
<b>Anticipated Cost</b>	\$5,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds; Greenspace Grants; USDA Grants
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	New Action Step

**Action Step 4: Provide drinking water refill stations for local outdoor events**

<b>Responsible Department</b>	Echols County EMA; Parks and Recreation; private sponsors
<b>Anticipated Cost</b>	\$500
<b>Existing &amp; Potential Funding Sources</b>	General Funds; Private Sponsors
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	New Action Step

**D. Special Multi-Jurisdictional Strategy and Considerations:**

There is only one jurisdiction in Echols County (Echols County itself).

**E. Local Public Information and Awareness Strategy:**

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

## F. Changes from the Previous Plan

### Goal 1, Objective 1

Action Step	Changes
Action Step 1: Organize outreach to vulnerable populations on the signs of Heat Exhaustion and Heat Stroke	New Action Step
Action Step 2: Educate the community of the dangers and signs of heat risks via social media, Code Red, etc)	New Action Step

### Goal 2, Objective 1

Action Step	Changes
Action Step 1: Establish and promote accessible cooling centers in the community.	New Action Step
Action Step 2: Provide generators for the cooling centers during high heat waves or when power is out during a natural disaster in the community.	New Action Step
Action Step 3: Work with Parks and Recreation to plant more shade trees in the parks; apply for tree planting grants	New Action Step
Action Step 4: Provide drinking water refill stations for local outdoor events	New Action Step

## **SECTION VII: DROUGHT**

### **A. Community Mitigation Goal**

As previously indicated in Chapter 2, drought may cause substantial economic, property, and personal damage in Echols County, particularly in the form of crop damage. Its effects can be long-term, with the damage increasing as time goes by. In addition, drought conditions can contribute to wildfires in the community. The HMPUC believes that, due to the damage drought can cause, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

### **B. Identification and Analysis of Comprehensive Range of Mitigation Options**

#### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

#### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 2, Section VII.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them more resilient to natural hazards.

#### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

#### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

### **C. Mitigation Strategy and Recommendations**

#### **Goal 7: Protect Echols County from the effects of drought conditions.**

Objective 1: Ensure adequate drinking water supply is available during drought conditions.

**Action Step 1: Develop a comprehensive study that will allow community leaders to understand when public and domestic underground water systems' water levels are threatened.**

<b>Responsible Department</b>	Echols County Water Authority
<b>Anticipated Cost</b>	\$10,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – not yet accomplished due to lack of funds/staff, but still needed.

**Action Step 2: Educate the public on drought risks through press releases on droughts, brochures and other methods.**

<b>Responsible Department</b>	Echols EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	New Action Step

#### **D. Special Multi-Jurisdictional Strategy and Considerations:**

There is only one jurisdiction in Echols County (Echols County itself).

#### **E. Local Public Information and Awareness Strategy:**

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

## F. Changes from the Previous Plan

Action Step	Changes
Action Step 1: Develop a comprehensive study that will allow community leaders to understand when public and domestic underground water systems' water levels are threatened.	None - Ongoing
Action Step 2: Educate the public on drought risks through press releases on droughts, brochures and other methods.	New Action Step

## Chapter 5.

### Local Technological Hazard Mitigation Goals and Objectives

#### **Overall Community Mitigation Goals, Policies, and Values Narrative**

The purpose of the Echols County Hazard Mitigation Plan is to not only assess the vulnerability of the area to natural hazards, but to identify those action steps that may need to be undertaken to reduce the potential loss of life and property from identified technological hazards. As in the case of natural hazards, the development of this plan requires an overall set of community goals that clearly state the community's commitment to reducing or avoiding the long-term vulnerabilities to the identified hazards. With these overall goals in place, more specific goals, objectives, and action steps to protect the community from the identified hazards can then be developed. Using the findings from the Risk Assessment as a guide, the HMPUC has developed the following overall community mitigation goals:

**Goal 1: Protect the public health and safety;**

**Goal 2: Eliminate or reduce exposure of critical community facilities to the hazards identified in the community risk assessment;**

**Goal 3: Where exposure to hazards cannot be limited, implement, to the extent resources are available, the action steps needed to reduce the potential loss of life and property;**

**Goal 4: Maintain and/or enhance the community's capacity to issue warnings and to respond promptly and effectively in a hazard event.**

With these overall community mitigation goals in place, the following Goals, Objectives, and Action Steps have been developed to specifically address the technological hazards identified in Chapter 3. In addition, the same methodology as in Chapter 4 was utilized in ranking the priority of each action step.

There have not been any changes in the overall priorities since the previous plan was completed.

#### **Section I. Hazardous Materials Release**

##### **A. Community Mitigation Goals**

As previously indicated in Chapter 3, a hazardous materials release may cause substantial damage to life, property, and the economy in Echols County. Such events can occur with little or no warning, giving the community no time to prepare and/or evacuate. The HMPUC believes that, because these events have the potential to cause great damage, injury, and loss of life, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

## **B. Identification and Analysis of Comprehensive Range of Mitigation Options**

### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 3, Section I.

### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them more resilient to natural hazards.

### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

## **C. Mitigation Strategy and Recommendations**

### **Goal 1: Protect the health and safety of residents of Echols County.**

Objective 1: Enhance the ability of the Echols County Emergency Management Agency to coordinate effectively and efficiently the emergency response during and after a hazardous materials release.

<b>Action Step 1: Implement the “Community Emergency Response Team” (CERT) program.</b>	
<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	\$5,000.00
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance

Objective 2: Minimize the effect of hazardous material spills.

<b>Action Step 1: Maintain Initial HazMat response training</b>	
<b>Responsible Department</b>	EMA/ Fire Department
<b>Anticipated Cost</b>	Staff time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – Extended due to importance

<b>Action Step 2: Seek funding to expand HazMat training to first responders (fire, sheriff, EMS)</b>	
<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – Extended due to importance

<b>Action Step 3: Increase public awareness and procedures to follow if a hazardous material spill event occurs by publishing articles in the local newspaper, town hall meetings and social media</b>	
<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing – Extended due to importance

<b>Action Step 4: Train local government officials on proper response procedures for hazardous material spill events.</b>	
<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HMGP, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2024-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing – Extended due to importance

*Action Step 5: Investigate, implement, and train in methods to relocate residents if event occurs has been completed.*

*Action Step 6: Provide workplace training on decontamination steps has been completed.*

Action Step 5 (Previously #7): Review annually all hazardous material transportation routes (relocate routes if necessary)	
Responsible Department	Echols County EMA
Anticipated Cost	Staff Time
Existing & Potential Funding Sources	General Funds, HMGP, FMA
Jurisdiction	Echols County
Timeframe	2024-2029
Priority	Medium
Status	Ongoing – Extended due to importance

**D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

**E. Local Public Information and Awareness Strategy:**

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

**F. Changes from the Previous Plan**

Goal 1, Objective 1

Action Step	Changes
Action Step 1:Implement the “Community Emergency Response Team” (CERT) program	None -- Ongoing

Goal 1, Objective 2

Action Step	Changes
<b>Action Step 1: Maintain Initial HazMat response training</b>	Reword, change responsible party – Ongoing
<b>Action Step 2: Seek funding to expand HazMat training to first responders (fire, sheriff, EMS)</b>	Change Priority – Ongoing
<b>Action Step 3: Increase public awareness and procedures to follow if a hazardous material spill event occurs by publishing articles in the local newspaper, holding town hall meetings, radio announcements and providing bulletins to local churches and schools.</b>	Reword, change priority – Ongoing
<b>Action Step 5: Investigate, implement, and train in methods to relocate residents if event occurs has been completed.</b>	Completed
<b>Action Step 6: Provide workplace training on decontamination steps has been completed.</b>	Completed
<b>Action Step 7: Review annually all hazardous material transportation routes (relocate routes if necessary)</b>	Renumbered—Ongoing

## **Section II. Public Health Emergency**

### **A. Community Mitigation Goals**

As previously indicated in Chapter 3, a hazardous materials release may cause substantial damage to life, property, and the economy in Echols County. Such events can occur with little or no warning, giving the community no time to prepare and/or evacuate. The HMPUC believes that, because these events have the potential to cause great damage, injury, and loss of life, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce this hazard's potential impact on the community.

### **B. Identification and Analysis of Comprehensive Range of Mitigation Options**

#### **1. Structural and Non-Structural Mitigation:**

This Hazard Mitigation Plan contains both structural and non-structural options. For more information, see the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below.

#### **2. Existing Policies, Regulations, Ordinances and Land Use:**

Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard. For more information, see Chapter 3, Section I.

#### **3. Community Values, Historic and Special Considerations:**

Historic buildings exist in the community, a few of which are Critical Facilities. There are historic and special considerations that pose significant challenges with regard to the retrofitting of historic buildings in order to make them more resilient to natural hazards.

#### **4. New Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect new buildings and infrastructure from the effects of this hazard.

#### **5. Existing Buildings and Infrastructure:**

The mitigation strategy and recommendations that follow include action steps designed to protect existing buildings and infrastructure from the effects of this hazard.

### **C. Mitigation Strategy and Recommendations**

#### **Goal 1: Protect the population of Echols County from the effects of a disease outbreak.**

Objective 1: Secure external sources of funding and training to help prepare for and respond to events.

**Action Step 1: Increase Immunization education, prevention and pre-planning efforts, particularly for the homeless and low-income individuals in the community, and host flu shot and other immunization clinics.**

<b>Responsible Department</b>	Health Department
<b>Anticipated Cost</b>	Staff Time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, Dept of Community Health; HHS Health Department
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing

**Action Step 2: Identify vulnerable populations (homeless, migrants, low income, etc.) and identify community groups to work with in order to reach and educate these populations effectively regarding health issues.**

<b>Responsible Department</b>	Echols County EMA, Health Department
<b>Anticipated Cost</b>	Staff time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, Dept of Community Health; HHS Health Department
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	High
<b>Status</b>	Ongoing

**Action Step 3: Develop a plan to identify community locations where water, food, ice, tarps, medical countermeasures, etc., can be obtained and distributed.**

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	Staff time
<b>Existing &amp; Potential Funding Sources</b>	General Funds, HHS, FMA
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

**Action Step 4: Develop and Train Local Emergency Planning Committee**

<b>Responsible Department</b>	Echols County EMA
<b>Anticipated Cost</b>	\$5,000
<b>Existing &amp; Potential Funding Sources</b>	General Funds
<b>Jurisdiction</b>	Echols County
<b>Timeframe</b>	2025-2029
<b>Priority</b>	Medium
<b>Status</b>	Ongoing

*Action Step 5: Approach large businesses about working with the EMA on developing public health emergency plans has been completed.*

**D. Special Multi-Jurisdictional Strategy and Considerations:**

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

**E. Local Public Information and Awareness Strategy:**

All sections of the Plan shall be monitored and evaluated annually by the County Emergency Management Agency. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (news media, social media, web pages and County Commission meetings, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

## F. Changes from the Previous Plan

### Goal 1, Objective 1

Action Step	Changes
Action Step 1: Increase Immunization education, prevention and pre-planning efforts, particularly for the homeless and low-income individuals in the community, and host flu shot and other immunization clinics.	Changed cost— Ongoing
Action Step 2: Identify vulnerable populations (homeless, migrants, low income, etc.) and identify community groups to work with in order to reach and educate these populations effectively regarding health issues.	Ongoing
Action Step 3: Develop plan to identify community locations to obtain and distribute Water, Food, Ice, Tarps, medical countermeasures, etc.	Reworded— Ongoing
Action Step 4: Develop Local Emergency Planning Committee	Reworded & changed cost— Ongoing
Action Step 5: Approach large businesses about working with the EMA on developing public health emergency plans.	Completed

# Chapter 6: Executing The Plan

## Summary of changes:

- Revised and updated language.

## **SECTION 1: IMPLEMENTATION OF THE ACTION PLAN**

### **A. Administrative Actions**

The meetings and planning process of the HMPUC have been overseen by the Echols County Emergency Management Agency. The Southern Georgia Regional Commission contracted with the Echols County Commission to administer and facilitate the planning process. The Echols County Commission will adopt the Plan (on approval by GEMA and FEMA) by the resolutions contained in Appendix E.

### **B. Authority and Responsibility**

The Echols County Commission has authorized the submission of this Plan to both GEMA and FEMA for approval.

As determined by the Echols County Commission, the Echols County EMA Director will be responsible for this Plan and its continued usage as a planning document. The EMA Director will oversee implementation, monitoring, and updates for the county and will be responsible for the implementation of the specific mitigation activities proposed in this plan.

### **C. Prioritization**

#### **1. Methodology for Prioritization**

In prioritizing the implementing of the action steps identified in this plan, those hazards deemed to pose the greatest threat will be given the primary consideration. In prioritizing the implementation feasibility of the action steps and projects, local governments will take into consideration the additional factors of cost and time. Those activities requiring smaller amounts of money and staff time to implement will be given highest implementation priority. Those steps requiring additional funding for equipment or staff time beyond the normal budgets of the communities will be incorporated into the budget process when possible based on the cost-benefit analysis described below. “High” priority indicates actions that are of great importance to the community and that efforts will be made to accomplish these actions, depending on available funding, prior to accomplishing the other listed action steps. “Medium” priority indicates those items that are important to the community but should receive funding and resources only after sufficient funding and resources have been devoted to accomplishing “High” priority action steps. “Low” priority action steps are those that, while still important to the community, will be accomplished depending on funding and resources and on the number of “High” and “Medium” priority action steps that have first been accomplished.

#### **2. Use of Cost Benefit Analysis**

The data provided in Worksheet 3 will be utilized to quantify the number of persons and/or property at risk from each hazard. Combined with the criteria in Worksheet 4, this will allow local governments to

assess the potential value of at-risk properties and the resulting benefits from the proposed action steps.

In prioritizing projects, the local governments will also utilize cost benefit analysis (CBA) to evaluate the feasibility of a major project. CBA is a well-established method for quantitatively comparing the benefits and costs of mitigation projects. The end result is a Benefit-Cost Ratio (BCR), which is derived from a project's total net present value of benefits divided by the total project cost estimate, which must include all documented project and maintenance costs. The benefits of mitigation projects are avoided damages, disruptions, losses, and casualties. Examples of common benefits include avoided or reduced damages to buildings, contents, or infrastructure; avoided or reduced economic impacts of loss of function of buildings; avoided or reduced displacement costs for temporary shelters; avoided or reduced loss of public services; avoided or reduced loss of net business income; avoided or reduced economic impacts of loss of function of infrastructure; avoided or reduced road or bridge closures; avoided or reduced loss of utility services; and avoided or reduced deaths and injuries.

### **3. Use of other Calculations**

Additional calculations that were performed included: Availability of potential funding sources; overall feasibility; measurable milestones; public and political support for the proposed actions; and the STAPLEE criteria. The STAPLEE criteria were considered for each action step and include the following: Social criteria (acceptance of the relevant action by the community, effect on segment of population); Technical criteria (technical feasibility of the given action step, whether it is a long term solution, and secondary impacts); Administrative criteria (staffing required, funding allocated, and maintenance/operations required); Political criteria (political support for the action step, the presence of a local champion for the given action, and public support for the action step); Legal criteria (state authority, existing local authority, and potential legal challenges); Economic criteria (benefits of the action, costs of the action, contribution to the community's economic goals, and outside funding required); and finally, Environmental criteria (effect on land/water, effect on endangered species, effect on HAZMAT/waste sites, consistency with community environmental goals, and consistency with federal laws). Each of these STAPLEE criteria was evaluated individually for each action step through analysis by SGRC staff and the HMPUC. Results are shown in Worksheet 4 in Appendix D.

### **4. Use of Other Review Structures**

In addition to the cost-benefit analysis, other factors that may affect the prioritization of projects include the availability of special tax, grant, and/or loan funds which become available on a limited basis to finance project implementation, such as SPLOST funds or FEMA Pre-Disaster Mitigation Program funds.

## **D. Incorporation of Local Hazard Mitigation Plan into Other Plans/Planning Measures**

This Plan will be reviewed by Echols County. The requirements of this Hazard Mitigation Plan will be taken into consideration and will be incorporated into Comprehensive Plans, Five-Year Short-Term Work Program, Capital Improvement Plans, Local Emergency Operations Plans, and all other such Plans as appropriate. Specifically, the Goals, Objectives, and Action Steps of this HMP will be used to inform the goals, community needs and opportunities, community policies, and work program projects listed in the Comprehensive Plan, which include a five-year short-term work program, as well as those projects listed in any future capital improvement plans. The goals and objectives of this plan will be used to inform the development of any future Local Emergency Operations Plans.

Once this plan is approved, it will be used by the consultants and planning committees responsible for the update process for the County Comprehensive Plan, Short-Term Work Program, and all other plans that could incorporate the requirements of this plan.

To facilitate inclusion of this Plan, the Echols County Commission will provide a copy of this Plan to the persons and/or committees responsible for writing and updating plans. Copies will be provided electronically (via e-mail, the SGRC website, web-based file sharing, or other methods as requested by the relevant committee) as well as hard copy if desired.

## **SECTION II.**

### **EVALUATION AND MONITORING**

#### **A. Method**

The Echols County EMA Director will be charged with ensuring that this plan is monitored and periodically updated in subsequent years. The method that the Echols County EMA will use to monitor the plan and evaluate implementation progress will be the following:

- The Echols County EMA will conduct quarterly telephone interviews with the various local governments and area agencies in order to chart their plan progress.
- The EMA Director will hold formal public meetings at least once a year to monitor the progress of the plan implementation and allow the public a forum for expressing concerns, opinions, and ideas.
- Throughout the year, a series of informal meetings will be held in which various aspects of the plan, including monitoring and evaluation, are discussed.

#### **B. Criteria Used To Monitor and Evaluate the Plan**

The major criteria to measure plan success will be the number of goals, objectives, and action steps, or components thereof, that have been completed, which in turn will result in savings of life, money, and property.

## **SECTION III.**

### **PLAN UPDATE AND MAINTENANCE**

#### **A. Public Involvement**

Because the Hazard Mitigation Plan is intended to help ensure a safe and livable environment for all of Echols County, it is imperative that public involvement be an integral part of the planning process.

Since adoption of the original Echols County Pre-Disaster Mitigation Plan, citizens have been kept involved and apprised of plan progress through such forums as regularly scheduled County Commission meetings, public hearings, and applicable newspaper coverage. This same level of public education and awareness and citizen involvement will continue over the next five years until the next required update of the Hazard Mitigation Plan. When specific issues dictate, public hearings will be conducted, and all other community planning efforts (Comprehensive Plan, Regional Plan, etc.) will afford citizens the opportunity to participate in and comment on the need to incorporate hazard mitigation initiatives.

To facilitate the goal of continued public involvement in the planning process, the EMA will assure that the following steps are taken:

- The public will be directly involved in the update and review of the Plan. The public will be notified and invited to the annual meetings through flyers, social media and/or the local newspaper, and an e-mail list. Echols County Board of Commissioners staff will use social media, e-mail lists, and flyers to publicize meetings.

- Copies of the plan will be kept on hand at the Echols County Board of Commissioners office and the Echols County EMA office.
- The plan will be available on the County and/or Southern Georgia Regional Commission websites, and will contain an e-mail address and phone number the public can use for submitting comments and concerns about the plan.
- A public meeting will be held annually to provide the public with a forum for expressing concerns, opinions, and ideas. The EMA will set meeting schedules and dates and use County resources to publicize and host this meeting.

## **B. Timeframe**

Pursuant to the requirements set forth in the Disaster Mitigation Act of 2000, the community is again required to update and evaluate the plan no more than five years after its adoption. At least one year prior to the end of the required five-year update period, the EMA Director will begin the planning process for a new update to this plan. This will consist of establishing a new planning committee that will be tasked with completing the update following the same process used for this update.

No later than the conclusion of the five-year period following approval of the plan update, the EMA Director shall submit a revised Hazard Mitigation Plan to GEMA for its approval. It is important to note that the plan update process, as established by the planning committee, is subject to change, depending upon subsequent regulations and/or requirements set forth by GEMA and FEMA.

# Chapter 7: Conclusion

Summary of changes:

- Revised and updated language.

Echols County has suffered considerable damage in the past from natural hazards. Planning ahead and undertaking structural and nonstructural action steps before a disaster occurs can save lives and property. This philosophy has been the driving force behind the preparation of the Echols County Hazard Mitigation Plan.

Education of the population and enhanced warning can decrease the vulnerability of the county’s citizens and visitors. Continued and improved public information and communication with the population are important parts of this plan. Because of this planning process, Echols County Officials have gained a better understanding of the hazards affecting the community.

As a result of the planning process described in Chapter 1 and the hazard, risk, and vulnerability assessment in Chapter 2, Echols County has a realistic perspective on the hazards to which the community is exposed. With the mitigation strategy outlined in Chapter 4 and the implementation plan included in Chapter 6, the local leaders have an “action plan” to follow when allocating resources to reduce their community’s vulnerability to such hazards.

## **REFERENCES**

- Echols County Board of Tax Assessors (<http://www.qpublic.net/ga>)
- Echols County website (<http://www.echolscountyga.com>)
- Echols County Flood Insurance Study (<http://www.georgiadfirm.com/status/echols/13101CV000A.pdf>)
- Center for Agribusiness & Economic Development. 2022 Georgia Farm Gate Value Report. ([2022 Farm Gate Value Report](#))
- Federal Emergency Management Agency ([www.fema.gov](http://www.fema.gov))
- FEMA National Flood Insurance Program Community Status Book (<https://www.fema.gov/national-flood-insurance-program-community-status-book>)
- Georgia Data. "Agriculture." (<https://georgiadata.org/agriculture.html>)
- Georgia Emergency Management Agency, Georgia Mitigation Information System (<https://apps.itos.uga.edu/GEMA.GMIS/>)
- Georgia Emergency Management and Homeland Security Agency (<http://www.gema.ga.gov/>)
- Georgia Forestry Commission ([www.gatrees.org](http://www.gatrees.org))
- National Oceanic and Atmospheric Administration, National Centers for Environmental Information, Storm Events Database (<http://www.ncdc.noaa.gov/stormevents/>)
- National Weather Service. Archived NWS Watch/Warnings at the Iowa State University Environmental Mesonet (<https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml>)
- Southern Georgia Regional Commission ([www.sgrc.us](http://www.sgrc.us))
- USDOT Pipeline and Hazardous Materials Safety Administration. Office of Hazardous Materials Safety database (<https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/IncrSearch.aspx>)
- U.S. Drought Monitor (<http://droughtmonitor.unl.edu/>)
- United States Census Bureau ([www.census.gov](http://www.census.gov))

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