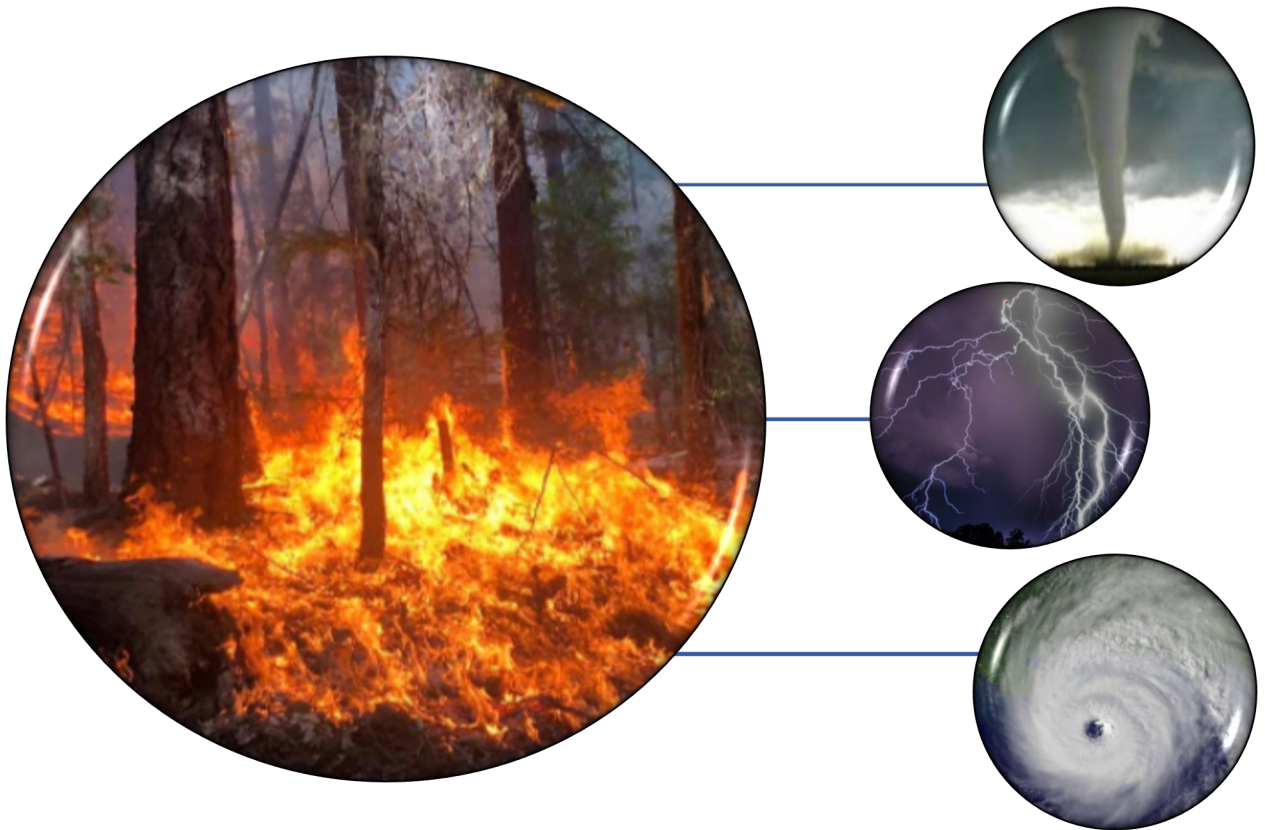


Bacon County, Georgia Hazard Mitigation Plan 2023-2028

Including the City of Alma



This Plan was produced for the Bacon County Board of
Commissioners and the City of Alma City Council
by the:



through funding provided by the Federal Emergency Management Agency and
the Georgia Emergency Management Agency

Effective March 22, 2023 - March 22, 2028

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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 made.

CHAPTER 1 Section	Updates to Section
I. Purpose and Need, Authority, and Statement of Problem	<input type="checkbox"/> Language updated to reflect that this was an update to the existing plan
II. Local Methodology, Brief Description of the Plan Update Process, and Participants in the Update Process	<input type="checkbox"/> All participating jurisdictions are the same as in the original plan
III. Description of How Each Section of the Original Plan Was Reviewed and Analyzed and Whether It Was Revised	<input type="checkbox"/> Planning Committee reviewed each section <input type="checkbox"/> Updates made using national, state, and local data
IV. Organization of Plan	<input type="checkbox"/> Consistent with the original plan
V. Local Hazard, Risk and Vulnerability (HRV) Summary, Local Mitigation Goals and Objectives	<input type="checkbox"/> Updates made using national, state, and local data
VI. Multi-Jurisdictional Special Considerations (HRV, Goals, Special Needs)	<input type="checkbox"/> No significant changes from the original plan
VII. Adoption, Implementation, Monitoring, and Evaluation (A General Description of the Processes)	<input type="checkbox"/> Evaluation method revised and updated.
VIII. Community Data (Demographics, Census, Commerce, History, Etc.)	<input type="checkbox"/> Updates made using the most recently available Census Bureau data

Section I. Purpose and Need, Authority and Statement of Problem

This document is the official plan update to the original Bacon County Pre-Disaster Mitigation Plan, approved by the Georgia Emergency Management Agency (GEMA) and the Federal Emergency Management Agency on October 26, 2007. The subsequent updates were approved in 2013 and 2018.

It aims to overview the natural hazards that may impact Bacon County and the City of Alma, Georgia. Its purpose is also to outline Bacon County and the City of Alma's plans

for the Hazard Mitigation of potential loss of life and damage to property and the economy that may occur with these events.

This Plan is a direct result of research and a planning and public involvement process undertaken by the local government officials and citizens of Bacon County and the City of Alma after forming the Bacon County Hazard Mitigation Plan Update Committee (hereafter known as the Bacon County HMPUC). This Plan results from their commitment to reducing the risks of natural hazards and their effects on their communities. The City of Alma is the only incorporated city located in Bacon County.

Hazard Mitigation is a means to address the potential damage that natural or man-made disasters may cause. This extends to addressing the possible loss of life, property, economy, etc., that would not otherwise be addressed.

The Bacon County Commission gave authority for the development of this Plan as a result of their execution of the Grantee-Subgrantee Agreement for the Bacon County Hazard Mitigation Grant Program (HMGP) Planning Project; and by the City of Alma, located in Bacon County, through their participation in the planning project.

To initiate an outreach program to neighboring communities, governments, local and regional agencies, and agencies authorized to regulate development, businesses, and the public, two Public Hearing Notices were published in the Bacon County legal organ newspaper. In addition, e-mail lists were kept updated, and those on the lists were informed of meetings through e-mails, letters, and/or telephone calls. The surrounding County EMA Directors were notified of the plan update and invited to participate in the process.

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

Through all of the above efforts, the multi-jurisdictional Bacon County/City of Alma Hazard Mitigation Plan was updated, including a comprehensive range of Mitigation Goals, Objectives, and Action Steps (see Chapter 4), which 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

This Bacon County Hazard Mitigation Plan Update encompasses the jurisdictions of Bacon County and the City of Alma, both located in Southeast Georgia. These jurisdictions

also participated in the 2008 Hazard Mitigation Plan, the 2013 Hazard Mitigation Plan Update, and the 2018 Hazard Mitigation Plan Update. The Southern Georgia Regional Commission provided technical assistance. A Bacon County Hazard Mitigation Plan Update Committee (Bacon County HMPUC) was formed. A year-long 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 natural disasters (see Chapter 4).

An essential part of the planning process is the Organization of Resources. Assessing Risks is also a necessary step in the development of the Plan. This includes identifying hazards, profiling hazard events, inventorying assets, and estimated losses. Developing the Hazard Mitigation Plan, implementing it, and monitoring its progress are the final key parts of the planning process.

Potential members of the Bacon County HMPUC were contacted by telephone or by letter/e-mail concerning their participation on the Committee. Southern Georgia Regional Commission (SGRC) staff provided technical assistance to the Bacon County HMPUC. The Bacon County HMPUC was comprised of representatives from Bacon County and the City of Alma and also included representatives from other groups and individuals, as shown below, who attended meetings and/or conducted research:

Table 1. Participants in the Hazard Mitigation Plan Update			
Jurisdiction	Title	Name	Email
BACON COUNTY FIRE & EMS	COMPLIANCE OFFICER	BEACH, TYLER	tbeach@baconcountlf.org
CITY OF ALMA	CITY MANAGER	CRACE, AL	al.crace@ciWofalmaga.gov
BACON COUNTY FIRE	ASSISTANT FIRE CHIEF	TODD, MICHAEL	mtodd@baconcounty.org
BACON COUNTY EMA & E911	DIRECTOR	TURNER, DANNY	dturner@baconcounty.org
BACON COUNTY FIRE & EMS	FIRE CHIEF/EMS DIR	WHITE, BRENT	bwhite@baconcounty.org
BACON COUNTY DEVELOPMENT AUTHORITY	DIRECTOR	ELLIS, KEVIN	kevin@baconeda.com
CITY OF ALMA	COUNCILMEMBER	JINKS, SHANNON	shannonjinks@gmail.com
CITY OF ALMA PUBLIC WORKS	DIRECTOR	JONES, RICHARD	richard.jones@cityofalmaga.gov
CITY OF ALMA	COUNCILMEMBER	LEWIS, BERNITA	bernita55@me.com
BACON COUNTY HOSPITAL	EMERGENCY COORDINATOR	LOTT, KYLE	klott@bchsi.org
BACON COUNTY HOSPITAL	EMERGENCY COORDINATOR	MAXEY, BEN	bmaxie@bchsi.org
BACON COUNTY ROAD DEPT	SUPER. & EMA DEPUTY DIR	MEDDERS, CHARLEY	cmедders@baconcounty.org
BACON COUNTY/ EMS & EMA	ADMIN ASSISTANT	MEDDERS, JUNE	jmedders@baconcounty.org
CITY OF ALMA	COUNCILMEMBER	MORRISON, MICHAEL	mlmorrison@atc.cc
CITY OF ALMA	CODE ENFORCEMENT& BLDG INSPECTOR	OUTLER, ARTHUR	arthur.outler@cityofalmaga.gov

CITY OF ALMA	ALMA PLANT MANAGER	SIMMONS, GREG	greg.simmons@cityofalmaga.gov
CITY OF ALMA	THEATER MANAGER & WEBMASTER	TAYLOR, TRINA	trina.taylor@cityofalmaga.gov
BACON COUNTY FIRE & EMS	FIRE CHIEF/EMS DIR	WHITE, BRENT	bwhite@baconcounty.org
BACON COUNTY	COUNTY COMM CHAIR	FOSKEY, RICHARD	rfoskey@baconcounty.org
CITY OF ALMA POLICE DEPT	CHIEF	BRINSON, ANDRE	andre.brinson@cityofalma.ga.gov
CITY OF ALMA	MAYOR	TAYLOR, LARRY G.	larry.g.taylor@cityofalmaga.gov

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

- Kick-off public hearing – December 9, 2021
- First workshop - January 25, 2022
- Second workshop – February 22, 2022
- Third workshop – March 22, 2022
- Fourth workshop – May 24, 2022
- Final public hearing –

Building upon the approved 2018 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 or comments regarding the plan update process. Also, comments (if any) were noted by the Southern Georgia Regional Commission staff during general question and answer periods and incorporated into the plan as appropriate.

Copies of the 2018 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 2018 Plan and the draft Plan Update document were available at the Bacon County Commission, Alma-Bacon County EMA Office, the City of Alma, and the SGRC website.

For the plan update, the Bacon County Hazard Mitigation Plan Update Committee (HMPUC) reviewed all chapters and sections of the prior plan. It updated them appropriately using national, state, and local data sources. The preceding plan was used as a basis for the update. The HMPUC reviewed the individual parts from the previous 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 sections were updated using the Georgia Forestry Commission's Bacon

County “Community Wildfire Protection Plan.” 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. Land use descriptions, zoning information, and community services were updated using the Bacon County/City of Alma Comprehensive Plan. Other documents on the State of Georgia Hazard Mitigation Plan are the Bacon County LEOP (Local Emergency Operations Plan) and the National Climatic Data Center (NCDC). The State Hazard mitigation plan and LEOP were consulted to ensure the HMP would be consistent with both these plans. Data from the NCDC were used to create the Hazard Frequency Table and associated information regarding each hazard, found in Chapter 2. Bacon County does not have a Flood Mitigation Assistance Plan or a Flood Insurance Study.

Public Comment and Participation

Public notice publication in legal organ is considered the legal method of notifying the public and inviting them to meetings.

The public was invited to attend and comment during two public hearings. The “kick-off” public hearing was held on December 9, 2021. It was advertised in the *Alma Times* (see Appendix E, Section I). Seven people, including staff of the Bacon County HMPUC, attended this public hearing, as well as one staff member from the Southern Georgia Regional Commission and one GEMA representative (see Appendix E, Section II). There were no substantive comments other than those complimentary of the planning process. Therefore, there was no need to consider or add materials derived from public statements.

A second and final public hearing was held on March 21, 2023 advertised in the *Alma Times* (see Appendix E). Citizens, including staff and the Bacon County HMPUC, were present (see Appendix E.II).

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

Bacon County/City of Alma Hazard Mitigation Plan Update **Committee Mission Statement**

This committee’s mission is to make Bacon County, The City of Alma, its citizens, local governments, communities, residences, and businesses less vulnerable to 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.

The Bacon County HMPUC was responsible for identifying natural hazard events and completing a profile vulnerability assessment, potential loss estimation, and updating the Georgia Mitigation Information System (GMIS) Critical Facilities Inventory (please see <https://www.itos.uga.edu/gema>) and Appendix F.II). They were also responsible for reviewing and updating the Mitigation Goals, Objectives, and Action Steps (please see Chapter 3 Sections I-VIII), among other responsibilities.

Section III. Description of Review, Analysis, and Revision Method

The Bacon County Hazard Mitigation Plan Update Committee (HMPUC) reviewed all chapters and sections of the original plan. It updated them (if appropriate) using national, state, and local sources. In particular, the Wildfire section(s) were updated using the Georgia Forestry Commission's Bacon County Community Wildfire Protection Plan; other chapters and sections were updated using the Bacon County/City of Alma Comprehensive Plan Five-Year Short Term Work Program, State of Georgia Hazard Mitigation Plan, and information from the National Climatic Data Center (NCDC).

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

This plan has been updated since the previous plan in 2018. Please see the tables at the beginning of the chapters for further information regarding which sections were changed and what items were updated.

Section IV. Organization of the Plan

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

- I. Flood
- II. Thunderstorm/ Wind
- III. Wildfire
- IV. Drought
- V. Tornado
- VI. Hurricane/Tropical Storm
- VII. Hail
- VIII. Severe Winter Storm

Information on these hazards was obtained from GEMA Worksheet 3A: Inventory of Assets, contained in Appendix A, and the National Climatic Data Center Information in Appendix F.

Various wildfire maps and other information have been produced through the Georgia Forestry Commission and included in their “Community Wildfire Protection Plan” for Bacon County (see Appendix C).

This Plan also contains a Hazard, Risk, and Vulnerability (HRV) Assessment (see Appendix A), a comprehensive range of Mitigation Goals, Objectives, and Action Steps (Chapter 3, Sections I-VIII), other information on the implementation of the Action Plan, monitoring, and plan update and maintenance (see Chapter 6), as well as other FEMA required items and materials (Various Chapters, Sections, and Appendices).

Bacon County Commissioners and City Council Members of the City of Alma have assigned staff to implement the comprehensive range of Mitigation Goals, Objectives, Action Steps, and other pertinent items and reports in this Plan.

The Bacon County and City of Alma Hazard Mitigation Plan exist in one bound volume with various papers and documents and a single PDF available on the SGRC website. The planning efforts of Bacon County and the City of Alma are 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 Bacon County Commission Offices, Alma City Hall, Alma-Bacon County Emergency Management Agency, Bacon County Public Library, Southern Georgia Regional Commission (as well as the SGRC website), and at the Georgia Emergency Management Agency (GEMA).

Section V.

Local Hazard, Risk, and Vulnerability (HRV) Summary, Local Mitigation Goals, and Objectives

The Bacon County HMPUC determined that the hazards established in the 2018 plan were still the most significant threats to Bacon County and the City of Alma.

A Hazard, Risk, and Vulnerability (HRV) Assessment were formulated through various information obtained during the planning process. Data has been obtained from websites, published sources, and personal accounts regarding hazards, their history in the community, and when and where they were active. These may be seen in Appendix A, D, and F.

The vulnerability of Bacon County and the City of Alma to natural hazards (including types, numbers, and value of properties) is included in the GEMA Worksheet #3A: Inventory of Assets (contained in Appendix A), the GMIS Critical Facilities Inventory (see

Appendix F), and the GEMA Worksheet: Bacon County/City of Alma PDM Hazard Frequencies Table (see Appendix D Section I). Chapter 2, Sections I-VIII, contains an overall summary of each hazard, its past, and its potential effect on the community.

The type and value of the various properties in the communities are obtained as a base value reported on GEMA Worksheet #3A: Inventory of Assets (contained in Appendix A I-VIII Parts B and adjusted for coverage of each possible selected hazard). Critical Facilities and Critical Infrastructure are also examined for the present value and potential losses from natural hazards (see Appendix F).

A description that will identify and analyze a comprehensive range of Mitigation Goals, Objectives, and Action Steps to reduce the effects of each hazard (based on risk assessment findings) is included in Chapter 4, Sections I-VIII., Chapter 6, Section describes prioritizing these Mitigation Goals, Objectives, and Action Steps through cost/benefit analysis, STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental), and other criteria.

In Chapter 6, there are sections on Implementing the Action Plan (see Section I), Evaluation, Monitoring, updating (see Section II), and Plan Update and Maintenance (see Section III). Each jurisdiction has identifiable ranges of Mitigation Goals, Objectives, and Action Steps in Chapter 4, Sections I-VIII.

Section VI. Multi-Jurisdictional Special Considerations

Bacon County has approximately 286 square miles of total area, according to the Georgia Statistics System (www.georgiastats.uga.edu), ranking 138th among counties in Georgia in terms of population. Certain services, including emergency services, may be located some distance from population centers. There is only one incorporated city in Bacon County, the City of Alma.

All of Bacon County and the City of Alma may be affected by wildfire. Geographical differences are not dependent on jurisdiction as on land use and fire district resources. A paid force staffs the Alma-Bacon County Main Fire Station. The volunteer staff is at six Fire Department properties in Bacon County. The following are the ISO classes of fire districts in the community:

Station 1: Alma-Bacon County Main:	Class 5
Station 2: Bennett Still:	Class 9
Station 3: New Lacey:	Class 9
Station 4 Sessoms:	Class 9
Station 5: Taylor Town:	Class 9
Station 6: Ware:	Class 9
Station 7: Warnock:	Class 9

Chapter 2, Sections I-VIII, Subsection F, and multi-jurisdictional differences for each hazard are described.

Section VII. Adoption, Implementation, Monitoring, and Evaluation

Before the final public hearing, the draft plan was submitted to both local governments (Bacon County and the City of Alma) for their last review.

The final draft plan was submitted to GEMA and FEMA for their approval. After their approval, resolutions were passed by the local governments after a public hearing for comment and review on **March 22, 2023**, adopting the Plan Update. Copies of the resolutions are available in Appendix E.

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

All Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, etc.).

The Alma-Bacon County EMA Director will be charged with ensuring that this plan is implemented, monitored, and periodically updated in subsequent years. The EMA Director will oversee implementation, monitoring, and updates for both jurisdictions (Bacon County and the City of Alma). The method that the Alma-Bacon County EMA will use to monitor the plan and evaluate implementation progress will be the following:

- The Alma-Bacon County EMA will conduct quarterly telephone interviews with the various local governments and area agencies to chart their plan progress.
- The EMA Director will hold formal public meetings at least once a year to monitor the plan implementation progress and allow the public to express concerns, opinions, and ideas.
- A series of informal meetings will be held throughout the year in which various aspects of the plan, including monitoring and evaluation, are discussed.

The major criteria to measure plan success will be the number of goals, objectives, and action steps, or components thereof, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

Section VIII. Community Data

Bacon County is located in southeast Georgia and was named for U.S. Senator Augustus Octavius Bacon. He served four terms in the Senate and was president pro tempore of the Senate in 1912. Bacon County consists of 285-square miles and was created from portions of Appling, Pierce, and Ware Counties in 1914. Bacon County was the 151st county, so an amendment was needed to override the previous limit of 145 counties set by the Georgia voters in 1904.

First settled by the Creek Indians, the area was part of the wiregrass region. It was later taken by the Carolinas pioneer families who sought more affordable land. Naval stores and turpentine were the key industries in the county. Alma was the county seat and was incorporated in 1906. In 1919, the courthouse was built and still serves residents.



Workers stand outside of turpentine still around 1900. The still was owned by the American Tie and Timber Company.

There are two stories about how Alma received its name. One account is that each letter represents the first letter of four of Georgia's early state capitals, Augusta, Louisville, Milledgeville, and Atlanta. The other story is that a Macon salesman, traveling through an unnamed town, offered his wife's name, Alma Sheridan. Alma is the only incorporated town in the county, but other communities are Rockingham and Sessoms. Rockingham was named for Rockingham, North Carolina, by the settlers who hailed from there.

The Bacon County Courthouse was placed on the National Register of Historic Places in 1980. The National Register of Historic Places lists two other buildings in Bacon County. The Alma Depot, privately owned and used as a warehouse, and the Rabinowitz Building on West 11th Street. Other buildings and places of interest within Bacon County are the Old Dixon Hotel and the



Camp
Ground

Methodist Church.

The blueberry business began in the early 1970s when some local farmers, with the help of Abraham Baldwin Agriculture College and the University of Georgia Extension office, began experimenting with various blueberry varieties. Today, blueberries are one of Georgia's primary agricultural products, and Bacon County continues to be the center of the Georgia blueberry crop. Bacon County began hosting the Georgia Blueberry Festival in 1974 and

continues to do so annually; Alma is known as the Blueberry Capital of Georgia.

Bacon County is located only 1 hour west of the Port of Brunswick, Georgia, 2 hours southwest of the Port of Savannah, and 4 hours south of Atlanta. Businesses, industries, entrepreneurs, visitors, and families have chosen Bacon County to live, work, and play. Most recently, La Regina Atlantica has chosen Alma to build a \$20 million food processing facility. The company will be processing carrots, peppers, basil, onions, and meats from local farmers. Tomatoes will be imported from Italy through the Port of Savannah for the needed sauces.

Two wildlife management areas, the Bacon Area and the Whitehead Creek Area, allow hunting and provide visitors and residents ample opportunity for recreation with the help of the Bacon County Parks and Recreation Department. Annual events include Child Day in April, the Georgia Blueberry Festival in June, the Guysie Mule Roundup in October, the Big Buck Contest in October, and the Christmas Parade in December.

The 2020 population of Bacon County is 11,140, an increase of 0.90% since 2015. The City of Alma's 2020 population is 3,433, a -0.17% decrease since 2015. Bacon County gained population from 2000-2010, experienced a slight decline from 2010-2015, and then gained population again in 2020. However, the City of Alma gained population from 2000-2010, had a slight decrease from 2010-2015, and had another slight decline in 2020.

According to 2020 estimates, the age distribution in Bacon County is 15.4% over 65, 57.0% ages 20-64, and 27.7% under 20. In the City of Alma, the age distribution is 11.8% over

65, 60.3% ages 20-64, and 27.8% under 20. Bacon County's population is 51.1% female and 48.9% male, and the City of Alma's population is 49.4% female and 50.6% male. The population aged 65 and older has decreased by -1.3% in the City of Alma and increased by 1.4% in Bacon County.

The population of Bacon County is 82.1% White/Caucasian, 17.1% Black/African American, 2.2% of some other race, 2.6% of two or more races, 0.2% Asian, and 0.2% Native American. The City of Alma's population is 48.6% White/Caucasian, 49.5% Black/African American, 4.7% other races, 4.0% of two or more races, and 0.8% Native American. Bacon County's population is 8.3% Hispanic/Latino of any race, and the City of Alma's population is 4.0% Hispanic/Latino.

The median household income in Bacon County is \$37,519, and the median household income in the City of Alma is \$36,408. An estimated 23.8% of Bacon County's population and 30.2% of the City of Alma's population lives below the federal poverty level. In Bacon County, 27.8% of persons under age 18 live below the poverty level, and 35.0% of persons under age 18 live below the poverty level in the City of Alma. Bacon County's estimated unemployment rate is 4.5%, and the City of Alma's unemployment rate is 9.3%. Among adults aged 16 and older, the labor force participation rate is 46.8% in Bacon County and 46.1% in the City of Alma.

Sources:

The City of Alma currently operates in compliance with the 2012 International Building Code standards and amendments. Bacon County does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated Bacon County does not.

(Sources: <https://www.wikipedia.org> and <https://www.georgiaencyclopedia.org>)

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

Summary of changes:

Table 2.1 provides a brief description of each section in this chapter and a summary of changes made.

Chapter 2 Section	Updates to Section
I. Flood	Updated data and information; edited for clarity
II. Thunderstorm/Wind	Updated data and information; edited for clarity
III. Wildfire	Updated data and information; edited for clarity
IV. Drought	Updated data and information; edited for clarity
V. Tornado	Updated data and information; edited for clarity
VI. Hurricane/Tropical Storm	Updated data and information; edited for clarity
VII. Hail	Updated data and information; edited for clarity
VIII. Severe Winter Storm	Updated data and information; edited for clarity

Using GEMA Worksheet #1: Identify the Hazard (copy contained in Appendix D Section I), the FEMA-described methodology, and other factors, various data were collected (see Appendix A, Appendix D, and Appendix F). The Bacon County HMPUC listed all of the natural hazards that may occur. Afterward, they focused on the natural hazards commonly recognized as threats to the jurisdictions that were the most prevalent and most likely to occur and cause damage in Bacon County and the City of Alma.

The eight chosen hazards are the same eight hazards that were included in the 2018 Hazard Mitigation Plan. No hazards have been added or subtracted from the 2018 Hazard Mitigation Plan.

All eight of these hazards constitute an equal threat to all geographic areas of the community. See Chapter 2, Section III and Appendix A, Section III). Bacon County contains two wind hazard zones (see Chapter 2, Section II).

There are 22 essential facilities within the hazard areas. One is the EOC building, 3 are care facilities, 8 are fire stations, 4 are law enforcement facilities, and the remaining essential facilities are six schools.

Various wildfire maps and other information have been produced through the Georgia Forestry Commission's "Community Wildfire Protection Plan" for Bacon County (see Appendix C).

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 Volcano were examined and determined not to be significant hazards for Bacon County and the City of Alma, based on history and information contained in Appendix D, the GMIS Critical Facilities Inventory materials, and maps available in Appendix A of this plan.

Section I. Flood

A. Identification of Hazard:

The Bacon County HMPUC has chosen the flood threat as the most likely hazard to occur and cause damage in Bacon County and the City of Alma 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.

In addition, hazard maps generated by the GMIS Critical Facilities Inventory for Flood (see Appendix A) were examined. Complete inventory information is contained at <https://www.itos.uga.edu/gema>. These map values come from the predicted model of the GEMA database.

Floods may occur anytime, in many cases without warning, and may cause widespread destruction. Drainage ditches and canals that are improperly cleaned or maintained may exacerbate flooding, causing homeowners to experience hours, if not days, of water-filled yards and water damage.

There are several kinds of floods, three of which can occur in Georgia: river, coastal, and urban. Most flash floods are caused by rain from slow-moving thunderstorms, storms repeatedly moving over the same area, or heavy rains from hurricane/tropical storm events.

Flash floods are the number one weather-related killer in the United States, and flooding accounts for most natural hazard damages. Six inches of fast-moving water can knock a

person off their feet. Two feet of water can float a full-sized automobile. More than half of flood victims are in vehicles that the moving water sweeps away.

Bacon County and the City of Alma are National Flood Insurance Program members. Both local governments have some part of their jurisdiction located within a floodplain. As of late 2016, both jurisdictions comply with NFIP requirements.

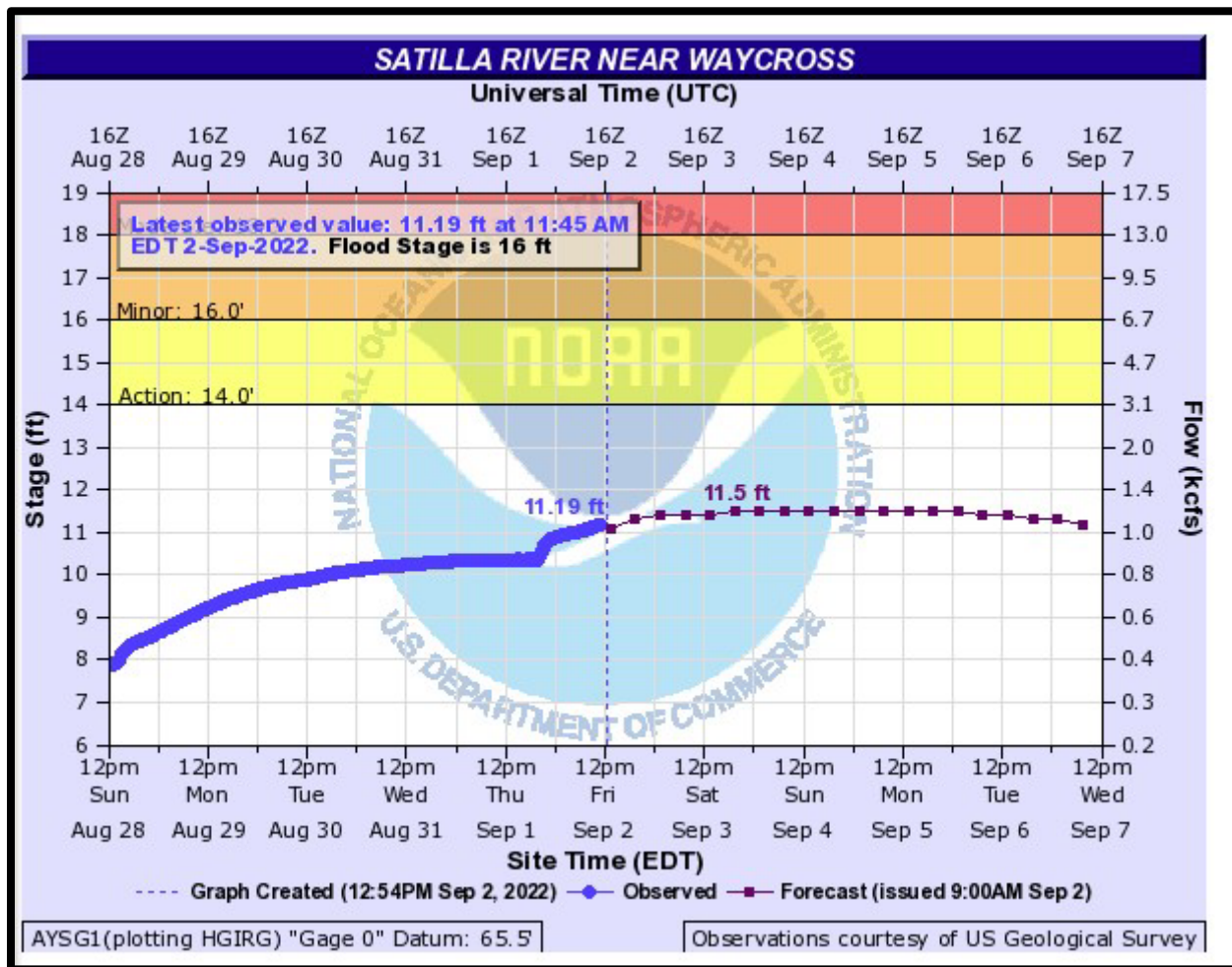
Bacon County and the City of Alma do not participate in the Community Rating System (CRS) program. As of April 1, 2022, they were not eligible, according to FEMA (<http://www.fema.gov/library/viewRecord.do?id=3629>).

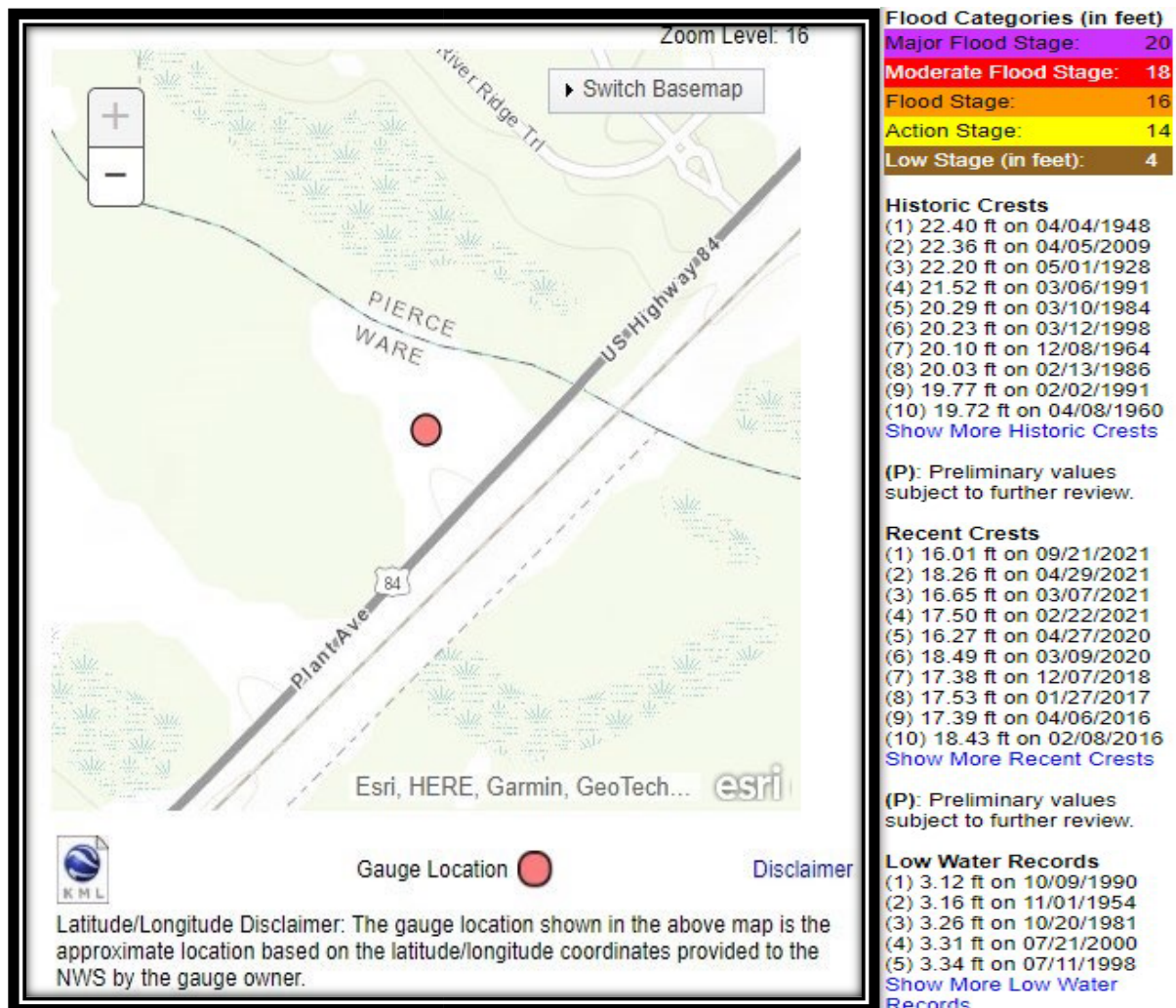
B. Profile of Flood Events, Frequency of Occurrences, Probability:

The historical record for floods is spotty, with many unreported or underreported flood events. Members of the Bacon County HMPUC have witnessed many unreported and underreported cases of minor to major flooding occurring within Bacon County and the City of Alma, some lasting for days following significant rain events. However, only certain areas of Bacon County and the City of Alma are usually vulnerable to major flooding.

Many major flooding areas are adjacent to Big Satilla Creek, Hurricane Creek, and numerous other creeks and streams. In the City of Alma, certain areas surrounding Hurricane Creek and the drainage canals are subject to flooding.

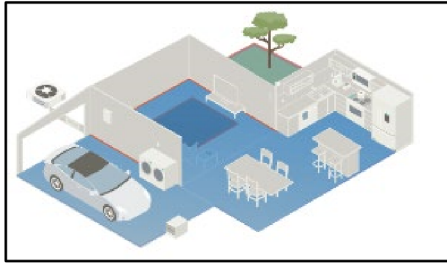
FEMA provides base flood elevations in their floodplain maps. Within Bacon County, the base flood elevations range between 141 feet above sea level and 149 feet above sea level. The charts below, generated on the NOAA website (water.weather.gov), show Flood Stages and Historic Crests for the Satilla River near Waycross, the nearest point on the Satilla River to Bacon County and Alma. The historical crests showed the highest crest of 22.40 feet in 1948. The historical low water record was 3.12 feet in 1990.



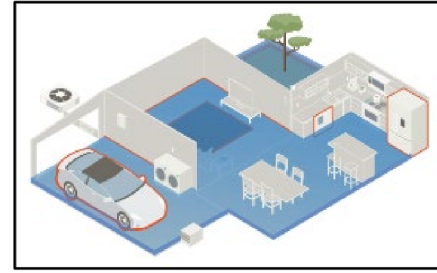
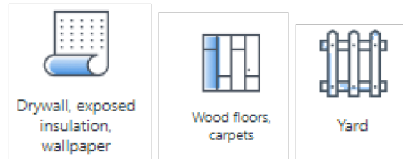


Overall, Bacon County has a minor risk of flooding over the next 30 years, which means flooding is likely to impact day-to-day life within the community. This is based on the level of risk the properties face rather than the proportion of properties with risk. In addition to the damage to residential properties, flooding can cut off access to utilities, emergency services, and transportation and may impact the overall economic well-being of an area. It may not seem like a lot, but just an inch of flooding on the first floor can cause major damage to property and belongings and spur mold growth. Even though this property has a very low likelihood of being damaged, it's important to prepare for how a flood can affect a home against extraordinary circumstances that could lead to flood damage.

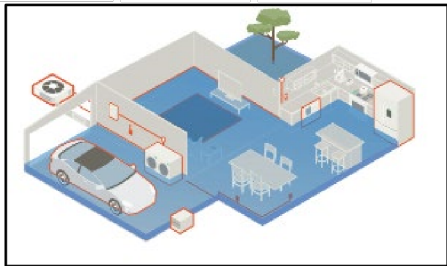
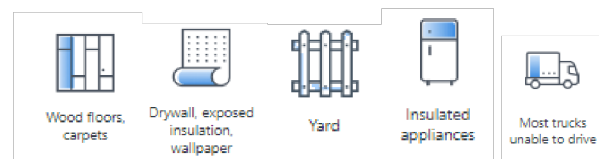
Explore the selections below to see what could get damaged in a typical home from floods ranging from under 6 inches to 3+ feet. <https://riskfactor.com>.



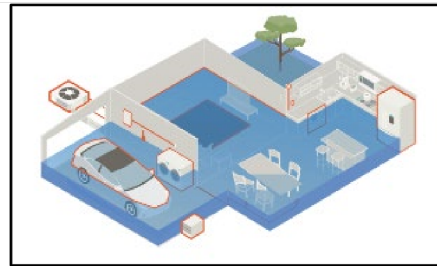
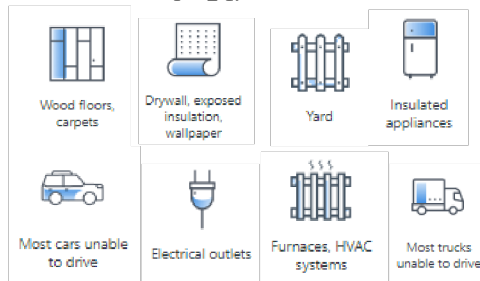
Less than 6



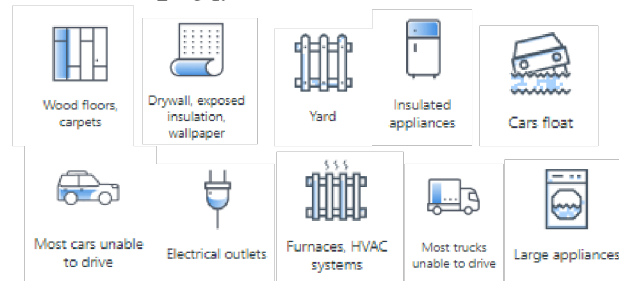
6 in - 1 ft



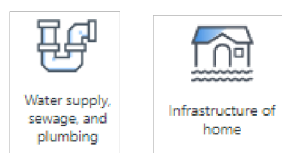
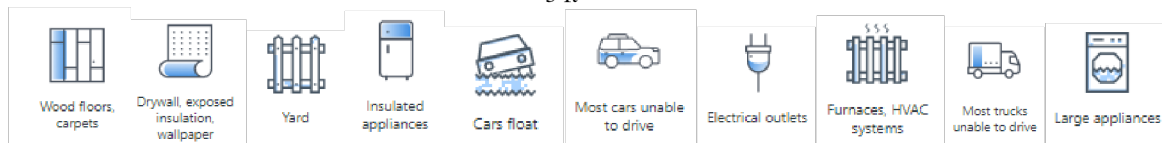
1 – 2 ft



2 – 3 ft



3 ft



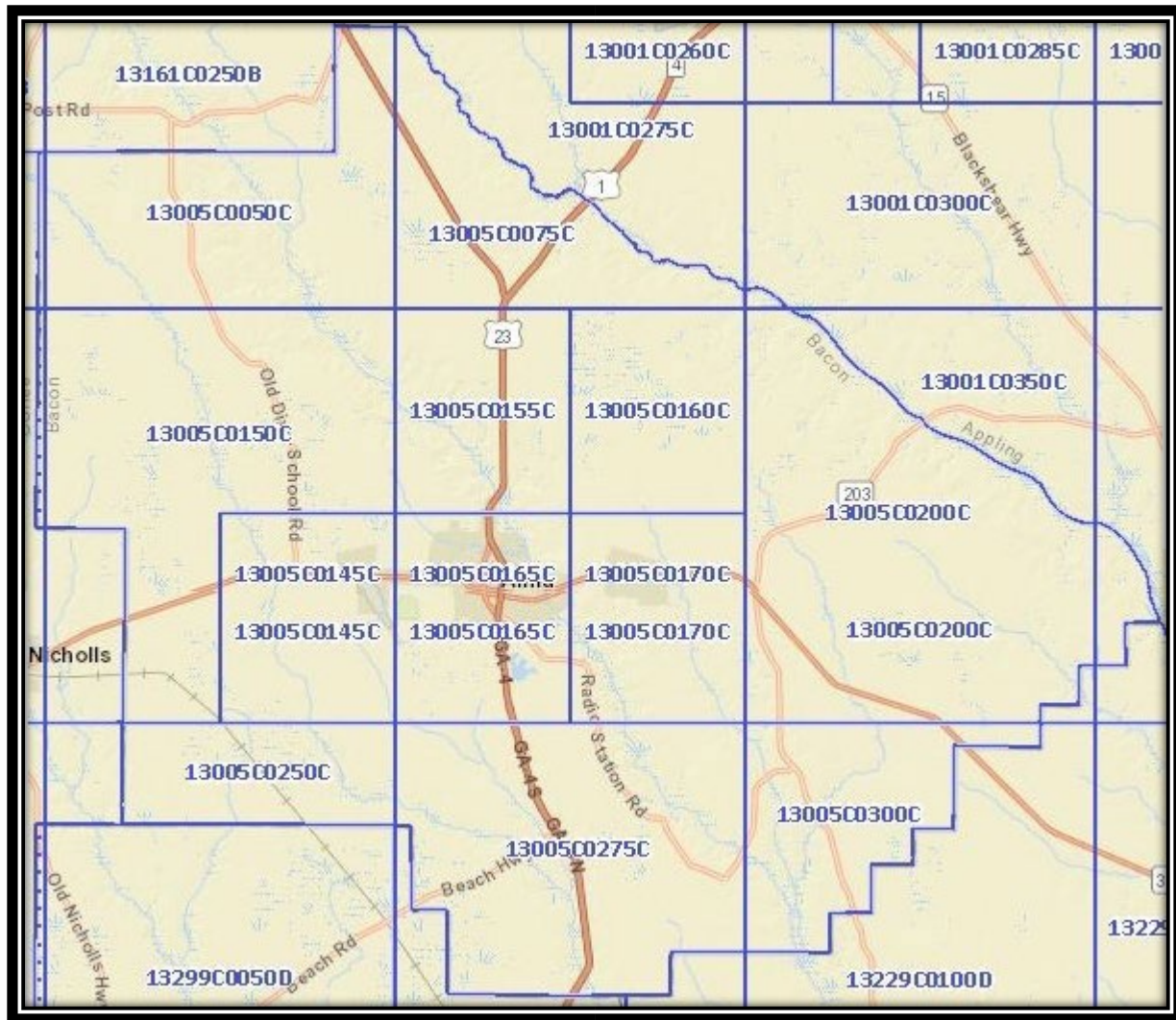
The risk is changing because the environment is changing, which means higher seas, new weather patterns, and stronger storms. As the atmosphere warms, more evaporation and water are available when it rains. A warmer atmosphere also means warmer oceans, which can intensify flooding from hurricanes and offshore storms. The rising sea level also increases coastal flood risks, as higher seas mean more water is available when high tides and coastal storms cause flooding.

Bacon County and the City of Alma were part of the Presidentially declared disaster FEMA-DR-1883-GA, Severe Storms, Flooding, Tornadoes, and Straight-line Winds from March 26, 2009, through April 13, 2009. Damage to roads was caused by heavy rains that caused widespread flooding in the southern half of Georgia, with several counties receiving five to seven inches of rain and some areas receiving 10 inches. Bacon/Alma experienced flooding on ten dirt roads and two paved roads for 480 miles, affecting 160 culverts and two bridges. There were notable flood events in 2014 and some flooding in 2016 due to Hurricane Matthew. In September 2016, 72 properties in Bacon County were impacted by Hurricane Matthew.

According to the National Climatic Data Center (NCDC), nine flood events are reported (including Flash Floods and Heavy Rain) occurring in Bacon County between Jan 1, 1997, and Dec. 31, 2016. Five events were countywide; two affected the City of Alma, one involved the north portion of the county, and one was near the unincorporated community of Coffee in Bacon County (not to be confused with Coffee County, Georgia). Four were Flood events, four were Flash Flood events, and one was heavy rain. The estimated total property damage from these events was \$137,500. Real injuries were reported as zero.

The Historic Recurrence Interval is 4.73 years. This is a 21.3% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.6, the one-time 20-year frequency is 0.4, and the past 50-year frequency is 0.3 (see GEMA PDM Hazard Frequencies Table in Appendix D Section I).

Flood Insurance Rate Maps (FIRMs) in effect for Bacon County and the City of Alma include maps 13001C0375C, 13005C0050C, 13005C0075C, 13005C0145C, 13005C0150C, 13005C0155C, 13005C0160C, 13005C0165C, 13005C0170C, 13005C0200C, 13005C0250C, 13005C0275C, 13005C0300C, and 13005C0300C (effective Sept. 25, 2009; see index map below).



Flood Insurance Rate Maps for Bacon County and the City of Alma. Data Source: FEMA website.

The GMIS Critical Facilities Inventory Database Reports in Appendix F show that certain areas of Bacon County and the City of Alma fall within the Flood Hazard Area. Complete inventory information is contained at <https://www.itos.uga.edu/gema>. There is insufficient data to determine differences in flood hazard levels between Bacon County and the City of Alma hazards and/or risks.

Since the previous plan was completed, no changes have affected the community's overall vulnerability to this hazard.

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

In Worksheet 3A: Inventory of Assets (in Appendix A), we estimate that all of Bacon County and the City of Alma are equally vulnerable to this hazard. Due to the lack of data

broken down by jurisdiction, obtaining data at the jurisdictional level was impossible, so the estimates provided are for Bacon County and the City of Alma.

Many major flooding areas are adjacent to Big Satilla Creek, Hurricane Creek, and numerous other creeks and streams. In the City of Alma, certain areas surrounding Hurricane Creek and the drainage canals are subject to flooding. When and where floods will occur and the potential damage they will cause cannot be predicted with any high confidence due to the variation in the strength levels of the causes that may trigger the occurrence.

Damages from a 1% chance of flood could cause damage to 31 buildings. Thirty of those damaged would be residential and one commercial building, with a total of \$1 million in building damages. The overall building damage ratio is .17% of all structures' total building replacement costs estimated to be in the Special Flood Hazard. However, this estimate is likely high due to the lack of exact building locations within the parcel data. (see HAZUS Report in Appendix G).

No essential facility is anticipated to experience any loss. One hundred twenty-nine households (388 people) could potentially be displaced, with an estimated 91 requiring short-term shelter. This is due to the lack of exact building locations within the parcel data and not accounting for elevated structures. Approximately 1,904 tons of debris could be caused by flood, with 947 tons of finished material, 298 tons of structural material, and 660 tons of foundation material.

An estimated 100% of the Residential property in Bacon County (which includes the Residential properties in the City of Alma) may be affected, with a total market value of \$216,227,355. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (4,376 of 4,376) in Bacon County (which includes those property types in the City of Alma) may be affected, with a total market value of \$261,732,295. The values are based on the most recently available tax roll data for Bacon County and the City of Alma, provided by the Bacon County Tax Assessor's Office.

Damage to crops is not considered in any of these figures. According to the most recent estimate (2019) available on the University of Georgia's GeorgiaData website (www.georgiadata.org), the total farm gate value of agricultural production in Bacon County is \$131,117,981.

Many individuals do not have transportation and thus are susceptible to weather hazards. It is imperative 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, significant consideration should be helping individuals, government, and non-profit organizations prepare for the pending flood hazard events.

The GMIS reports do not list any Repetitive Loss/NFIP properties in Bacon County or the City of Alma.

E. Land Use and Development Trends Related to Floods:

The river corridors are protected through zoning in the 100-year floodplain and up to 25 feet from the rested edge of the river. Wetland areas are protected by Corps of Engineers permitting requirements. Soil and Sedimentation Control Ordinances are in effect.

F. Multi-Jurisdictional Flood Differences:

Both local governments have some part of their jurisdiction located within a floodplain. According to a GIS analysis conducted by SGRC Staff, 8.1 percent of the area of Bacon County is within a flood zone, and 10.2 percent of the City of Alma is within a flood zone.

The City of Alma has a zoning ordinance and operates according to the 2012 International Building Code standards and amendments. Unincorporated Bacon County now does not have a building inspection program or zoning.

G. General Overall HRV Summary of Flood Events and Their Impact on the Community:

Floods can cause damage in any flood-prone area throughout Bacon County and the City of Alma. Of course, the cost of the damage and potential loss of life may be higher if the Flood were to occur in more densely populated areas. Damage caused by flooding can vary depending on flooding and severity, among other factors. Since the previous plan was completed, there have not been any changes in development that would affect the community's overall vulnerability to this hazard.

The Bacon County HMPUC recognizes Floods as the most likely natural hazard to occur and cause damage. They have developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the flood impact on Bacon County and the City of Alma. These are contained in Chapter 4, Section I.

Bacon County and the City of Alma completed a comprehensive mapping of environmentally sensitive areas and performed a historic resource survey. Since the previous plan was approved, no new changes would increase or decrease the community's overall vulnerability to this hazard.

Section II. Thunderstorms and Wind

A. Identification of Hazard:

The Bacon County HMPUC has chosen the threat of thunderstorms and wind as the second most likely hazard to occur and cause damage in Bacon County and the City of Alma 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.

In addition, hazard maps generated by The GMIS Critical Facilities Inventory for wind (see Appendix A Section II) were examined. The values on the map come from the predictive model of the GEMA database.

Thunderstorms and wind can be destructive and may occur at any time. Thunderstorms may develop quickly in Bacon County and the City of Alma due to inclement weather conditions, a passing front, or hurricane/tropical storm events. Wind events may occur on their own, due to inclement weather, a passing front, or as part of thunderstorms or hurricane/tropical storm events.

Thunderstorms are one of our atmosphere's most common weather products 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 be as damaging as a tornado. Lightning associated with these events may be one of the leading causes of wildfires in Bacon County. Lightning can also occur even if it is not raining.

NOAA Types of Thunderstorms:

THE SINGLE-CELL STORM:

Single-cell thunderstorms usually last from 20 to 30 minutes. An actual single-cell storm is quite rare because the gust in front of one cell triggers the growth of another.

Most single-cell storms are not usually severe. However, a single-cell storm can produce a brief severe weather event. When this happens, it is called a pulse severe storm. Their updrafts and downdrafts are slightly stronger and typically have hail that barely reaches severe limits and/or brief microbursts (a strong downdraft of air that hits the ground and spreads out). Brief heavy rainfall and occasionally a weak tornado are possible. Though pulse severe storms tend to form in more unstable environments than a non-severe single-cell storms, they are usually poorly organized and seem to occur at random times and locations, making them difficult to forecast.

THE MULTICELL CLUSTER STORM:

The multicell cluster is the most common type of thunderstorm. The multicell cluster consists of a group of cells, moving along as one unit, each cell in a different phase of the

thunderstorm life cycle. Mature cells are usually found at the cluster's center, with dissipating cells at the downwind edge of the cluster.

Multicell Cluster storms can produce moderate size hail, flash floods, and weak tornadoes.

Each cell in a multicell cluster lasts only about 20 minutes; the multicell cluster may persist for several hours. This storm is usually more intense than a single-cell storm but weaker than a supercell storm.

THE MULTICELL LINE STORM (SQUALL LINE):

The multicell line storm, or squall line, consists of a long line of storms with a continuous well-developed gust front at the leading edge of the line. The line of storms can be solid, or gaps and breaks in the line.

Squall lines can produce hail up to golf ball size, heavy rainfall, and weak tornadoes, but they are best known as the producers of strong downdrafts. Occasionally, a strong downburst will accelerate a portion of the squall line ahead of the rest of the line. This produces what is called a bow echo. Bow echoes can develop with isolated cells as well as squall lines. Bow echoes are easily detected on the radar but can be visually observed.

THE SUPERCELL STORM:

The supercell is a highly organized thunderstorm. Supercells are rare but pose a high threat to life and property. A supercell is similar to a single-cell storm because they have one main updraft. The difference in the updraft of a supercell is that the updraft is powerful, reaching estimated speeds of 150-175 miles per hour. The main characteristic which sets the supercell apart from the other thunderstorm types is the presence of rotation. When visible on radar, the rotating updraft of a supercell (called a mesocyclone) helps the supercell produce extreme severe weather events, such as giant hail (more than 2 inches in diameter, strong downbursts of 80 miles an hour or more, and strong to violent tornadoes.

The surrounding environment is a significant factor in the organization of a supercell. Winds come from different directions to cause rotation, and as precipitation is produced in the updraft, the strong upper-level winds blow the rainfall downwind. Hardly any rain falls through the updraft, so that storm can survive for long periods.

The leading edge of the precipitation from a supercell is usually light rain. Heavier rainfalls closer to the updraft with torrential rain and/or large hail immediately north and east of the main updraft. The area near the main updraft (typically towards the storm's rear) is preferred for severe weather formation.

Most thunderstorms and wind events in Bacon County and the City of Alma 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 happen in the afternoon and evening hours in the spring and summer.

The below scale shows the different forces of wind that may affect Bacon County and Alma:

Beaufort Wind Scale					
Developed in 1805 by Sir Francis Beaufort of England					
Force	Wind		WMO Classification	Appearance of Wind Effects	
	Kts	MPH		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	1-4	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	5-7	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, 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 13-20 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	39-46	Gale	Moderately high (13-20 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Whole trees in motion, resistance felt walking against wind
9	41-47	47-54	Strong Gale	High waves (20 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 (20-30 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 (30-45 ft) waves, foam patches cover sea, visibility more reduced	
12	64+	73+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	

B. Profile of Thunderstorm and Wind Events, Frequency of Occurrences, Probability:

The historical record for thunderstorms and wind is spotty, with many unreported or underreported events. All of Bacon County and the City of Alma are vulnerable to thunderstorms and wind due to their unpredictability and random occurrences, but the effects are usually minimal.

Bacon County HMPUC has witnessed many unreported and underreported cases of minimal to severe thunderstorms and wind events occurring within Bacon County and the City of Alma.

According to National Climatic Data Center information (NCDC), 79 recorded thunderstorm/wind events were reported in Bacon County, with 79 of them having occurred in the last 64 years, between August 4, 1957, and April 24, 2021. Two injuries were reported in the event that took place in 1991. Total property damage was reported as \$104,000. Damage included downed trees, power losses in certain areas, and roof damage. The events involved wind speeds between 45 and 61 knots. According to NCDC data, since the previous Hazard Mitigation Plan was completed, there have been 16 Thunderstorm/Wind events with trees, power poles, and lines down. Some of the storms caused damage to homes and cars. A thunderstorm on February 6, 2020, produced a storm in an adjacent city (Waycross, Ware County, Georgia). A storm on April 24, 2021, produced hail and straight-line winds causing damage to a single-wide mobile home, farm shelter, and an unoccupied tractor-trailer that was rolled over.

The Historic Recurrence Interval is 0.67 years. This is a 148.44% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 3.1, the past 20-year frequency is 2.9, and the past 50-year frequency is 1.82 (see GEMA PDM Hazard Frequencies Table in Appendix D Section I).

Bacon County has the same design wind speed of 200 miles per hour for a 3-second gust, as determined by the American Society of Civil Engineers (ASCE). In addition, Bacon County is in a special Hurricane Susceptible Region (see Appendix A).

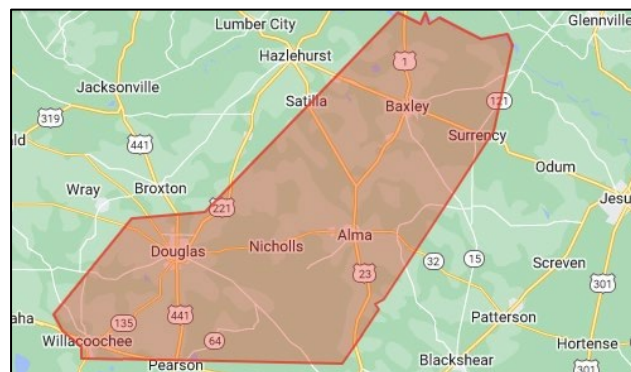
According to www.gema.ga.gov, the MEOW (Maximum Envelope of Wind) for a Georgia Coast Landfall for Bacon County ranges from 39-57 mph in the county (for a Category 1 hurricane with sustained winds of 75 mph and forward speed of 9 mph) to 109-126 mph in the eastern 1/3 of the county and 92-108 mph in the western 2/3 of the county (for a Category 4 hurricane with sustained winds of 144 mph and forward speed of 25 mph). (See Appendix A-III)

100% of Bacon County and the City of Alma are included in some wind hazard areas. As shown on the wind hazard map (see Appendix A, Section II), approximately the western two-thirds of Bacon County (including the City of Alma) is within the 90-99 mph wind speed area, and roughly the eastern third of Bacon County is within the 100-109 mph wind speed area. These wind speed areas correspond to basic wind speeds for a 3-second gust with a 50-year return interval contained in the 2012 International Building Code.

Since the previous plan was completed, notable thunderstorm/wind events have occurred. On 06/09/2018, severe thunderstorms and wind caused at least 20 large trees and power poles to blow down across roads in the NW and Western portions of the county. On 07-21-2018, about six trees were blown down, and power lines were blown down near the 4th Street exit of Highway 32 West during another severe thunderstorm. On 04/06/2019, an afternoon thunderstorm blew trees down, and a roof of a shelter was torn off in the 1600 block of Wolfpitt Church Road. On 04/19/2019, a very strong pre-frontal squall line caused widespread wind damage. Numerous trees and power lines were blown down in Alma. On 06/20/20, a late-day squall line blew a tree down near 200 Camp

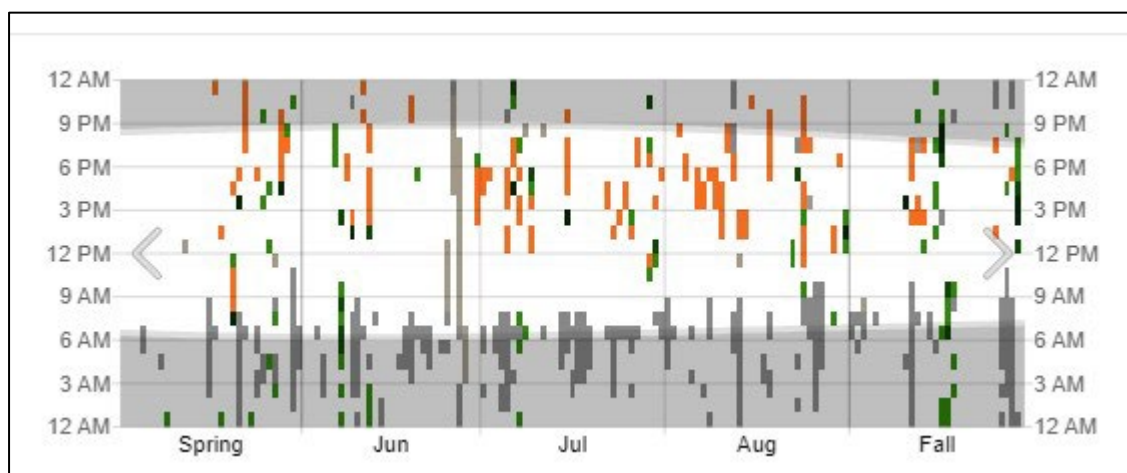
Ground Church Road Multiples trees and power lines were blown down across the county on 02/06/2020 after a pre-frontal squall line caused wind gusts of 40-76 mph.

The final thunderstorm recorded by NOAA on the Climatic Storm Events Database was on 4/24/2021. However, on 08/9/2022, the National Weather Service recorded an event that produced a tornado warning and a severe thunderstorm that produced 60 mph wind gusts and penny-size hail (<.75). See the map below of the storm line.



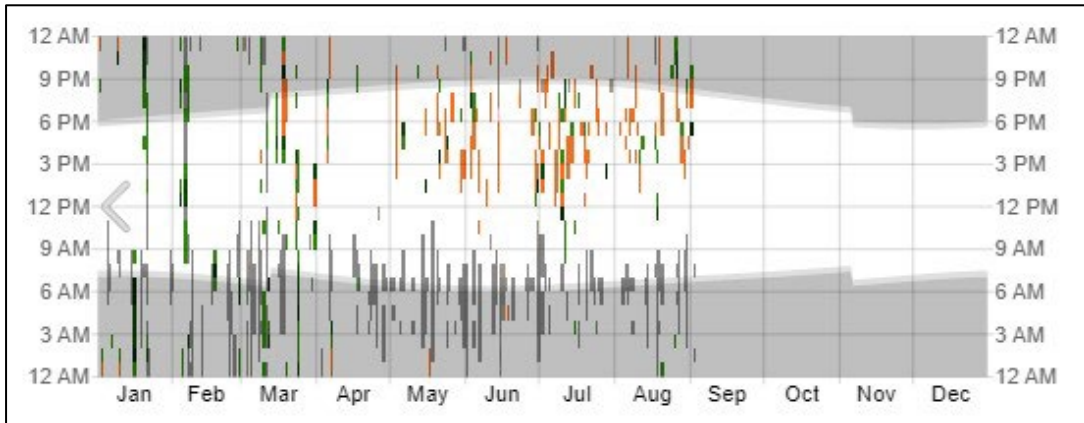
(<https://weatherspark.com>)

Weatherspark.com registered thirty-eight summer thunderstorms from 06/02/2021 thru August 31, 2021, producing mist to heavy rain. Hail was not reported in those events. Below you will find a measurement of the weather observed during this period at the Bacon County Airport.

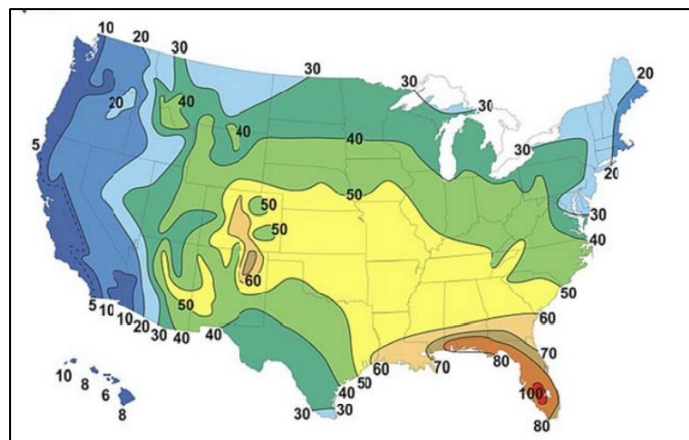


© WeatherSpark.com

The 2022 chart shows thunderstorms at the Bacon County Airport. As you can see, there have been many thunderstorms, but no summary exists at this time. See below.



The map below shows the average number of days with thunderstorms in the eastern United States, which affects Bacon County. (Source: NOAA)



C./D. Inventory of Assets Exposed and Potential Loss to Thunderstorms and Wind:

The threat of thunderstorms and wind is constant in Bacon County and the City of Alma due to the unpredictability and random occurrence of the hazard. The potential damage they will cause is not easy to predict when and where it will occur.

In Worksheet 3A: Inventory of Assets (in Appendix A), we estimate that all of Bacon County and the City of Alma are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, obtaining these data at the jurisdictional level was impossible, so the estimates provided are for Bacon County and the City of Alma.

An estimated 100% of the Residential property in Bacon County (which includes the Residential properties in the City of Alma) may be affected, with a total market value of \$216,227,355. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (4,376 of 4,376) in

Bacon County (which includes those property types in the City of Alma) may be affected, with a total market value of \$261,732,295. The values are based on the most recently available tax roll data for Bacon County and the City of Alma, provided by the Bacon County Tax Assessor's Office.

According to the National Climatic Data Center (NCDC), since the last HMP in 2018, there have been nine thunderstorm/wind events since 2016. On 02/07/17, 05/04/17, 06/09/18, 07/21/18, 04/06/19, 04/19/19, 06/20/19, and 02/06/202, strong winds, strong storms, and severe storms passed through areas of Bacon County. During these storms, numerous trees were down, power lines were blown down, and roofs were damaged. On 04/24/21, straight wind damaged a single-wide mobile home, farm shelter, and an unoccupied tractor-trailer rolled over. Fallen tree limbs and debris damaged other structures throughout the county. There were no injuries or costs reported.

Damage to crops is not considered in any of these figures. According to the most recent estimate (2019) available on the University of Georgia's GeorgiaData website (www.georgiadata.org), the total farm gate value of agricultural production in Bacon County is \$131,117,981.

E. Land Use and Development Trends Related to Thunderstorms and Wind:

No other trends regarding land use/development and thunderstorm/wind hazards have been identified.

F. Multi-Jurisdictional Thunderstorm and Wind Differences:

Bacon County and the City of Alma may be equally affected by thunderstorms and wind. No differences between the two jurisdictions in this regard have been determined.

G. Overall HRV Summary of Thunderstorm/Wind Events and Their Impact on the Community:

Thunderstorms and wind can cause damage at any place, at any time, throughout Bacon County and the City of Alma. Of course, the cost of the damage and potential loss of life may be higher if thunderstorms and wind occur in populated areas and municipalities as opposed to if they were to occur in more rural sections of Bacon County. However, most thunderstorms and wind passing through the area cause minimal damage.

The Bacon County HMPUC recognizes thunderstorms and wind as the second most likely natural hazard to occur and cause damage. They have developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen thunderstorms and wind impact on Bacon County and the City of Alma. These are contained in Chapter 4, Section II.

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

Section III. Wildfire

A. Identification of Hazard:

The Bacon County HMPUC has chosen the threat of wildfire as the third most likely hazard to occur and cause damage in Bacon County and the City of Alma. Based on experience, FEMA described methodology and other factors.

Historical data have been examined from various sources (see Appendix A Section III), the National Climatic Data Center (see Appendix F), and local history and personal accounts to determine the frequency of events.

In addition, hazard maps generated by The GMIS Critical Facilities Inventory for wildfire (see Appendix A Section III) were examined. Complete inventory information is contained at <https://www.itos.uga.edu/gema>. These map values come from the predicted model of the GEMA database.

Nationwide, approximately 80 percent of wildfires are caused by people. Smoking in forested areas and improperly extinguishing campfires are two typical wildfire causes. Lightning is also a significant igniter of fires. In 2021 there were 7.1 acres burned in the U.S., compared to 10.1 million in 2020. On November 26, 2021, three states reported four large fires, including Alabama, which had two fires, and California and Montana, which each had one. Georgia had 2,129 wildfires in 2021, and 11.1 acres of land were burned. Although wildfires occur naturally and serve important functions for forest ecosystems, they threaten human life and property. In Bacon County, Wildfires can have an economic impact in Bacon County, where a significant portion of the land is used for forestry; periodic controlled burns may be necessary to maintain healthy forest ecosystems.

Low humidity, lack of recent precipitation (or drought conditions), wind speed, and temperature are weather conditions that favor the kindling and spread of forest or brush fires. Dead fuel moisture allows forest or brush fires to kindle and spread with the above. Much of Bacon County and some areas in and near the City of Alma are wooded with commercial and free-growing pine trees and other trees. These trees can and do catch fire frequently at small and large events.

Wildfires often go unnoticed. They spread quickly and can change direction rapidly, igniting brushes, trees, and homes. Also, fire may smoke for weeks in the underbrush and then ignite some distance away from where it started, resisting efforts to eradicate it and spreading quickly throughout the area. Surface fires are the most common type of wildfires, moving slowly and burning along the forest floor, killing and damaging

vegetation. Ground Fires, another type, are usually started by lightning and burn on or below the forest floor through the root systems. The final type, Crown Fires, is spread by wind moving quickly along the tops of trees.

B. Profile of Wildfire Events, Frequency of Occurrences, Probability:

Minor to major wildfires' historical record is spotty, with many unreported or underreported events. Bacon County and the City of Alma are vulnerable to wildfires due to their unpredictability and random occurrences. The effects can range from minimal damage to severe and widespread damage. Wildfires can occur at any time of the year.

Members of the Bacon County HMPUC have witnessed many unreported and underreported cases of minor to major wildfire events occurring in Bacon County and the City of Alma, some lasting for days, weeks, or months.

According to the Georgia Forestry Commission, the leading causes of these fires were debris burning (44%) and Incendiary or Arson (21%). Over the past five years, 50% of debris fires originated from escapes from household or residential debris burning.

In 2011 large wildfires burned over 22,000 acres in Bacon County, and this caused the annual acreage burned to increase by about ten times the typical average; at the end of the fiscal year 2013, considered a wet year, 26 wildfires with an average of 4 acres burned were reported. The median for these two extremes is 64 wildfires, with an average of 112 acres burned. This would represent what the community might expect in future years. Another major wildfire event occurred on July 29, 2014, when a wildfire broke out over Bacon County after a few days of hot temperatures and heat advisories. About 200 firefighters were battling a 600-acre wildfire north of Alma along Bennett Still Highway. Crews reported that the fire was 80 percent contained. Twelve homes were threatened. One forest service crew member was taken to the hospital due to a heat-related illness. In 2018 there were 12 wildfires, with seven of those due to debris fires.

Over the past fifty years (January 2019 Community Wildfire Protection Plan), Bacon County has averaged 65 reported wildland fires annually; almost 55% have occurred during December, February, March, and April. These fires have burned an average of 403 acres annually. Of this annual acreage burned, 63% was lost during February, March, April, and May. Since the outdoor burning permit law was created about 30 years ago, the number of fires has decreased. During the last ten years, 2008-2018, the average number of wildfires annually has dropped to 34. During these years, the average number of acres burned increased to over 2400 acres burned annually. 157.28 acres was the largest fire, which was incendiary. That was the largest fire of 2018

The following chart shows how many total fires, including homes, wildfires, etc., were in Bacon County from 2008 through 2017. During this period, 2,408.04 acres burned, with an average of 34 fires each year.

Acreage Burned /Number of Fires For Bacon County For FY 2008-2017		
Year	Acreage Burned	Number of Fires
2008	54.09	20
2009	120.88	44
2010	50.76	31
2011	22,485.60	102
2012	159.40	45
2013	105.47	26
2014	24.120	9
2015	803.42	18
2016	133.51	11
2017	143.19	41
Average	2,408.04	34

(Source: Georgia Forestry Commission)

The Georgia Forestry Commission wildfire records show that in FY2014 – FY2018, 19 homes were lost or damaged by wildfire in Bacon County, resulting in estimated losses of \$522,500. According to reports, an additional 21 homes have been directly or indirectly threatened by these fires. Additionally, one vehicle valued at \$1500 was lost. This is a substantial loss of non-timber property attributed to wildfires in Bacon County.

The leading cause of these fires was debris burning causing 44% of the fires and 40% of the acres to burn. Incendiary or arson was the next leading cause, with 21% of the fires and 24% lost acres. Over the past five years, more detailed records show that 50% of the debris fires originated from escapes from household or residential debris burning.

With the best available information in Bacon County (including the City of Alma), we have recorded an average of 65 wildland fires per year in 50 years, with a Historic Recurrence Interval of 0.02 years. This is a 5750% Historic Frequency Chance per year. The past tenyear Record Frequency Per Year is 18.4, the past 20-year frequency is 76.6, and the past 50-year frequency is 287.5 (see GEMA PDM Hazard Frequencies Table in Appendix D Section I). To the best of our knowledge, approximately 325 wildfire events have occurred in Bacon County (including the City of Alma) since the previous Hazard Mitigation Plan was adopted.

Most of Bacon County has a wildfire hazard score of 1. Some areas throughout the county have a score of 0. Limited areas around the central area of the county, especially around the north side of the City of Alma, have a hazard score of 2. No site has a score higher than 2. A map of wildfire hazard areas with critical facilities is shown in Appendix A, and the Community Wildfire Protection Plan is included in Appendix C.

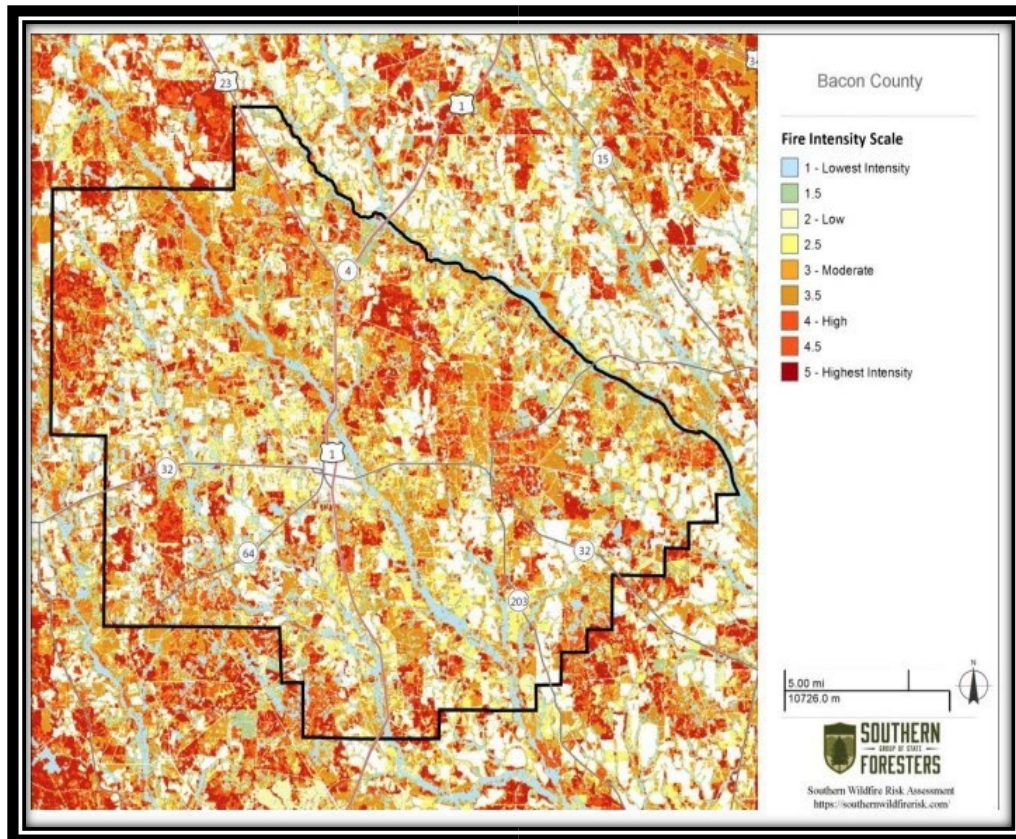
The Bacon County Fire Department and the Georgia Forestry Commission, in their “Community Wildfire Protection Plan” (see Appendix C Section I), have determined through Hazard ratings that the following areas have a Low, Moderate, or High level of probability concerning wildfire:

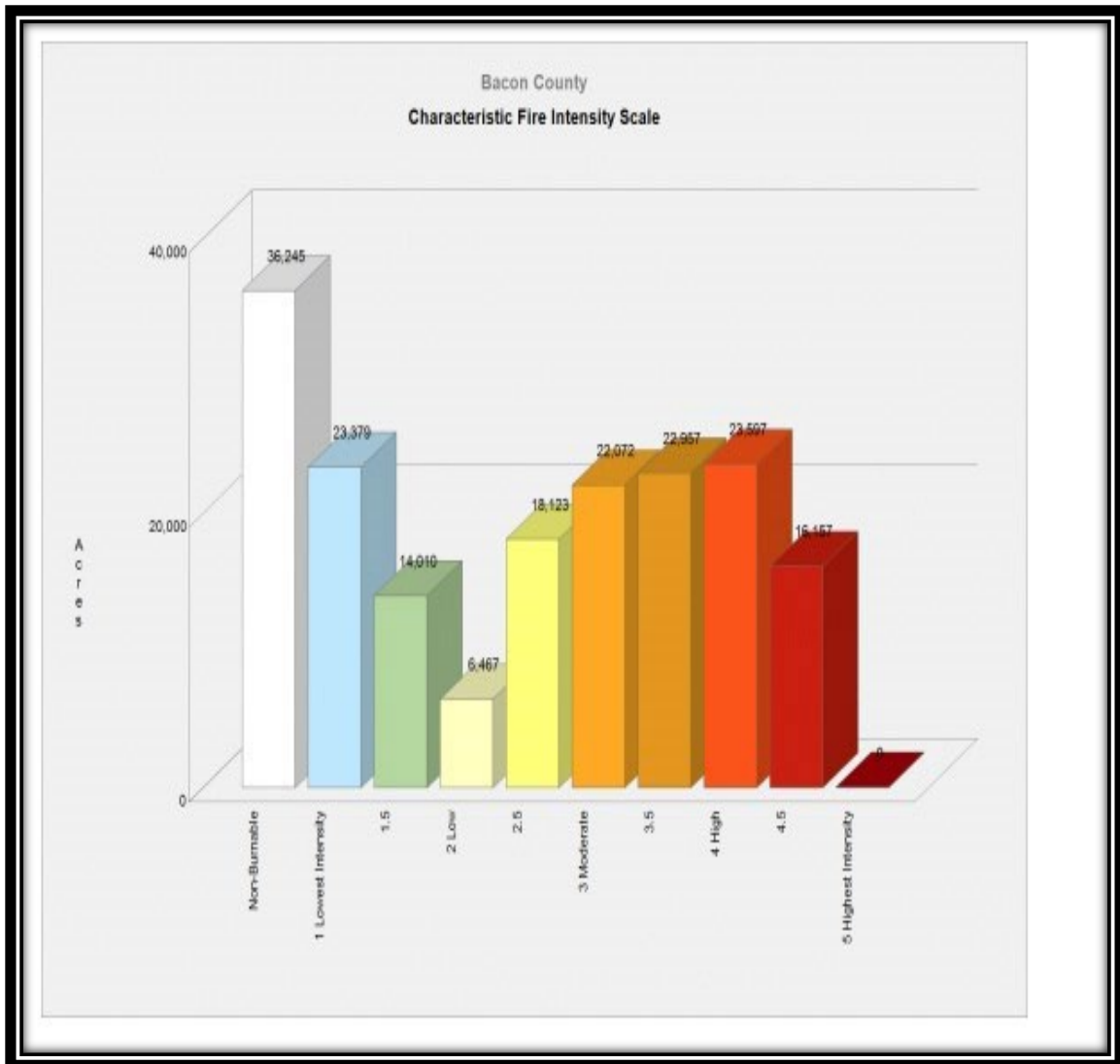
City of Alma (Low)
Bennett Still (Moderate)
New Lacy (High)
Warnock (High)
Sessoms (Extreme)
Taylortown (Extreme)
Ware (Extreme)

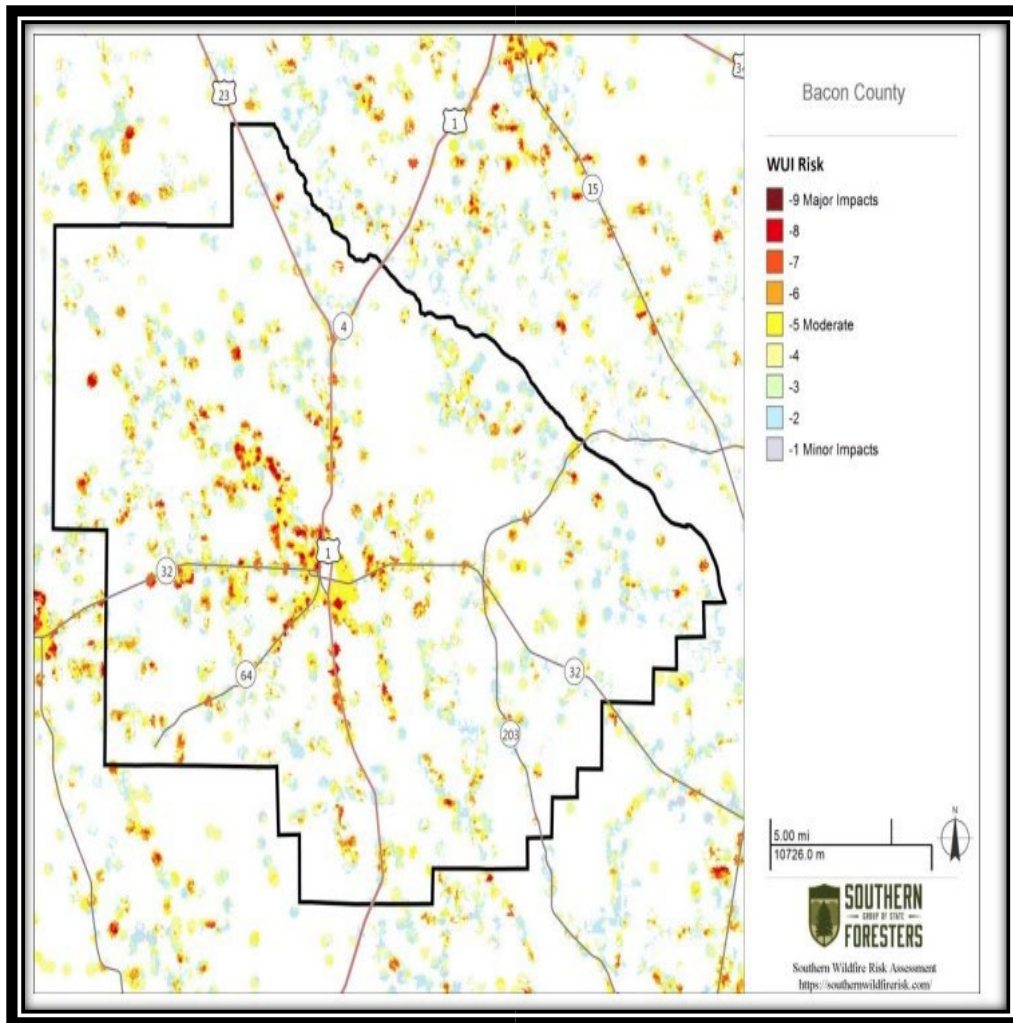
As seen from the above information, several data sources have different determinations of wildfire risks. However, all places are certain areas of Bacon County and the City of Alma within wildfire hazard areas.

Since the previous plan was completed, no changes have affected the community’s overall vulnerability to this hazard.

The maps below show the Fire Intensity Scale, the Wildland Urban Interface (WUI) Risk map, and the WUI Response Index for Bacon County.







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

From a fire management perspective, the Wildland-Urban Interface (WUI) is commonly defined as an area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. As fire depends on a particular set of conditions, the National Wildfire Coordinating Group has defined the wildland-urban interface as a set of conditions that exist in or near areas of wildland fuels, regardless of ownership. This set of conditions includes the type of vegetation, building construction, accessibility, lot size, topography, and other factors such as weather and humidity. When certain combinations present these conditions, some communities are more vulnerable to wildfire damage than others. This “set of conditions” method is perhaps the best way to define wildland-urban interface areas when planning wildfire prevention, mitigation, and protection activities.

There are three major categories of the wildland-urban interface. These areas may be at risk from wildfire, depending on the conditions present. A wildfire risk assessment can determine the level of risk. These three categories are:

- 1) “Boundary” Wildland-Urban Interface is characterized by areas of development where homes, especially new subdivisions, press against the public and private wildlands, such as private or commercial forest land or public forests or parks. This is the classic type of wildland-urban interface, with a clearly defined boundary between the suburban fringe and the rural countryside.
- 2) “Intermix” Wildland-Urban Interface areas are where improved property and/or structures are scattered and interspersed in wildland areas. These may be isolated rural homes or sites just beginning to transition from rural to urban land use.
- 3) “Island” Wildland-Urban Interface, also called occluded interface, are wildland areas within predominantly urban or suburban areas. As cities or subdivisions grow, islands of undeveloped land may remain, creating remnant forests. Sometimes these remnants exist as parks or land that cannot be developed due to site limitations, such as wetlands.

An estimated 100% of the Residential property in Bacon County (which includes the Residential properties in the City of Alma) may be affected, with a total market value of \$216,227,355. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (4,376 of 4,376) in Bacon County (which includes those property types in the City of Alma) may be affected, with a total market value of \$261,732,295. The values are based on the most recently available tax roll data for Bacon County and the City of Alma, provided by the Bacon County Tax Assessor’s Office.

Damage to crops is not considered in any of these figures. According to the most recent estimate (2019) available on the University of Georgia’s GeorgiaData website (www.georgiadata.org), the total farm gate value of agricultural production in Bacon County is \$131,117,981.

E. Land Use and Development Trends Related to Wildfire:

Development continues in Bacon County and the City of Alma, with a large amount of new construction taking place in areas bordered by pine tree production and other naturally growing trees. More and more people are making their homes in woodland near forests or rural areas. These homeowners enjoy the beauty of the environment but face the real danger of wildfires. This is not a new phenomenon, but it has always been the case. The trend for this is to continue.

Georgia law requires that a permit be issued for most types of outdoor burning. Users can contact the local Georgia Forestry Commission or visit www.gatrees.org to apply online.

If conditions are favorable for burning, a permit will be granted. According to Georgia law, burning without a permit is a misdemeanor punishable by fines up to \$1,000.

F. Multi-Jurisdictional Wildfire differences:

All of Bacon County and the City of Alma may be affected by wildfire. Geographical differences are not dependent on jurisdiction as on land use and fire district resources. A paid force staffs the Alma-Bacon County Main Fire Station. Volunteer staff at six Fire Department properties in Bacon County. The following are the ISO classes of fire districts in the community:

Station 1: Alma-Bacon County Main:	Class 5
Station 2: Bennett Still:	Class 9
Station 3: New Lacey:	Class 9
Station 4 Sessoms:	Class 9
Station 5: Taylor Town:	Class 9
Station 6: Ware:	Class 9
Station 7: Warnock:	Class 9
Station 8: Scuffletown	Class 9

G. General Overall HRV Summary of Wildfire Events and Their Impact on the Community:

Wildfires can cause damage in any wildfire-prone area, at any time, throughout Bacon County and the City of Alma. The cost of the damage and the potential loss of life may be higher if a wildfire occurs in more densely populated areas. The effects could range from minimal damage to severe and widespread damage. Wildfires can occur at any time of the year.

The Bacon County HMPUC recognized wildfire as the third most likely natural hazard to occur and cause damage. They have developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen wildfire impact on Bacon County and the City of Alma, contained in Chapter 4, Section III.

Bacon County and the City of Alma have comprehensively mapped the community's environmentally sensitive areas and performed a historic resource survey. The County and City have completed their Community Wildfire Protection Plan, which contains goals and objectives to decrease the community's overall vulnerability to this hazard. Since the previous plan was approved, there have been no new changes in development or decrease in the community's overall vulnerability to this hazard.

Section IV.

Drought

A. Identification of Hazard:

The Bacon County HMPUC has chosen the threat of a drought as the fourth most likely hazard to occur and cause damage in Bacon County and the City of Alma 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. In addition, hazard maps generated by The GMIS Critical Facilities Inventory were examined.

Drought is usually the result of several factors that gradually increase dry conditions in the community until they reach a severe and extreme level. These factors could be weather patterns, lack of rainfall, wind conditions, lack of water from rivers and upstream areas, etc.

Although drought is usually associated with the summer months due to its more visible effects, it can occur at any time. Its effects can last throughout the year and continue from year to year. These effects may range from agricultural losses to 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 and community residents whose water supplies are restricted or cut off (especially those using individual wells). Many residents of Bacon County and the City of Alma have shallow wells that often go dry during drought periods, thus leaving those residents without water for extended periods.

The **Palmer Z Index** measures short-term drought on a monthly scale. The **Palmer Crop Moisture Index (CMI)** measures short-term drought weekly and quantifies drought's impacts on agriculture during the growing season.

The **Palmer Drought Severity Index (PDSI)** (known operationally as the **Palmer Drought Index (PDI)**) attempts to measure the duration and intensity of the long-term drought-inducing circulation patterns. Long-term drought is cumulative, so the intensity of drought during the current month is dependent on the current weather patterns plus the cumulative patterns of previous months. Since weather patterns can change practically overnight from a long-term drought pattern to a long-term wet pattern, the PDSI (PDI) can respond fairly rapidly.

The hydrological impacts of drought (e.g., reservoir levels, groundwater levels, etc.) take longer to develop, and it takes longer to recover from. The **Palmer Hydrological Drought Index (PHDI)**, another long-term drought index, was designed to quantify these hydrological effects. The PHDI responds more slowly to changing conditions than the PDSI (PDI).

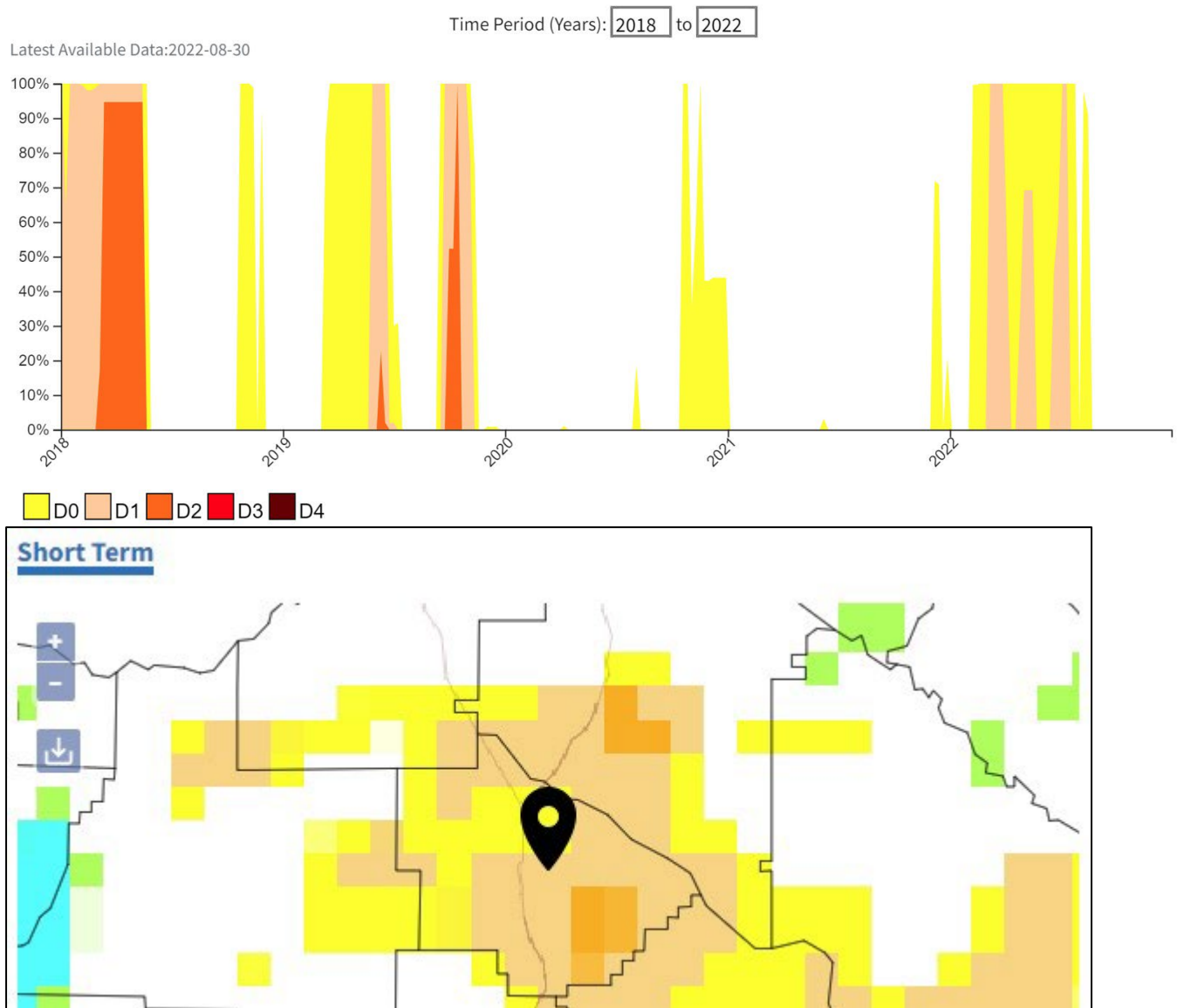
The U.S. Drought Monitor (<http://droughtmonitor.unl.edu>), established in 1999, is a weekly map of drought conditions produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln. The U.S.

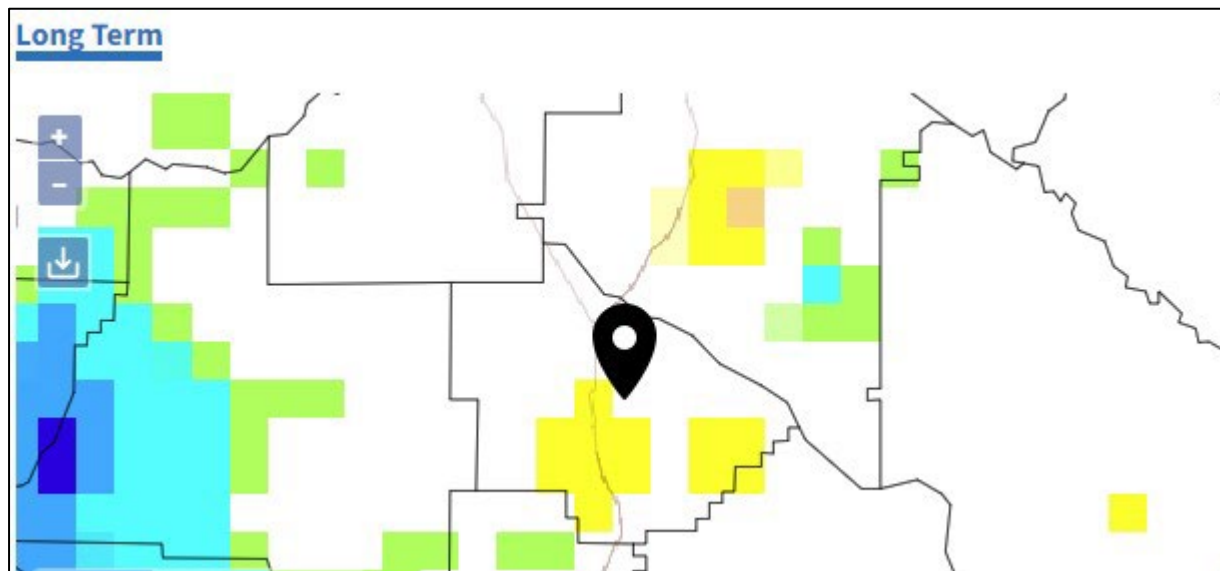
Drought Monitor website is hosted and maintained by the NDMC. The Drought Monitor summary map identifies general drought areas, labeling droughts by intensity, with D1 being the least intense and D4 being the most intense. Descriptions of these categories are provided in the tables below (source:

<http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx>)

(All maps below are from information obtained from the Drought Monitor on 08/23/2022, and other maps are located in Appendix A.IV).

The U.S. Drought Monitor (USDM) is a national map released every Thursday, showing parts of the U.S. that are in drought. The USDM relies on drought experts to synthesize the best available data and work with local observers to interpret the information. The USDM also incorporates ground truthing and information about how drought is affecting people, via a network of more than 450 observers across the country, including state climatologists, National Weather Service staff, Extension agents, and hydrologists. [Learn more.](#)





There have been cases in Bacon County and the City of Alma where some drought conditions have persisted for years.

B. Profile of Drought Events, Frequency of Occurrences, Probability:

The historical record for drought is spotty at best, especially before 2000, with many unreported or underreported drought events. Bacon County and the City of Alma are vulnerable to drought due to their unpredictability and widespread coverage. The effects vary depending on the severity of the drought and the length of time. Bacon County HMPUC has witnessed many unreported and underreported cases of drought occurring within Bacon County and the City of Alma.

According to National Climatic Data Center information (see Appendix G), one drought report occurred in Bacon County (including the City of Alma) between 01/01/1950 and 09/16/2022. However, the U.S. Drought Monitor (<http://droughtmonitor.unl.edu>) offers more complete data, reporting that some level of drought occurred in Bacon County in the majority of years between 2000 and 2022. According to the U.S. Drought Monitor, 1,184 drought events occurred from 2000 to 2022.

The historic recurrence interval is 0.04, and the historic frequency chance per year is 2368.00%. The past 10-year record frequency per year is 55.7, the 20-year frequency is 108, and the 50-year frequency is 108. (However, it should be noted that no drought events are recorded before 2000 in the available data.) While most of these events were Do (Abnormally Dry) and D1 (Moderate Drought), there were D4 events (Exceptional Drought) reported in January and February of 2012, as well as D3 events (Extreme Drought) in 2000, 2007, 2011, and 2012 and many years with some instance of D2 events (Severe Drought). Since 2012, 16 days have been recorded as D2 events.

Since the previous plan was completed, no changes have affected the community's overall vulnerability to this hazard.

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

The threat of drought is constant in Bacon County and the City of Alma due to the unpredictability and widespread coverage of the hazard. Drought events tend to be areawide and will likely not be limited to certain community areas. However, the effect on residents will depend on the infrastructure and services available (for example, the depth of wells).

An estimated 100% of the Residential property in Bacon County (which includes the Residential properties in the City of Alma) may be affected, with a total market value of \$216,227,355. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (4,376 of 4,376) in Bacon County (which includes those property types in the City of Alma) may be affected, with a total market value of \$261,732,295. The values are based on the most recently

available tax roll data for Bacon County and the City of Alma, provided by the Bacon County Tax Assessor's Office.

Damage to crops is not considered in any of these figures. According to the most recent estimate (2019) available on the University of Georgia's GeorgiaData website (www.georgiadata.org), the total farm gate value of agricultural production in Bacon County is \$131,117,981.

Agricultural production, especially the blueberry harvest, is the most critical sector of the Bacon County/Alma economy. This economic asset is particularly vulnerable to drought due to the potential reduction in crop harvest that drought could cause.

E. Land Use and Development Trends Related to Drought:

The dry conditions caused by drought can be conducive to a further hazard covered in this Plan, namely wildfire. During periods of drought, the community must be on high alert for wildfire hazards. This hazard is exacerbated because new construction in Bacon County and the City of Alma continues in areas bordered by pine tree production and other naturally growing trees. These homeowners enjoy the beauty of the environment but face the real danger of wildfires. This is not a new phenomenon, but it has always been the case. The trend for this is to continue. See Chapter 2, Section III (Wildfire) for more specific information.

F. Multi-Jurisdictional Drought Differences:

Due to the area-wide nature of drought events, all of Bacon County and the City of Alma are at equal risk. However, households in unincorporated Bacon County are served by well water while the City of Alma operates its water and sewer systems. According to their website, the City of Alma is permitted to withdraw up to 1.5 million gallons daily. (http://www.cityofalmaga.gov/public_works/water_and_sewer_division.php)

Due to the capacity of the municipal water system, it is predicted that households in the City of Alma will be better protected from drought-related water shortages than households in the unincorporated county, which must rely on their local wells for water. Data regarding the depth of individual wells are not currently available.

G. General Overall HRV Summary of Drought Events and Their Impact on the Community:

Drought can cause damage at any place, at any time, throughout Bacon County and the City of Alma. The cost of the damage may be higher if the drought occurs at certain critical times of the year, which would exacerbate its impact on agricultural production, especially the blueberry harvest.

The Bacon County HMPUC recognizes drought as the fourth most likely natural hazard to occur and cause damage. They have developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impact of drought on Bacon County and the City of Alma. These are contained in Chapter 4, Section IV. Due to continued population growth, increased water usage can strain the municipal water system and public and private wells, becoming dry under drought conditions. Since the previous plan

was approved, there have been no new community development changes that would increase or decrease the community's overall vulnerability to this hazard.

Section V. Tornado

A. Identification of Hazard:

The Bacon County HMPUC has chosen a tornado threat as the fifth most likely hazard to occur and cause damage in Bacon County and the City of Alma 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) and local history and personal accounts, 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 to the ground. Tornadoes are one of nature's most destructive forces. Tornadoes can generate wind speeds of up to 318 miles per hour. A tornado's damage path can be more than a mile wide and fifty miles in length.

ENHANCED FUJITA WIND DAMAGE SCALE

EF SCALE		
EF RATING	3 SECOND GUST (MPH)	DESCRIPTION
0	65-85	Light Damage. Some damage to chimneys; branches broken off trees, shallow-rooted trees uprooted, and signboards damaged.
1	86-110	Moderate damage. Roof surfaces peeled off; mobile homes pushed foundations or overturned; moving autos went off the road.
2	111-135	Considerable damage. Roofs torn from frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light objects become projectiles.
3	136-165	Severe damage. Roofs and some walls torn from well-constructed houses; trains overturned; most trees in forested areas uprooted; heavy cars lifted and thrown.
4	166-200	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown some distance; cars thrown; large missiles generated.
5	Over 200	Incredible damage. Substantial frame houses lifted off foundations, carried considerable distances, and disintegrated; auto-sized missiles airborne several hundred feet or more; trees debarked.

Tornadoes may occur at any time of year and may develop quickly. Tornadoes can occur due to inclement weather conditions, a passing front, or as part of thunderstorms or hurricane/tropical storm events. Tornado season in Georgia is typically from March through August. Tornadoes are most likely to occur between 3:00 p.m. and 9:00 p.m.

Hurricane/tropical cyclone season (June 1 to November 30th) is another time when tornadoes are more likely to occur. The path and severity of a tornado cannot be determined in advance. The best defense is to heed tornado warnings and seek appropriate shelter when a tornado has been sighted in the area or when conditions conducive to a tornado are present.

B. Profile of Tornado Events, Frequency of Occurrences, Probability:

The historical record for tornadoes is spotty, with many unreported or underreported tornado events. Bacon County and the City of Alma are vulnerable to tornadoes due to their unpredictability and random occurrences. The effects of this hazard are usually substantial and occur with little to no warning. Bacon County HMPUC has witnessed many unreported and underreported tornado events occurring within Bacon County and the City of Alma.

According to the National Climatic Data Center information (see Appendix F), there are 18 reports of tornadoes occurring in Bacon County (including the City of Alma) between 01/01/1957 and 12/31/2016. Of these, there were at least seven cases that were considered major events, with property damage valued at between \$10,000 and \$3,000,000. Damage included downed trees, damaged buildings and vehicles, power outages, and some homes destroyed. The costliest event (\$3 million) occurred on 12/2/2009, when an EF-1 tornado struck the community of Sessoms Station. However, no injuries were reported from this event. One tornado event occurred on January 4, 2015, an EF-1 tornado struck the Rockingham community, resulting in 2 injuries.

The Historic Recurrence Interval for tornadoes is 4.13 years. This is a 24.24% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.1, the past 20-year frequency is 0.7, and the 50-year frequency is 1.2 (See GEMA PDM Hazard Frequencies Table in Appendix D Section I).

Since the previous plan was completed, no changes have affected the community's overall vulnerability to this hazard.



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

The threat of tornadoes is constant in Bacon County and the City of Alma due to their unpredictability and random occurrence. In GEMA Worksheet 3A: Inventory of Assets, in Appendix A, Section I, we estimate that Bacon County and the City of Alma are equally vulnerable to tornadoes.

An estimated 100% of the Residential property in Bacon County (including the properties in the City of Alma) may be affected, with a total market value of \$216,227,355. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (4,376 of 4,376) in Bacon County (which includes those property types in the City of Alma) may be affected, with a total market value of \$261,732,295. The values are based on the most recently available tax roll data for Bacon County and the City of Alma, provided by the Bacon County Tax Assessor's Office.

According to the inventory database reports and maps, all of the 153 Critical Facilities and Infrastructure for Bacon County (including the City of Alma) are located in areas affected by tornadoes. The total value of these 115 Critical Facilities is \$410,494,980, and a content value of \$31,024,007.

Damages from an EF-3 hypothetical tornado with an 1,800' wide damage path through Alma, 348 total buildings would be damaged, with \$33.5 million in building damages. There would be no major damage to essential facilities.

Damage to crops is not considered in any of these figures. According to the most recent estimate (2019) available on the University of Georgia's GeorgiaData website (www.georgiadata.org), the total farm gate value of agricultural production in Bacon County is \$131,117,981.

E. Land Use and Development Trends Related to Tornadoes

No other land use and development trends related to tornadoes have been identified.

F. Multi-Jurisdictional Tornado Differences:

All of Bacon County and the City of Alma may be equally affected by tornadoes. No differences in hazard levels between the two jurisdictions have been identified. However, due to the higher population density within the City of Alma, a direct hit from a powerful tornado would likely cause more damage and casualties than in the less populated areas of unincorporated Bacon County.

G. General Overall HRV Summary of Tornado Events and Their Impact on the Community:

Tornadoes can cause damage anywhere, anytime, throughout Bacon County and the City of Alma. The cost of the damage and potential loss of life may be higher if the tornado occurs in more densely populated areas than in sparsely populated or unpopulated areas. Most tornadoes do cause substantial damage.

The Bacon County HMPUC recognizes tornadoes as the fifth most likely natural hazard to occur and cause damage. They have developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen the impact of tornadoes on Bacon County and the City of Alma. These are contained in Chapter 4, Section V. Since the previous plan was approved, no new changes would increase or decrease the community's overall vulnerability to this hazard.

Section VI. Hurricanes/Tropical Storms

A. Identification of Hazard:

The Bacon County HMPUC has chosen the threat of hurricanes/tropical storms as the sixth most likely hazard to occur and cause damage in Bacon County and the City of Alma 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) and local history and personal accounts, to determine the frequency of events. For further information, see the HAZUS Report in Appendix G.

Tropical Cyclones are the general term for all circulating weather systems over tropical water. Tropical Cyclones are destructive and can cause significant damage and loss of life. They are divided into four major types: Tropical Disturbances, Tropical Depressions, Tropical Storms, and Hurricanes.

A tropical disturbance is a discrete tropical weather system of apparently organized convection originating in the tropics or subtropics. It has a non-frontal migratory character and maintains its identity for 24 hours or more.

A tropical depression is an organized system of clouds and thunderstorms with a defined circulation and maximum sustained winds of 38 mph.

A tropical storm is an organized system of strong thunderstorms with a defined circulation and maximum sustained winds of 39 to 73 mph.

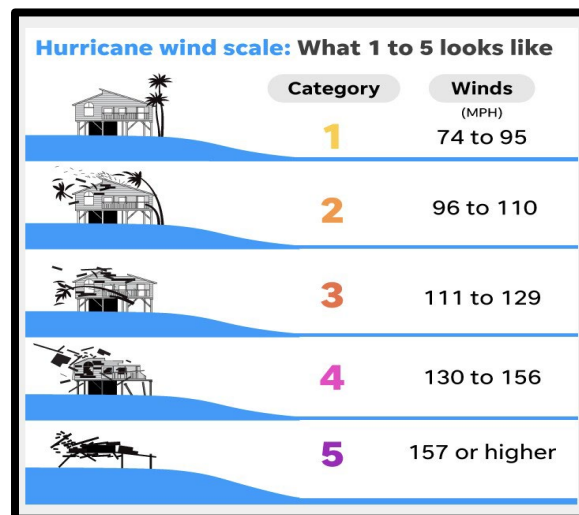
All hurricanes are dangerous, but some are more so than others. The storm surge, wind, and other factors determine the hurricane's total destructive power. The Saffir-Simpson Hurricane Wind Scale is designed to help determine wind hazards of an approaching hurricane easier for emergency officials. The scale is assigned five categories, with Category 1 assigned to a minimal hurricane and Category 5 to a worst-case scenario. Categories 3 to 5 are defined as major hurricanes. The criteria for each category are shown below.

Saffir-Simpson Hurricane Wind Scale

CATEGORY	WINDS (MPH)	DAMAGE
1	74-95	Minimal: Damage to building structures possible, primarily to unanchored older model mobile homes. Damage to poorly constructed signs, shrubbery, and trees. Loose outdoor items become projectiles. Numerous power outages.
2	96-110	Widespread from very strong winds: Some roofing material, door, and window damage to buildings. Considerable damage to trees, vegetation, mobile homes, and piers. A number of high rise building glass windows dislodged to become projectiles. Widespread power outages up to several days.
3	111-129	Extensive from dangerous winds: Some structural damage to small residences and utility buildings with minor amount of wall failures. Mobile homes destroyed. Many trees uprooted or snapped. Power outages lasting several days or weeks.
4	130-156	Devastating from extremely dangerous winds: Some wall failures with complete house roof structure failures. Extensive damage to doors, windows, and trees. Electricity unavailable for weeks.
5	>156	Catastrophic: Complete roof failure on many residences and industrial buildings. Some complete building failures with small buildings blown over or away. Power outages for weeks or months.

(Source: NOAA <http://www.nhc.noaa.gov/aboutgloss.shtml>)

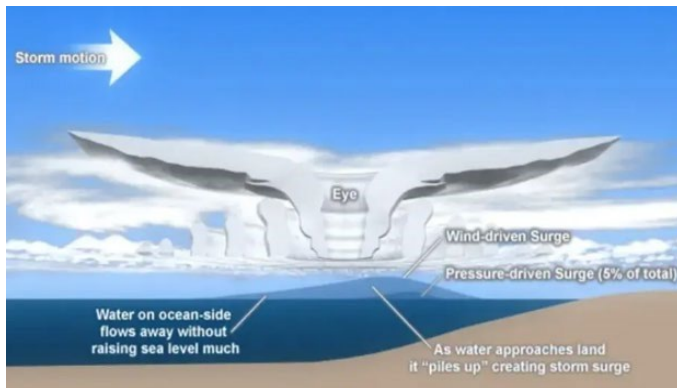
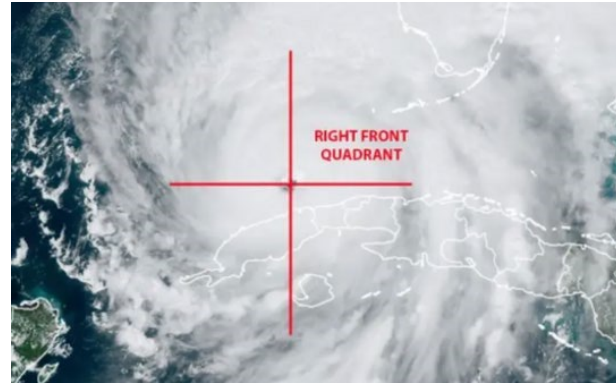
The [National Hurricane Center](#) has additional information on the [SaffirSimpson Hurricane Wind Scale](#).



In Georgia, hurricane/tropical storm season is officially from June 1 through November 30, but they may occur slightly before or after 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.

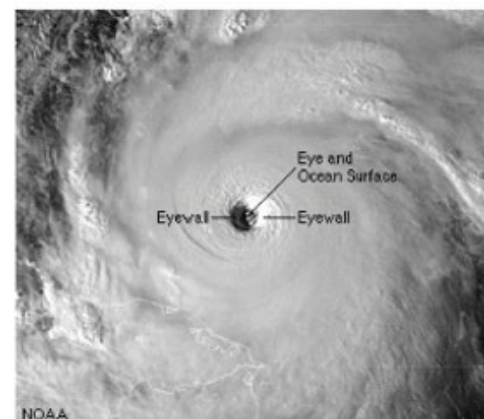
Usually, the right-front quadrant of a storm in the Northern Hemisphere carries higher winds, waves, and storm surges, according to the [University Corporation for Atmospheric Research](#).



Storm surge is a greater risk on the eastern side of a hurricane. In the diagram to the left, you will notice that the storm's motion is left to right, with the storm's circulation counterclockwise. Note that water is piling up at the right front quadrant of the crosssection of the hurricane.

(The Comet Project and NOAA)

The main parts of a hurricane are the rain bands on its outer edges, the eye, and the eyewall. Air spirals toward the center in a counter-clockwise pattern and out the top in the opposite direction. In the very center of the storm, air sinks, forming the cloud-free eye.



The hurricane's center (the eye) is usually a calm and clear area 20-40 miles across. Those amid a hurricane are often amazed at how the incredibly fierce winds and rain can suddenly stop, and the sky is clear when the eye comes over them. Quickly, the rain and wind begin again, but this time from the opposite direction. (NOAA)

Because of their location, Bacon County and the City of Alma are 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 when they reach Bacon County and the City of Alma. These may or may not contain tornadoes or hail. In some cases, tropical storms, depressions, or disturbances may never reach hurricane strength before reaching the shore. The effects vary depending on the severity of the hurricane/tropical storm and the duration of the event.

B. Profile of Hurricane/Tropical Storm Events, Frequency of Occurrences, Probability:

The historical record for hurricanes/tropical storms is spotty at best, with many unreported and underreported events. All of Bacon County and the City of Alma are vulnerable to hurricanes/tropical storms due to their proximity to the coasts of the Atlantic Ocean and the Gulf of Mexico. The effects of the hazard are usually substantial.

Bacon County HMPUC has witnessed many unreported and underreported tropical events occurring in Bacon County and the City of Alma. Some hurricane/tropical storm events over the past 100 years appear on several websites (See Appendix A Section VI Part C), but the exact dates or names of those events are not evident in most cases. The National Oceanic and Atmospheric Administrator's National Hurricane Center created the HURDAT database, which contains all the tracks of tropical systems since the mid1800s. This was used to document the number of tropical systems affecting Bacon County by creating a 20-mile buffer around the county that didn't make direct landfall but impacted the county. Since 1851, Bacon County has had 62 tropical systems within 20 miles of its border. More information about this table can be found in the HAZUS Report in Appendix G.

According to the National Climatic Data Center information (see Appendix F), four reports of tropical storms occurred in Bacon County (including the City of Alma) between 01/01/1997 and 12/31/2016. Of these, no cases were considered major events. The total cost of damage reported has been \$0. Real injuries have been reported as zero. The Historic Recurrence Interval is 11.83 years. This is an 8.45% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.3, the past 20-year frequency is 0.6, and the past 50-year frequency is 0.12 (see PDM Hazard Frequencies Table in Appendix D Section I).

During the development of the 2018 Plan, Bacon County and the City of Alma were significantly affected by Hurricane Hermine in September 2016 and Hurricane Matthew in October 2016. On July 7, 2021, the Governor issued a State of Emergency ahead of Tropical Storm Elsa, which caused heavy rain, flooding, and high winds that affected 92 counties, including Bacon. These three events are the only hurricanes/tropical storms that Bacon County and the City of Alma have experienced during the past five years. However, NOAA does not show this on its climate storm database.

According to www.gema.ga.gov, the MEOW (Maximum Envelope of Wind) for a Georgia Coast Landfall for Bacon County ranges from 39-57 mph in the county (for a Category 1 hurricane with sustained winds of 75 mph and forward speed of 9 mph) to 109-126 mph in the eastern 1/3 of the county and 92-108 mph in the western 2/3 of the county (for a Category 4 hurricane with sustained winds of 144 mph and forward speed of 25 mph). (See Appendix A.III)

The GMIS Critical Facilities Inventory addresses hurricanes/ tropical storms and wind (see Appendix A). This model has determined that all of Bacon County and the City of Alma are within the wind hazard area. This model also attempts to determine certain wind speed areas for the hazard of wind and has identified wind speeds of 90 to 99 mph and 100 to 109 mph. 100% of Bacon County and the City of Alma are included in some wind hazard areas. Complete inventory information is contained at <https://www.itos.uga.edu/gema>.

Since the previous plan was completed, no changes have affected the community's overall vulnerability to this hazard.

C./D. Inventory of Assets Exposed and Potential Loss to Hurricanes/Tropical Storms:

In Worksheet 3A: Inventory of Assets appearing in Appendix A, Section I, we estimate that Bacon County and the City of Alma are equally vulnerable to hurricanes/tropical storms.

Damages from a Category 1 hurricane could cause damage to a total of 80 buildings, with \$3 million in building damages and \$4.4 million in economic losses. The overall building damage ratio is .22% of total countywide building replacement costs. No essential facilities would be damaged, but all could be out of operation for up to a day. No households are displaced, and no short-term shelter needs are anticipated. The storm would leave about 55,000 tons of debris and other construction materials. There would be 2,816 tons of tree debris, and 51,690 tons of different natural material. Damage to crops is not considered in any of these figures. According to the most recent estimate (2019) available on the University of Georgia's GeorgiaData website (www.georgiadata.org), the total farm gate value of agricultural production in Bacon County is \$131,117,981.

E. Land Use and Development Trends Related to Hurricanes/Tropical Storms:

The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated Bacon County does not.

F. Multi-Jurisdictional Hurricane/Tropical Storm Differences:

All of Bacon County and the City of Alma may be affected by hurricanes/tropical storms. Such events are usually area-wide, and no difference in severity is expected between Bacon County and the City of Alma. However, the impact of a hurricane/tropical storm will likely 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.

G. General Overall HRV Summary of Hurricanes/Tropical Storms Events and Their Impact on the Community:

Hurricanes/tropical storms can cause damage anywhere, anytime, throughout Bacon County and the City of Alma. They are usually preceded by some watch or warning well in advance. The cost of the damage and potential loss of life may be higher if the path of hurricanes/tropical storms covers populated areas instead of more sparsely populated or unpopulated areas.

The Bacon County HMPUC recognizes hurricanes/tropical storms as the sixth most likely natural hazard to occur and cause damage. They have developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen hurricane/tropical storm impacts on Bacon County and the City of Alma. These are contained in Chapter 3, Section VI. Since the previous plan was approved, there have been no new community development changes that would increase or decrease the community's overall vulnerability to this hazard.

Section VII. Hail

A. Identification of Hazard:

The Bacon County HMPUC has chosen the threat of hail as the seventh most likely hazard to occur and cause damage in Bacon County and the City of Alma 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) and local history and personal accounts, to determine the frequency of events.

Hail is precipitation in lumps of ice that form in some storms. They are usually round and vary from a grain of millet to grapefruit size. Hailstones generally begin in thunderstorms between currents of rising air called the updraft and the current of air descending toward the ground called the downdraft. Large hailstones indicate strong updrafts in storms. The larger the hail, the stronger the updraft needed to hold it aloft in the storm.

In storms that cause tornadoes, hail often falls directly to the northeast or east of the tornado's path. The strong updraft is associated with the storm that produces the tornado. Fortunately, hail very rarely kills anyone. However, a couple of dozen people are injured by hailstones each year. The best way to keep safe during a hailstorm is to seek shelter immediately.

Hailstorms cause enormous damage to property and crops across the U.S. every year. In April 2016, the costliest hail storm in Texas history dropped grapefruit-sized hail and generated over 1.4 billion dollars in damage. In May 2017, “The Front Range Hail Storm” struck at rush hour in Denver, Colorado, trapping commuters in cars and busses while pelting them with baseball-sized hail. This storm caused over \$2 billion in damage. In Jun 2017, in Minneapolis, Minnesota, the metro area suffered \$2.5 billion of hail damage. In 2017 alone, hailstorms caused over \$22 billion in damages in the United States. Many news outlets predicted that 2022 might top that figure.

Although they can be destructive, individual hail events tend to be relatively short. They can occur at any time of year but are more likely during tornado season in Georgia, typically from March through August, or during hurricane/tropical storm season, typically June 1 through November 30.

B. Profile of Hail Events, Frequency of Occurrences, Probability:

The historical record for hail is spotty at best, with many unreported or underreported events. All of Bacon County and the City of Alma are vulnerable to hail due to its unpredictability and random occurrence, but the damage effects if with the storm. Members of the Bacon County HMPUC have witnessed many unreported and underreported hail events occurring in Bacon County and the City of Alma.

According to the National Climatic Data Center information (see Appendix F), twentyeight hail reports occurred in Bacon County, including the City of Alma, between 01/01/1996 and 12/31/2016. Only one case was considered a major event, with total damage estimated at \$1,000. Real injuries were reported as zero. Damage estimates do not include losses to agricultural production; it should be noted that in a hailstorm in 2014, an estimated 40 percent of the blueberry crop was damaged.

Of the 28 reports of hail listed above, one was of unknown size, 17 had 0.75-inch hail size, one had 0.88-inch hail size, three had 1” hail size, five had 1.75-inch hail, and one had 2.75-inch rain.

Since 2016, there have been ten hail storms registered with the Interactive Hail Maps through 07/19/2022. Most of the hail was registered as nickel-size to quarter-size hail. On July 19, 2022, the maximum size of hail was reported. This brings the total to 38 hail events in 71 years with a Historic Recurrence Interval of 1.87 years with the best available information. This is a 53.42% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 1.9, the past 20-year frequency is 1, and the past 50-year

frequency is 0.76 (See GEMA PDM Hazard Frequencies Table in Appendix D Section I). <http://interactivehailmaps.com/local-hail-map/alma-ga>

As evidenced by the data collected, hail storms are infrequent for Bacon County and the City of Alma. They are usually short-lived, typically producing .75-inch to .88-inch size hail. The community might expect this size of hailstones in future events.

Since the previous plan was completed, no changes have affected the community's overall vulnerability to this hazard.

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

The hail threat is constant in Bacon County and the City of Alma due to the hazard's unpredictability and random occurrence. It is difficult to predict when and where it will occur and the potential damage it will cause. In addition, hail may move randomly from place to place and miss entire areas completely.

An estimated 100% of the Residential property in Bacon County (which includes the Residential properties in the City of Alma) may be affected, with a total market value of \$216,227,355. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (4,376 of 4,376) in Bacon County (which includes those property types in the City of Alma) may be affected, with a total market value of \$261,732,295. The values are based on the most recently available tax roll data for Bacon County and the City of Alma, provided by the Bacon County Tax Assessor's Office.

Damage to crops is not considered in any of these figures. According to the most recent estimate (2019) available on the University of Georgia's GeorgiaData website (www.georgiadata.org), the total farm gate value of agricultural production in Bacon County is \$131,117,981.

Agricultural production, especially the blueberry harvest, is one of the most important parts of the Bacon County/Alma economy. This economic asset is particularly vulnerable to hail due to the potential reduction in crop harvest that a destructive hail storm could cause.

E. Land Use and Development Trends Related to Hail:

No other land use and development trends related to hail have been identified.

F. Multi-Jurisdictional Hail Differences:

All of Bacon County and the City of Alma have an equal chance of being affected by hail. No differences between the two jurisdictions have been identified at this time.

G. General Overall HRV Summary of Hail Events and Their Impact on the Community:

Hail can cause damage at any place, at any time, throughout Bacon County and the City of Alma. The cost of the damage will vary depending on the size and quantity of hailstones and where they land. Damage to vehicles (especially roof dents) is one of the most widespread effects of major hailstorms; injuries to people are rarer but not unheard of. The damage effects of hail, if any, vary with the storm.

The Bacon County HMPUC recognizes hail as the seventh most likely natural hazard to occur and cause damage. They developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen hail impacts on Bacon County and the City of Alma. These are contained in Chapter 4, Section VII.

Since the previous plan was approved, no new changes would increase or decrease the community's overall vulnerability to this hazard.

Section VIII. Severe Winter Storm

A. Identification of Hazard:

The Bacon County HMPUC has chosen the threat of a severe winter storm as the eighth most likely hazard to occur and cause damage in Bacon County and the City of Alma 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) and local history and personal accounts, to determine the frequency of events.

Although this natural hazard did not rank high in any dataset of occurrences or damages happening in Bacon County or the City of Alma, undocumented personal accounts of the Bacon County HMPUC members rated this hazard as likely to occur and cause damage. A significant reason for this is that the blueberry crop, an essential part of the Bacon/Alma economy, could be severely damaged by a winter storm or by unseasonably cold temperatures, resulting in a substantial economic loss to the community. In addition, because of the infrequency of severe winter storms in this region, Bacon County and the City of Alma residents are not well prepared to handle such events. Icy roads may result in many automobile crashes because residents are not accustomed to driving in icy conditions. Being unprepared may result in loss of life or substantial damage to property and the economy.

Severe winter storms, at worst, will produce sleet, freezing rain, and/or 1 to 2 inches of snow, with temperatures as low as the teens (°F). Snow accumulation usually melts away within 24 hours. Possible damage includes downed tree limbs, impassable roadways, power outages, increased emergency service workloads, failed water/sewer/septic systems, and (as mentioned above) crop damage and vehicle crashes.

B. Profile of Severe Winter Storm Events, Frequency of Occurrences, Probability:

The historical record for severe winter storms is spotty, with many unreported or underreported events. All of Bacon County and the City of Alma are vulnerable to severe winter storms, but the effects of most such events are minimal. Severe storms can occur during the winter, usually with a warning in advance.

According to National Climatic Data Center information (see Appendix F), there are four reports of severe winter storms (Frost/Freeze, Cold/Wind Chill, Winter Weather) occurring in Bacon County (including the City of Alma, as part of area-wide events) between 01/01/1997 and 12/31/2016. The total cost reported has been \$5,000,000 in crop damage. Real injuries were reported as zero. Bacon County HMPUC has witnessed many unreported and underreported cases of minimal to severe winter storm events occurring within Bacon County and the City of Alma that are not included in the NCDC database or any other known data source.

On March 15, 2018, Bacon County had temperatures drop as low as 29° from a previous 85° on February 21st, causing blueberry farms in southeastern Georgia to lose 60 percent of their crops. With temperatures soaring in February, the plants had an early bloom and succumbed to the freezing temperatures on March 15th. <https://t.uga.edu/4ha>. On March 12-13, 2022, a freeze event wiped out at least half of Georgia's blueberry crops. More than 54 million pounds of blueberries were lost when the temperatures dipped into the 20s. Temperatures were as low as 26° in Alma. [University of Georgia Weather Network at www.georgiaweather.net](http://www.georgiaweather.net).

In Bacon County (including the City of Alma), with the best available information, which includes the four reports of severe winter storms from the National Climatic Data Center, an additional four reports from communication with the local community in the previous plan, the 2018 snow event in Bacon County with 3 inches of snow, and two reports since the last plan, we have recorded ten events in 71 years with a Historic Recurrence Interval of 7.10 years. This is a 14.08% Historic Frequency Chance per year. The past 10-year Record Frequency Per Year is 0.6, the past 20-year frequency is 0.5, and the past 50-year frequency is 0.2 (see GEMA PDM Hazard Frequencies Table in Appendix D Section I).

The most pleasant months of the year for Bacon County are April, October, and March. Bacon County has four comfortable months with high temperatures of 70-85°. July is the hottest month for Bacon County, with an average high temperature of 92.2°, ranking it warmer than most Georgia places. December is the snowiest month in Bacon County, with 0.1 inches of snow, and no months of the year have significant snowfall. January is the

coldest month for Bacon County, with an average low of 37.5°. The most uncomfortably humid months are July, June, July, and August. See below charts of average monthly highs and lows in Bacon County.
<https://www.bestplaces.net/weather/county/georgia/bacon>

Average Monthly High and Low (°F)

	High	Low
January	61°	38°
February	65°	40°
March	71°	46°
April	78°	52°
May	85°	60°
June	90°	68°
July	92°	71°
August	91°	70°
September	87°	66°
October	79°	56°
November	71°	47°
December	63°	40°

Hot, Freezing, Rainy, Snowy Days: Bacon

	Hot Days	Freezing Days	Rainy Days	Snowy Days
January	0	10	9	0
February	0	6	8	0
March	0	2	8	0
April	1	0	7	0
May	6	0	7	0

June	16	0	12	0
July	22	0	13	0
August	19	0	12	0
September	8	0	8	0
October	1	0	6	0
November	0	3	7	0
December	0	9	8	0

Since the previous plan was completed, no changes in development within the community have occurred that would affect the community's overall vulnerability to this hazard.

C./D. Inventory of Assets Exposed and Potential Loss to Severe Winter Storms:

An estimated 100% of the Residential property in Bacon County (including the properties in the City of Alma may be affected, with a total market value of \$216,227,355. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education, and Utility properties (4,376 of 4,376) in Bacon County (which includes those property types in the City of Alma) may be affected, with a total market value of \$261,732,295. The values are based on the most recently available tax roll data for Bacon County and the City of Alma, provided by the Bacon County Tax Assessor's Office.

It should be noted that damage to buildings and other structures is not usually the most significant effect of severe winter storms. The major hazards from severe winter storms are vehicle crashes and crop damage, frozen/burst water pipes, power outages, overtaxed emergency services, and roadway blockages. It is scarce for Bacon County to see any significant accumulation of snow or ice; however, some severe winter storms in the past have been accompanied by .75-inch to .88-inch size hail. The community's main vulnerability is economical since the blueberry crop is an essential part of the local economy and can easily be damaged by severe winter storms.

Damage to crops is not considered in the above estimates. According to the most recent estimate (2019) available on the University of Georgia's GeorgiaData website (www.georgiadata.org), the total farm gate value of agricultural production in Bacon County is \$131,117,981.

E. Land Use and Development Trends Related to Winter Storms:

No other land use and development trends related to severe winter storms have been identified.

F. Multi-Jurisdictional Severe Winter Storm Differences:

All of Bacon County and the City of Alma have an equal chance of being affected by severe winter storms. In the event of icy roads, hazards would be more significant along hightraffic corridors (US-23 and GA-32) and in densely populated areas (mainly the City of Alma). The impact of crop damage would likely be more severely felt in unincorporated Bacon County, where more of the land is devoted to agriculture.

G. General Overall HRV Summary of Severe Winter Storm Events and Their Impact on the Community:

Severe winter storms can cause damage at any place and time during the winter months throughout Bacon County and the City of Alma. The cost of the damage may be higher in vehicle crashes in the City of Alma and other population centers and crop damage in the agricultural areas of the county. Most severe winter storms that pass through the area cause minimal to no damage.

The Bacon County HMPUC recognizes severe winter storms as the eighth most likely natural hazard to occur and cause damage. They have developed a comprehensive range of Mitigation Goals, Objectives, and Action Steps to lessen severe winter storm impacts on Bacon County and the City of Alma. These are contained in Chapter 4, Section VIII.

Since the previous plan was approved, no new developments, accomplished mitigation actions, new regulations, or program implementation have occurred. This would either increase or decrease the community's vulnerability to this hazard.

Chapter 3: Local Natural Hazard Mitigation Goals and Objectives

Summary of Changes:

Table 3.1 provides a brief description of each section in this chapter and a summary of the changes made.

Chapter 3 Section	Updates to Section
I. Flood	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. Thunderstorm/Wind	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. Wildfire	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. 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)
V. Tornado	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. Hurricane/Tropical Storm	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. Hail	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Fields; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)
VIII. Severe Winter Storm	Updated Goals, Objectives, and Action Step Formatting, Numbering, and Data Fields; updated or Deleted Prior Action Steps and Added New Action Steps (if applicable)

Overall Community Mitigation Goals, Policies, and Values Narrative

While Bacon County and the City of Alma operate autonomously, a high level of cooperation is exhibited in hazard mitigation and emergency planning efforts. Each local government has 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 relevant local, regional, and state partners to develop effective plans and strengthen relationships among all stakeholders. Together, Bacon County and the City of Alma have been able to access resources available through several state and federal sources that have been instrumental in improving the technical capabilities of these communities to mitigate hazards more effectively and provide more accurate warning and preparatory warning information to their citizens.

Overall, the priorities for each local community have remained relatively unchanged. The hazards and risks associated with each have not changed. Many of the action steps identified during previous versions of this plan are still relevant and remain a priority in this plan.

The Bacon County Commission gave authority for the development of this Plan as a result of their execution of the Grantee-Subgrantee Agreement for the Bacon County Hazard Mitigation Grant Program (HMGP) Planning Project; and by the City of Alma, located in Bacon County, through their participation in the planning project. The Bacon County Emergency Management Agency is authorized to oversee emergency management within Bacon County and the City of Alma.

The two jurisdictions have many current policies and programs related to hazard mitigation, described in detail in the goals, objectives, and action steps in Sections I through VIII of Chapter 4 of this Plan. Both jurisdictions (within the boundaries of their budgets) can 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 number of resources available to the two jurisdictions to expand and improve existing programs will depend on local government budgets and state and federal funding to support hazard mitigation activities.

Below is a description of the comprehensive range of Mitigation Goals, Objectives, and Action Steps that the Bacon County HMPUC developed to reduce damage and improve safety through Hazard Mitigation. These have been arranged by the natural hazards contained in Chapter Two, Sections I-VIII. In this Chapter, in Sections I-VIII, there is an analysis and description of a comprehensive range of specific Mitigation Goals, Objectives, and Action Steps to reduce the effects of each hazard. There is particular emphasis on future and existing buildings and infrastructure.

The Bacon County HMPUC discussed and identified the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Chapter 3 of this Plan after identifying the hazards noted in Chapter 2, Sections I-VIII. All areas of Bacon County and the City of Alma were considered in the comprehensive range of Mitigation Goals, Objectives, and Action Steps. These were identified after weighing many factors discovered during the planning process, including risk assessment, storm history, past damage, community resources, and other factors.

A list of a comprehensive range of Mitigation Goals, Objectives, and Action Steps was compiled from the input of the Bacon County HMPUC and others within the community. The Bacon County HMPUC prioritized the identified comprehensive range of Mitigation Goals, Objectives, and Action Steps based on what would benefit the community. The benefits were more significant than the costs involved (if any).

Several criteria were established to assist the Bacon County HMPUC members prioritize these suggested comprehensive ranges of Mitigation Goals, Objectives, and Action Steps.

Criteria included perceived cost vs. benefit or cost-effectiveness, availability of potential funding sources, overall feasibility, measurable milestones, multiple objectives, public and political support for the proposed actions, and the STAPLEE criteria.

Several projects emerged as a greater priority than others through this prioritization process. Some of the tasks involved spending considerable funds to initiate the required actions. The determination of a project's cost/benefit analysis (such as the FEMA B/CA model) will be implemented at the time of project application or funding request. Other projects allowed the communities to pursue project completion using potential grant funding. Still, others required no significant financial commitment from the communities.

Chapter 6, Section I-III, describes the planning process involved in selecting the comprehensive range of Mitigation Goals, Objectives, and Action Steps. The Bacon County HMPUC gives the Action Steps a rating of High, Medium, or Low Priority based on several factors (with a primary emphasis on prioritized cost versus benefit review) identified in Chapter 6 Section I.

The chapter lists relevant, comprehensive ranges of Mitigation Goals, Objectives, and Action Steps below. The Alma-Bacon County EMA Director has been chosen by Bacon County and the City of Alma to oversee the projects. The Alma-Bacon County EMA has been designated by Bacon County and the City of Alma as the coordinate agency for implementing and administering these projects.

Section I. **Flood**

A. Community Mitigation Goals

As previously indicated in Chapter 2 Section I, flooding may cause substantial damage to life, property, and the economy in Bacon County and the City of Alma. Floods are unpredictable and could happen at any time in any flood-prone area.

Many major flooding areas are adjacent to Big Satilla Creek, Hurricane Creek, and numerous other creeks and streams. Certain areas surrounding Hurricane Creek and the drainage canals in the City of Alma are subject to flooding. Flooding regularly occurs in certain areas due to rainfall and other factors. Due to these facts, the Bacon 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 Bacon County and the City of Alma.

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

1. Structural and Non-Structural Mitigation:

Structural options in this plan include upgrading drainage facilities and installing drainage facilities in areas lacking them. Non-structural options include analyzing properties affected by flooding to determine mitigation options and updating local FIRM maps.

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

The river corridors are protected by the 100-year floodplain and up to 25 feet from the rested edge of the river through zoning (City of Alma). COE permits protect wetland areas. Soil and Sedimentation Control Ordinances are in effect.

The City of Alma currently operates in compliance with the 2012 International Building Code standards and amendments. Bacon County does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. Alma has a City Planning Commission and participates with and supports the Alma-Bacon County Development Authority. Bacon County also participates with and supports the Alma-Bacon County Development Authority.

Bacon County and the City of Alma participate in the National Flood Insurance Program. Bacon County and the City of Alma do not participate in the Community Rating System (CRS) program. According to FEMA, they were not eligible as of April 1, 2022. <https://www.fema.gov.eligiblecommunities>

All jurisdictions (within the boundaries of their budgets) can expand and improve their existing policies and programs, as evidenced by the new and existing goals, objectives, and action steps included in this plan.

3. Community Values, Historical and Special Considerations:

Bacon County and the City of Alma have historic buildings which are Critical Facilities. Historic and special considerations pose significant challenges regarding the potential Hazard Mitigation Flood Planning Activities involving landmark buildings. The Bacon County Courthouse and others are Critical Facilities already on or should be considered potentially eligible for the National Register of Historic Places. The comprehensive range of Mitigation Goals, Objectives, and Action Steps for this hazard are outlined below.

There are no Critical Facilities that are also historic properties that appear in the floodplain, according to GMIS. The GMIS reports do not list any Repetitive Loss/NFIP properties in Bacon County or the City of Alma.

Critical Facilities appear in the floodplain, according to GMIS. Several of these are the City of Alma Wastewater Lift Stations. These may pose a danger of overflow and/or sewage contamination of the surrounding area should they be flooded. However, their current locations and function are essential to the efficient operation of the wastewater system; moving them is not recommended.

Worksheet #4: STAPLEE Criteria were completed for each Action Step (see Appendix D Section I).

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations include action steps to protect new buildings and infrastructure from flooding.

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 flooding.

C. Mitigation Strategy and Recommendations:

Goal #1: Prevent or reduce damage caused by floods in Bacon County and the City of Alma.

Objective #1: Minimize losses to existing and future structures, especially Critical Facilities and Infrastructure, due to floods.

Action Steps:

Action Step #1: *Conduct storm-water drainage replacement, repair, and cleaning and maintaining canals in Bacon County and the City of Alma.*

Responsible Department	Bacon County /City of Alma Public Works Depts.
Anticipated Cost	\$500,000 for each project
Existing and Potential Funding Sources	General Funds, GA DCA CDBG
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Currently cleaning system out.

Action Step #2: *Plan flood and drainage projects in Bacon County in high-risk areas and areas lacking curb and gutter and/or adequate drainage structures.*

Responsible Department	Bacon County Public Works Dept.
Anticipated Cost	\$500,000 for each project

Existing and Potential Funding Sources	General Funds, GA DCA CDBG, DOHS-GEMA/FEMA
Jurisdiction	Bacon County
Timeframe	2023-2028
Priority	High
Status	Ongoing – Waiting for approval from GDOT to place the bridge on Snapper Rd.

Action Step #3: *Plan flood and drainage projects in the City of Alma in highrisk areas and areas lacking curb and gutter and/or adequate drainage structures, including the GA-32 Bypass east of Dixon St. and 16th St. Intersection. We will also be adding signage and removing some signage that isn't needed.*

Responsible Department	City of Alma Public Works Dept.
Anticipated Cost	\$500,000 for each project
Existing and Potential Funding Sources	General Funds, GA DCA CDBG, DOHS-GEMA/FEMA
Jurisdiction	City of Alma
Timeframe	2123-2028
Priority	High
Status	Ongoing – GDOT has visited the site and is waiting for their suggestions.

Action Step #4 (formerly #7): *After flood events or other hazard events in Bacon County and the City of Alma, attempt to analyze affected properties to determine whether events have occurred in the past and attempt to mitigate or purchase, if necessary.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	\$500,000 for each project
Existing and Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step #5 (formerly #9): *Continue membership in the NFIP by adopting updated ordinances, and FIRM maps as updates are available.*

Responsible Department	Bacon County EMA
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds/GEMA/FEMA Homeland Security
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Working on updating the maps. Floyd Street has been completed.

Action Step #6: *Clean drainage pipes throughout Bacon County and the City of Alma, including removing intruding roots and other blockages.*

Responsible Department	Bacon County / City of Alma
Anticipated Cost	\$100,000
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Working with SGRC for maps showing utility lines.

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances 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 Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, social media, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and 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, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Action Steps Ongoing or Amended:

Objective 1

❖ Action Step #1: Ongoing

Currently in the process of cleaning out the drainage system.

❖ Action Step #2: Ongoing

We are placing the bridge on Snapper Rd once GDOT approval is received.

❖ Action Step #3: Ongoing

Amended: *Plan flood and drainage projects in the City of Alma in high-risk areas lacking curb and gutter and/or adequate drainage structures, including the GA-32 Bypass east of Dixon St. and 16th St. Intersection. We will also be adding signage and removing some signage that isn't needed.*

❖ Action Step #4: Ongoing

❖ Action Step #5: Ongoing *Working on updating FEMA maps.*

❖ Action Step #6: Ongoing

Completed Floyd Street. Currently working with SGRC to map all utilities.

Section II. Thunderstorms and Wind

A. Community Mitigation Goals

As previously indicated in Chapter 2, Section II, thunderstorms and wind may cause substantial damage to life, property, and the economy in Bacon County and the City of Alma. Thunderstorms and wind are unpredictable and could happen anywhere and anytime in Bacon County and the City of Alma. Because these storms may be extremely violent and cause significant 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 the threat of thunderstorms and wind damage in Bacon County and the City of Alma.

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

1. Structural and Non-Structural Mitigation:

Structural options in this plan include championing new construction buildings in compliance with minimum wind standards. Non-structural options include increasing public awareness of emergency warning sources and disseminating other information to the public.

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

The City of Alma currently operates in compliance with the 2012 International Building Code standards and amendments. Bacon County does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated Bacon County does not.

3. Community Values, Historical and Special Considerations:

Bacon County and the City of Alma have historic buildings which are Critical Facilities. Historic and special considerations pose significant challenges concerning mitigating thunderstorm/wind damage involving wind retrofitting on historic buildings. The Bacon County Courthouse and other historic Critical Facilities should be eligible for the National Register.

Worksheet #4: STAPLEE Criteria were completed for each Action Step (see Appendix D Section I).

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations 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: Prevent or reduce damage caused by thunderstorms and winds in Bacon County and the City of Alma.

Objective #1: Minimize losses to existing and future structures, especially Critical Facilities and Infrastructure, due to thunderstorms and winds.

Action Steps:

Action Step #1: Increase public awareness of weather radios, emergency procedures, and a local radio station as the emergency broadcast system station in Bacon County and the City of Alma through public safety announcements, publications, and other means. Continue to use the EMA website to notify the community of hazardous emergencies. An Early Warning System will also be installed to reach 80-85 percent of the community.

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds/GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #2: Disseminate information to the public concerning wind ratings, champion new construction being built to minimum wind standards, and champion the wind retrofitting of Critical Facilities and existing buildings in Bacon County.

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County
Timeframe	2023-2028
Priority	Medium
Status	Ongoing – Currently working with apartment complexes and single-family residents to upgrade to wind safety and other codes.

Action Step #3: Work with Red Cross to update approved designated emergency shelter locations annually. Conduct a public information campaign to raise awareness of shelters.

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds

Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing – Red Cross is reevaluating the Memorandum of Understanding for approved sites.

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances 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 Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, social media, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and 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, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Action Steps Ongoing or Amended:

Objective 1

❖ Action Step #1: Ongoing Amended:

Increase public awareness of weather radios, emergency procedures and using a local radio station as the emergency broadcast system station in Bacon County and the City of Alma through public safety announcements, publications, and other means. Continue to use the EMA website to notify the community of hazardous emergencies. An Early Warning System will also be installed to reach 80-85 percent of the community.

- ❖ **Action Step #2: Ongoing** - *Currently working with apartment complexes and single-family residents to upgrade to wind safety and other codes.*
- ❖ **Action Step #3: Ongoing** - *Red Cross is reevaluating the Memorandum of Understanding for approved sites. A new area representative has been hired and is updating the list of shelters.*

Amended: *Work with Red Cross to update approved designated emergency shelter locations annually. Conduct a public information campaign to raise awareness of shelters.*

Section III. Wildfire

A. Community Mitigation Goals

As previously indicated in Chapter 2, Section III, a wildfire may cause substantial damage to life, property, and the economy in Bacon County and the City of Alma. Wildfire is unpredictable and could happen anywhere and in the community. The Bacon County HMPUC believes that due to the great damage wildfire may cause, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce the threat of wildfire damage in the community.

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

1. Structural and Non-Structural Mitigation:

Structural options in this plan include reducing structural ignitability, building new fire stations and supplying the fire department with additional equipment, planning future residential development to mitigate wildfire hazards, improving infrastructures such as fire hydrants and water lines, and encouraging the maintenance of clear right-of-way.

Non-structural options include updating the fire master plan, conducting various training and outreach programs, creating new ordinances to mitigate wildfire hazards, improving public awareness of the dangers of wildfires, and promoting “Firewise” knowledge in the community.

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

The City of Alma currently operates in compliance with the 2012 International Building Code standards. Bacon County does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated

Bacon County does not. The Community Wildfire Protection Plan outlines strategies for mitigating wildfire damage in the community.

3. Community Values, Historical and Special Considerations:

Bacon County and the City of Alma have historic buildings, a few of which are Critical Facilities. Historic and special considerations pose significant challenges concerning mitigating thunderstorm/wind damage involving wind retrofitting on historic buildings.

The Bacon County Courthouse and other historic Critical Facilities should be eligible for the National Register.

Worksheet #4-STAPLEE Criteria was completed for each Action Step. Please see the worksheets contained in Appendix D Section I.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations 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: Prevent or reduce damage caused by wildfires in Bacon County and the City of Alma.

Objective #1: Minimize losses to existing and future structures (especially Critical Facilities and Infrastructure) and woodlands due to wildfire.

Action Steps:

Action Step #1: *Provide additional first responder training, air units, air unit chargers, Class A Pumper and Fire Knocker trucks, and other equipment to all Bacon County Fire Departments for wildfire use.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	\$5,000,000
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA

Jurisdiction	Bacon County
Timeframe	2023-2028
Priority	High
Status	Ongoing – Continue with training every year. Purchased two engines and applied for grants for air packs and fire gear.

Action Step #2: *Partner with the Georgia Forestry Service and other fire service personnel to train Bacon County Fire Department personnel on wildfire strategy and tactics.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Quarterly training with Georgia Forestry.

Action Step #3: *Support the enforcement of the local governments' burn ordinances and bans and promote hazardous fuel reduction by prescribed burning, mechanical treatment, or chemical treatment carried out and promoted by the GA Forestry Commission in Bacon County and the City of Alma. The agricultural property requires a permit from Georgia Forestry.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #4: *Acquire property for new Bacon County Volunteer Fire Stations and/or new additions to those existing stations, including the Scuffletown Fire District.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	\$1,000,000 each
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County
Timeframe	2023-2028
Priority	High
Status	Ongoing –Construction Scuffletown Fire Department will be completed in 2022.

Action Step #5 (formerly #6): *Regularly update the fire master plan.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	\$20,000
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2018-2023
Priority	High
Status	Ongoing

Action Step #6 (formerly #7): *In the City of Alma, replace the four-inch and smaller water lines with six-inch water lines and hydrants.*

Responsible Department	City of Alma Public Works Dept.
Anticipated Cost	\$500,000 for each project
Existing and Potential Funding Sources	General Funds, GA DCA CDBG
Jurisdiction	City of Alma
Timeframe	2023-2028
Priority	High

Status	Ongoing – Replaced damaged hydrants. She was currently working on Master Plan and applying for funding.
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Action Step #7 (formerly #8): *Encourage agencies and private property owners during preplanning to trim tree lines and create fire buffers/breaks around Critical Facilities, new and existing homes, businesses, and utilities in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD, City Code Enforcement
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #8 (formerly #9): *Create new ordinances and enforce existing ordinances for new and existing construction to help pre-disaster wildfire mitigation.*

Responsible Department	Bacon County Commission, City of Alma City Council
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step #9 (formerly #10): *Code Enforcement to continue to work with developers and homeowners to pre-plan each building site and/or subdivision to help with pre-disaster wildfire mitigation.*

Responsible Department	Alma-Bacon County EMA, Bacon County Commission, City of Alma City Council, City Code Enforcement
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Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing – Extended beyond 2013-2018 due to importance.

Action Step #10 (formerly #11): *Maintain HazMat and FF 1 Certifications and search outbuilding for FF 2 Training Certification.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	\$100,000
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Currently has HazMat Certification and FF1 certification for 32 firefighters. New firefighters will be trained as they are hired. The media library has been purchased.

Action Step #11 (formerly #12): *Apply for and purchase one turbo draft for wildfire usage.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	\$6,000
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – One has already been purchased.

Objective #2: Obtain a FireWise Community Status by educating the AlmaBacon County Fire Department personnel and the public on wildfire hazards and pre-disaster mitigation.

Action Steps:

Action Step #1: *Maintain good public relations between the citizens of Bacon County, the City of Alma, and the Fire Department, and plan to increase awareness and resources through education sessions with local schools and daycare centers.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step #2: *Need digital copies of NFPA-299 “Protection of Life and Property from Wildfire” and other publications for the use of Bacon County and the City of Alma and public use.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	\$1200
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing – Digital copy is available, but updated version hard copies are needed.

Action Step #3: *Continue to educate Bacon County and City of Alma communities and citizens on the pre-disaster mitigation of wildfire and use and develop grade school-based programs to educate children.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing – Participates in Career Week at schools. Georgia Forestry offers Fire Department assistance with training in the schools.

Action Step #4: *Plan RFD meetings in Bacon County and the City of Alma and hold joint mock fire drills for all fire departments.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing – Currently having fire drills twice a month.

Objective #3: Implement priorities, projects, and recommendations in GA Forestry Commission’s “Community Wildfire Protection Plan.”

Action Steps:

Action Step #1: *Encourage a minimum of 30 feet of defensible space around all governmental structures and recommend to homeowners and community stakeholders that they create the same space through the trimming of shrubs, vines, and overhanging limbs, replacement of flammable plants with less flammable varieties, and removal of vegetation around chimneys.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD, Bacon County/City of Alma Public Works Depts., Code Enforcement, Georgia Forestry
Anticipated Cost	\$35 an acre
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA, USFS
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Developers and homeowners are encouraged to do this during preplanning.

Action Step #2: *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 with less flammable landscaping materials around all governmental structures and recommend same to homeowners and community stakeholders.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD, Bacon County/City of Alma Public Works Depts.
Anticipated Cost	\$35 an acre
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA, USFS
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Extended beyond 2013-2018 due to importance.

Action Step #3 (formerly #4): *Encourage driveway access/right-of-way clearance by maintaining vertical and horizontal clearance for emergency equipment and installing adequate culvert lengths to allow emergency vehicle access.*

Responsible Department	Bacon County/City of Alma Road Depts. Building Inspection Depts. and Public Works Depts.
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Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Extended beyond 2013-2018 due to importance.

Action Step #4 (formerly #5): *Ensure road access by identifying needed improvements, and as roads are upgraded, meet current GDOT standards.*

Responsible Department	Bacon County/City of Alma Road Depts. Building Inspection Depts. and Public Works Depts.
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing –County roads have been widened to meet GDOT standards.

Action Step #5 (formerly #6): *Examine existing codes and ordinances and amend and enforce existing building codes as they relate to skirting, propane tank locations, public nuisances (trash/debris), property address marking standards, and other relevant concerns; at such time as the development of zoning, planning and subdivision ordinances become practical, include fire department and emergency services input into the design of these.*

Responsible Department	City of Alma Building Inspection Depts., Public Works Depts., and Code Enforcement
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High

Status	Ongoing
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Action Step #6 (formerly #8): *Encourage railroads to maintain their right-of-way better, eliminating brush and grass through herbicide and mowing. Maintain firebreaks along the right-of-way adjacent to residential areas.*

Responsible Department	Bacon County EMA, Bacon County FD, Bacon County/ Building Inspection Depts. and Public Works Depts., Norfolk Southern CSX?
Anticipated Cost	\$35 an acre
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA, USFS
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #7 (formerly #9): *Encourage Georgia Forestry to continue to improve existing fire lines/fire breaks by reducing hazardous fuels by cleaning and re-harrowing existing lines.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD, Bacon County/City of Alma Building Inspection Depts. and Public Works Depts., GA Forestry Commission
Anticipated Cost	\$35 an acre
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA, USFS
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Extended beyond 2013-2018 due to importance.

Action Step #8 (formerly #10): *Inspect, maintain, and improve access to existing dry hydrants; add signage along roads to mark the hydrants.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD, Bacon County Road Dept. and Public Works Dept.
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County
Timeframe	2023-2028
Priority	High
Status	Ongoing – FD inspects hydrants. Signs need to be replaced.

Action Step #9 (former #12): *Ensure all fire stations and firefighters are equipped with wildland hand tools and lightweight PPE gear (45 sets) and investigate the need for brush trucks.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	\$80,000
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – 3 Trucks and fire gear and equipment has been added, but there is a need for more trucks, equipment, and gear.

Action Step #10 (formerly #13): *Maintain mobile generators to provide backup power where needed.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	\$15,000
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High

Status	Ongoing – Has purchased some generators with light towers on them.
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Action Step #11 (formerly #14): *Ensure that all personnel is trained in wildfire suppression.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds/DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Has purchased some generators with light towers on them.

Action Step #12 (formerly #15 & #16): *Encourage Georgia Forestry to continue to use their website to provide a video to allow education to the public with a “Firewise” Workshop for Bacon County community leaders.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD, Georgia Forestry
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds/GA Forestry
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #13 (formerly #17): *Develop and distribute Firewise informational packets to code enforcement and insurance agents.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds/GA Forestry
Jurisdiction	Bacon County and the City of Alma

Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #14 (formerly #19): *Invite the Alma Times to community “Firewise” functions for news coverage and regularly submit press releases documenting wildfire risk improvements in Bacon County.*

Responsible Department	Alma-Bacon County EMA, Alma-Bacon County FD
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds/GA Forestry
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Extended beyond 2013-2018 due to importance.

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances 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 Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, social media, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and 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, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Action Steps Ongoing or Amended:

Objective 1

❖ **Action #1: Ongoing**

Continue with training every year. Purchased two engines and applied for grants for air units and fire gear.

❖ **Action #2: Ongoing**

Quarterly training with Georgia Forestry.

❖ **Action #3: Ongoing**

Amended: *Support the enforcement of the local governments' burn ordinances and bans and promote hazardous fuel reduction by prescribed burning, mechanical treatment, or chemical treatment carried out and promoted by the GA Forestry Commission in Bacon County and the City of Alma. The agricultural property requires a permit from Georgia Forestry.*

❖ **Action #4: Ongoing**

❖ **Action #5 (formerly #6): Ongoing**

❖ **Action Step #6: (formerly #7) Ongoing**

❖ **Action Step #7 (formerly #8): Ongoing**

Amended: *Encourage agencies and private property owners during preplanning to trim tree lines and create fire buffers/breaks around Critical Facilities, new and existing homes, businesses, and utilities in Bacon County and the City of Alma.*

❖ **Action Step #8 (formerly #9): Ongoing**

❖ **Action Step #9 (formerly #10): Ongoing**

Amended: *Code Enforcement to continue to work with developers and homeowners to pre-plan each building site and/or subdivision to help with predisaster wildfire mitigation.*

❖ **Action Step #10 (formerly #11):**

Amended: *Maintain HazMat and FF 1 Certifications, and search outbuilding for FF 2 Training Certification.*

❖ **Action Step #11 (formerly #12): Ongoing**

Amended: *Apply for and purchase one turbo draft for wildfire usage.*

Deleted Action Steps from the previous plan:

Objective 1

- ❖ **Action Step Item #5 – Main Fire Station within 5 miles of Industrial Park.**

Objective 2

- ❖ **Action Step #1: Ongoing**

Amended: *Maintain good public relations between the citizens of Bacon County, the City of Alma, and the Fire Department and plan to increase awareness and resources through education sessions with local schools and daycare centers.*

- ❖ **Action Step #2: Ongoing**

Amended: *Need digital copies of NFPA-299 “Protection of Life and Property from Wildfire” and other publications for the use of Bacon County and the City of Alma and public use.*

- ❖ **Action Step #3: Ongoing**

Amended: *Continue to educate Bacon County and City of Alma communities and citizens on the pre-disaster mitigation of wildfire and use and develop grade school-based programs to educate children.*

- ❖ **Action Step #4: Ongoing**

Objective 3

- ❖ **Action Step #1: Ongoing**

Amended: *Encourage a minimum of 30 feet of defensible space around all governmental structures and recommend to homeowners and community stakeholders that they create the same space through the trimming of shrubs, vines, and overhanging limbs, replacement of flammable plants with less flammable varieties, and removal of vegetation around chimneys.*

- ❖ **Action Step #2: Ongoing**

- ❖ **Action Step #3 (formerly #4): Ongoing**

- ❖ **Action Step #4 (formerly #5): Ongoing**

Amended: *Ensure road access by identifying needed improvements, and as roads are upgraded, meet current GDOT standards.*

- ❖ **Action # 5 (formerly #6): Ongoing**

- ❖ **Action Step #6 (formerly #8): Ongoing**

- ❖ **Action Step #7 (formerly #9): Ongoing**
Amended: Encourage Georgia Forestry to continue to improve existing fire lines/fire breaks by reducing hazardous fuels by cleaning and re-harrowing existing lines.
- ❖ **Action Step # 8 (formerly #10): Ongoing**
- ❖ **Action Step #9 (formerly #12): Ongoing**
- ❖ **Action Step #10 (formerly #13): Ongoing**
- ❖ **Action Step #11 (formerly #14): Ongoing**
- ❖ **Action Step #12 (formerly #15 & #16): Ongoing (These two combined)**
Amended: Encourage Georgia Forestry to continue to use their website to provide a video to allow education to the public with a “Firewise” Workshop for Bacon County community leaders.
- ❖ **Action Step #13 (formerly #17): Ongoing**
Amended: Develop and distribute Firewise informational packets to code enforcement and insurance agents.
- ❖ **Action Step #14 (formerly #19): Ongoing**
Amended: Invite the Alma Times to community “Firewise” functions for news coverage and regularly submit press releases documenting wildfire risk improvements in Bacon County.

Deleted Action Steps from the previous plan:

Objective 3:

- ❖ **Action Step #3** – *City already has a drop-off center for the community to use on Saturdays, and City picks up yard waste once a week.*
- ❖ **Action Step # 7** – *Georgia Forestry already does this.*
- ❖ **Action Step #11** – *Drop-off tanks are not needed.*
- ❖ **Action Step #18** – *Not needed since the Fire Department already offers education through schools.*

Section IV. Drought

A. Community Mitigation Goals

As previously indicated in Chapter 2 Section IV, drought may cause substantial economic, property, and personal damage in Bacon County and the City of Alma, mainly crop damage. Its effects can be long-term, and with the damage increasing as time goes by, conditions can contribute to wildfires in the community. The Bacon County 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 the drought impact on Bacon County, the City of Alma.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

Structural options in this plan include maintenance of infrastructures, such as water and sewer lines, to maintain the water supply and mitigate post-drought flooding risk.

Non-structural options include distributing literature related to best management practices.

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

The City of Alma currently operates in compliance with the 2012 International Building Code standards. Bacon County does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated Bacon County does not.

3. Community Values, Historical and Special Considerations:

Bacon County and the City of Alma have historic buildings, a few of which are Critical Facilities. Historic and special considerations pose significant challenges concerning mitigating thunderstorm/wind damage involving wind retrofitting on historic buildings. The Bacon County Courthouse and other historic Critical Facilities should be eligible for the National Register.

Worksheet #4-STAPLEE Criteria was completed for each Action Step. Please see the worksheets contained in Appendix D Section I.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations 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: Prevent or reduce damage caused by Drought in Bacon County and the City of Alma. (Formerly Goal #3)

Objective #1: Minimize losses to existing and future structures, especially Critical Facilities, and Infrastructure, due to Drought. (Former Objective 3.1)

Action Steps:

Action Step #1: *Maintain water and sewer lines and equipment prone to failure in unincorporated Bacon County and the City of Alma.*

Responsible Department	Bacon County/City of Alma Public Works Depts.
Anticipated Cost	\$100,000
Existing and Potential Funding Sources	General Funds, GA DCA CDBG
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – Currently working with SGRC GIS Department to map out water/sewer lines and fire hydrants.

Action Step #2: *Work with the County Extension Agent to distribute literature on best management practices in Bacon County and the City of Alma.*

Responsible Department	County Extension Agent
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances 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 Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, social media, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and 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, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Action Steps Ongoing or Amended:

Objective 1

- ❖ **Action Step #1 - Ongoing**
- ❖ **Action Step #2 – Ongoing**

Section V. Tornado

A. Community Mitigation Goals

As previously indicated in Chapter 2, Section V, tornadoes may cause substantial damage to life, property, and the economy in Bacon County and the City of Alma. Tornadoes are unpredictable and could happen at any place and time. The Bacon County HMPUC believes that because these tornadoes may be extremely powerful and cause significant damage, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce the threat of tornado damage in Bacon County and the City of Alma.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

Structural options in this plan include ensuring adequate tie-downs on manufactured homes.

Non-structural options include educating the public about shelters and weather alert systems and developing a plan for notifying and checking at-risk residents.

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

The City of Alma currently operates in compliance with the 2012 International Building Code standards and amendments. Bacon County does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated Bacon County does not.

3. Community Values, Historical and Special Considerations:

Bacon County and the City of Alma have historic buildings, a few of which are Critical Facilities. Historic and special considerations pose significant challenges concerning mitigating thunderstorm/wind damage involving wind retrofitting on historic buildings. The Bacon County Courthouse and other historic Critical Facilities should be eligible for the National Register.

Worksheet #4-STAPLEE Criteria was completed for each Action Step. Please see the worksheets contained in Appendix D Section I.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations 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: Prevent or reduce damage caused by tornadoes in Bacon County and the City of Alma.

Objective #1: Minimize losses to existing and future structures, especially Critical Facilities, and Infrastructure, due to tornadoes.

Action Steps:

Action Step #1: *Continue to use the building inspection program to inspect for adequate tie-downs on manufactured housing in the City of Alma.*

Responsible Department	City of Alma Building Inspection Depts.
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #2: *Plan pre-disaster mitigation in the tornado and other hazard seasons by preparing public service announcements and brochures and soliciting business participation in distributing information.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #3 (formerly #4): *Educate the public and market hazardous weather alert systems, such as sirens, and weather radios, in the City of Alma and populated areas of Bacon County, and pursue the Community Early Warning System.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	\$30,000
Existing and Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High

Status	Ongoing – Currently pursuing the community Early Warning System.
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D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances 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 Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, social media, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and 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, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Action Steps Ongoing or Amended:

❖ **Action Step #1: Ongoing**

Amend: *Continue to use the building inspection program to inspect for adequate tie-downs on manufactured housing in the City of Alma.*

❖ **Action Step #2: Ongoing**

❖ **Action Step #3 (formerly #4): Ongoing**

❖ **Action Step #3 (formerly #4) - Ongoing:**

Amend: *Educate the public and market hazardous weather alert systems, such as sirens, **and** weather radios, in the City of Alma and populated areas of Bacon County, and pursue the Community Early Warning System.*

Deleted Action Steps from the previous plan:

- ❖ **Action Step #3** – *This was halted due to COVID, and Red Cross now does the training.*

- ❖ **Action Step #5** – *Home Health Agencies and other community organizations are already doing this.*

Section VI. Hurricanes/Tropical Storms

A. Community Mitigation Goals

As previously indicated in Chapter 2 Section VI, hurricanes/tropical storms may cause substantial damage to life, property, and the economy in Bacon County and the City of Alma. They are usually accompanied by an advanced notice, giving the community time to prepare and/or evacuate. The Bacon County HMPUC believes that because these hurricanes/tropical storms have the potential to cause significant 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 the threat of hurricane/tropical storm damage in the community.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

Structural options in this plan include improving evacuation routes, producing window covers, ensuring reliable power at critical facilities, and purchasing emergency communications equipment.

Non-structural options include identifying and advertising shelter locations and educating the public about evacuation routes and other hurricane-related issues,

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

The City of Alma currently operates in compliance with the 2012 International Building Code standards and amendments. Bacon County does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated Bacon County does not.

3. Community Values, Historical and Special Considerations:

Bacon County and the City of Alma have historic buildings, a few of which are Critical Facilities. Historic and special considerations pose significant challenges concerning mitigating thunderstorm/wind damage involving wind retrofitting on historic buildings. The Bacon County Courthouse and other historic Critical Facilities should be eligible for the National Register.

Worksheet #4-STAPLEE Criteria was completed for each Action Step. Please see the worksheets contained in Appendix D Section I.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations 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: Prevent or reduce damage caused by hurricanes/tropical storms in Bacon County and the City of Alma. (Formerly Goal #8)

Objective #1: Minimize losses to existing and future structures, especially Critical Facilities, infrastructure, and the public, due to hurricanes/tropical storms. (Formerly Objective 8.1)

Action Steps:

Action Step #1: *Coordinate with Red Cross to assemble/supply a list of facilities used as public shelters for emergency purposes and test current shelters for safety and effectiveness in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA, Bacon County BOE, Red Cross
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds, DOHS-GEMA/FEMA, Red Cross
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #2: *Work with GDOT to improve the designated SR-32 evacuation route, including 4-laning throughout Bacon County.*

Responsible Department	Bacon County/City of Alma Road Depts.
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds, GDOT, TIA
Jurisdiction	Bacon County and the City of Alma

Timeframe	2023-2028
Priority	High
Status	Ongoing – Currently, it has new bridges and passing lanes.

Action Step #3: *Seek funding for continued EMA updated information online site to educate and inform the public on hazardous weather information, closings, events, etc.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	\$30,000 per year
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2018-2023
Priority	High
Status	Ongoing – Extended beyond 2013-2018 due to importance.

Objective #2: Advise the public of health and safety precautions and procedures necessary during hurricanes/tropical storms and other events, and on pre-disaster mitigation, in general, in Bacon County and the City of Alma.

Action Steps:

Action Step #1: *Continue to make the webpage available to disseminate literature from state and local agencies regarding disaster health and safety issues in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA,
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #2 (formerly #3): *Distribute information concerning predisaster mitigation to area news markets and speak at schools and civic clubs in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Objective #3: Ensure reliable electrical power and communications efficiency at Critical Facilities and agencies during hurricanes/tropical storms and other events in Bacon County and the City of Alma.

Action Steps:

Action Step #1: *Purchase generators and trailers for use at the school cafeteria, and shelter (all 11,096 Bacon County residents), and nursing home (88 patients) in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	\$100,000
Existing and Potential Funding Sources	General Funds, DOHS-GEMA/FEMA, Red Cross
Jurisdiction	Bacon County and the City of Alma
Timeframe	2018-2023
Priority	High
Status	Ongoing – All critical facilities now have generators and guaranteed fuel during natural disasters.

Action Step #2: *Continue to purchase communications equipment (radios, batteries, and chargers) with multi-channel capabilities. Upgrade existing equipment, including towers, to the best available. Store them at certain Critical Facilities in Bacon County and the City of Alma, including the area schools.*

Responsible Department	Alma-Bacon County EMA, Alma/Bacon County FD, Bacon County S.O., City of Alma P.D., Alma/Bacon County EMS, Alma/Bacon County Ambulance Svc.
Anticipated Cost	\$125,000
Existing and Potential Funding Sources	General Funds, DOHS-GEMA/FEMA
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing – In the process of upgrading towers and radios.

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances 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 Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, social media, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and 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, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6. **F. Action Steps Ongoing or Amended:**

Objective 1

❖ Action Step #1: Ongoing

Amended: *Coordinate with Red Cross to assemble/supply a list of facilities used as public shelters for emergency purposes and test current shelters for safety and effectiveness in Bacon County and the City of Alma.*

❖ Action Step #2: Ongoing

❖ **Action Step #3** (formerly #4): **Ongoing**

Amended: *Seek funding for continued EMA updated online information site to educate and inform the public on hazardous weather information, closings, events, etc.*

Objective 2

❖ **Action Step #1:**

Amended: *Continue to make the webpage available to disseminate literature from state and local agencies regarding disaster health and safety issues in Bacon County and the City of Alma.*

❖ **Action Step #2: Ongoing**

Objective 3

❖ **Action Step #1: Ongoing**

❖ **Action Step #2: Ongoing**

Amended: Purchase communications equipment (radios, batteries, and chargers) with multi-channel capabilities. Upgrade existing equipment, including towers, to the best available. Store them at certain Critical Facilities in Bacon County and the City of Alma, including the area schools.

DELETED ACTION STEP FROM PREVIOUS PLAN

OBJECTIVE 1:

❖ **Action Step # 4 – Not feasible.**

Section VII. Hail

A. Community Mitigation Goals

As previously indicated in Chapter 2, Section VII, hail may cause substantial economic, property, and personal damage in Bacon County and the City of Alma. Hail is unpredictable and could happen at any place and at any time. The Bacon County HMPUC believes that due to the damage hail may cause, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce the threat of hail damage to Bacon County and the City of Alma.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

Structural options in this plan include installing storm windows or ballistic film on critical facilities.

Non-structural options include encouraging the public to have hail damage in their insurance coverage and storing vehicles and other equipment in covered locations.

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

The City of Alma currently operates in compliance with the 2012 International Building Code standards. Bacon County now does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated Bacon County does not.

3. Community Values, Historical and Special Considerations:

Bacon County and the City of Alma have historic buildings, a few of which are Critical Facilities. Historic and special considerations pose significant challenges concerning mitigating thunderstorm/wind damage involving wind retrofitting on historic buildings. The Bacon County Courthouse and other historic Critical Facilities should be eligible for the National Register.

Worksheet #4-STAPLEE Criteria was completed for each Action Step. Please see the worksheets contained in Appendix D Section I.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations 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: Prevent or reduce damage caused by hail in Bacon County and the City of Alma.

Objective #1: Minimize losses to existing and future structures, especially Critical Facilities and Infrastructure, due to hail.

Action Steps:

Action Step #1 (formerly #2): *Encourage the public to include hail damage under insurance coverage and store equipment and vehicles under shelters in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances 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 Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, social media, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and 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, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Action Steps Ongoing or Amended:

❖ **Action Step #1 (formerly #2): Ongoing**
DELETED ACTION STEP FROM PREVIOUS PLAN

❖ **Action Step #1:** *Due to a lack of funds*

Section VIII.

Severe Winter Storm

A. Community Mitigation Goals

As previously indicated in Chapter 2, Section VIII, severe winter storms may cause substantial economic, property, and personal damage in Bacon County and the City of Alma. Severe winter storms are usually predictable ahead of time. Still, they can happen in any part of Bacon County and the City of Alma during the period surrounding the winter months.

Severe winter storms may cause substantial problems. Bacon County and the City of Alma do not have the specialized equipment used during severe winter storms that most northern counties and cities possess. The Bacon County HMPUC believes that due to the damage these severe winter storms have the potential to cause, a comprehensive range of Mitigation Goals, Objectives, and Action Steps (contained in Section C below) should be implemented to reduce the threat of severe winter storms damage in Bacon County and the City of Alma.

B. Identification and Analysis of Comprehensive Range of Mitigation Options

1. Structural and Non-Structural Mitigation:

Structural options in this plan include wrapping exposed pipes and adding insulation at critical facilities, championing new construction built to appropriate low-temperature ratings, and championing retrofitting existing buildings.

Non-structural options include disseminating information to the public concerning severe winter storms and maintaining temperatures over 32 degrees during freezes in government facilities.

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

The City of Alma currently operates in compliance with the 2012 International Building Code standards. Bacon County now does not have a building inspection program unless a courtesy inspection is requested from the City of Alma. The City of Alma has a zoning ordinance and a Planning Commission, and unincorporated Bacon County does not.

3. Community Values, Historical and Special Considerations:

Bacon County and the City of Alma have historic buildings, a few of which are Critical Facilities. Historic and special considerations pose significant challenges concerning mitigating thunderstorm/wind damage involving wind retrofitting on historic buildings. The Bacon County Courthouse and other historic Critical Facilities should be eligible for the National Register.

Worksheet #4-STAPLEE Criteria was completed for each Action Step. Please see the worksheets contained in Appendix D Section I.

4. New Buildings and Infrastructure:

The mitigation strategy and recommendations 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: Prevent or reduce damage caused by severe winter storms in Bacon County and the City of Alma.

Objective #1: Minimize losses to existing and future structures, especially Critical Facilities and Infrastructure, due to severe winter storms.

Action Steps:

Action Step #1: *Continue the policy of wrapping exposed piping with insulation and installing new insulation layers at Critical Facilities in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	\$3,000 per year
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	High
Status	Ongoing

Action Step #2: *Maintain temperatures above 32 degrees to prevent freezing in government-owned occupied and unoccupied structures in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA
Anticipated Cost	\$3,000 per year
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

Action Step #3: *Disseminate information to the public concerning severe winter storms, champion new construction being built to appropriate lowtemperature ratings, and champion existing buildings being retrofitted in Bacon County and the City of Alma.*

Responsible Department	Alma-Bacon County EMA, Bacon County/City of Alma Building Inspection Depts.
Anticipated Cost	Staff Time
Existing and Potential Funding Sources	General Funds
Jurisdiction	Bacon County and the City of Alma
Timeframe	2023-2028
Priority	Medium
Status	Ongoing

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the above strategies are intended to be carried out by each local jurisdiction. In some instances 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:

Plan sections shall be monitored and evaluated annually by the Alma-Bacon County EMA. Incremental accomplishments of Mitigation Goals, Objectives, and Action Steps will be reported to the public through appropriate means (TV, Web Site, Local Newspaper, City Council Meetings, County Commission Meetings, social media, etc.). By utilizing available resources, each jurisdiction will keep the public constantly informed of the development of these strategies and 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, completed, resulting in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. All Action Steps Ongoing

Chapter 4: Executing The Plan

Summary of changes:

- Revised and updated language.

Section I. Implementation of the Action Plan

A. Administrative Actions

The Alma-Bacon County Emergency Management Agency has overseen the meetings, planning process, prioritizing, etc., of the Bacon County HMPUC. The Southern Georgia Regional Commission contracted with the Bacon County Commission to administer and facilitate the planning process. The Bacon County Commission and the City of Alma will adopt the Plan (on approval by GEMA and FEMA) by the resolution(s) in Appendix E Section IV.

B. Authority and Responsibility

The Bacon County Commission and the City of Alma have authorized the submission of this Plan to both GEMA and FEMA for approval.

As determined by the Bacon County Commission, the City of Alma, and the Bacon County HMPUC, the Alma-Bacon 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 both jurisdictions (Bacon County and the City of Alma). The respective jurisdictions will be responsible for implementing the specific mitigation activities proposed in this plan.

C. Prioritization

1. Methodology for Prioritization

In prioritizing the implementation of action steps identified in this plan, the primary consideration will be those hazards that pose the greatest threat. Local governments will consider additional cost and time factors in prioritizing the implementation feasibility of the action steps and projects. Those activities

requiring little cost and staff time will be the highest implementation priority. Those steps requiring additional funding for equipment or staff time beyond the typical budgets of the communities will be incorporated into the budget process, when possible, based on the cost-benefit analysis described below.

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, local governments can 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 result is a Benefit-Cost Ratio (BCR) derived from a project's total net present value of benefits divided by the total project cost estimate, including all documented project and maintenance costs. The benefits of mitigation projects are avoiding damages, disruptions, losses, and casualties. Examples of common benefits include avoided or reduced damages to buildings, contents, or infrastructure; economic impacts of a loss of function of buildings; displacement costs for temporary quarters; loss of public services; loss of net business income; economic impacts of a loss of function of infrastructure; road or bridge closures; loss of utility services; and deaths and injuries.

3. Use of Other Calculations

Additional calculations were performed using potential funding sources, overall feasibility, measurable milestones, multiple objectives, public and political support for the proposed actions, and the STAPLEE criteria.

4. Use of Other Review Structure

In addition to the cost-benefit analysis, other factors that may affect the prioritization of projects include the availability of special tax, grants, and/or loan funds that become available on a limited basis to finance implementation, such as SPLOST funds or FEMA Pre-Disaster Mitigation Program funds.

D. Incorporation of Local PDM Plan into Other Plans/Planning Measures

This Plan will be reviewed by Bacon County and the City of Alma. The requirements of this Hazard Mitigation Plan will be taken into consideration. They will be incorporated into Comprehensive Plans, Five Year Short-Term Work Programs, Capital Improvement Plans, Local Emergency Operations Plans, and other such Plans as appropriate.

Once this plan is approved, it will be used by the SGRC and planning committees responsible for the update process for the County and City Comprehensive Plans,

ShortTerm Work Programs, and all other plans that could incorporate the requirements of this plan.

To facilitate this plan's inclusion, the Bacon County Commission and the City of Alma will provide a copy of this Plan to the persons and/or committees responsible for writing and updating plans.

Section II. Evaluation and Monitoring

A. Method

The Alma-Bacon County EMA Director will be charged with ensuring that this plan is monitored and periodically updated in subsequent years. The method that the AlmaBacon County EMA will use to monitor the plan and evaluate implementation progress will be the following:

- The Alma-Bacon County EMA will conduct quarterly telephone interviews with the various local governments and area agencies to chart their plan progress.
- The EMA Director will hold formal public meetings at least once a year to monitor the plan implementation progress and allow the public a forum for expressing concerns, opinions, and ideas.
- A series of informal meetings will be held throughout the year 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, completed, resulting 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 Bacon County and City of Alma residents, public involvement must be an integral part of the planning process.

Since adopting the original Bacon County Pre-Disaster Mitigation Plan, citizens have been kept involved and apprised of plan progress through such forums as regularly scheduled Commissioner 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. All other community planning efforts (Comprehensive Plan, Regional Plan, etc.) will allow citizens 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 ensure that the following steps are taken:

- The public will be directly involved in updating and reviewing the plan as the PreDisaster Mitigation Planning Committee members.
- Copies of the plan will be kept at appropriate agencies throughout Lowndes County.
- The plan will be available on City, County, and/or Southern Georgia Regional Commission websites. It 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 outlined 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 before the five-year update necessary period ends, the EMA Director will begin the planning process for a new update to this plan. This will establish a new planning committee tasked with completing the update following the same method used.

No later than the conclusion of the five years following approval of the plan update, the Lowndes County 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 5: Conclusion

Summary of changes:

- Revised and updated language.

Bacon County and the City of Alma have suffered considerable damage in the past from natural hazards. Before a disaster, planning and undertaking structural and nonstructural action steps can save lives and property. This philosophy has been the driving force behind the Lowndes County Hazard Mitigation Plan preparation.

Education of the population and enhanced warnings can decrease the vulnerability of the county's citizens and visitors. Continued and improved public information and communication are essential parts of this plan. Because of this planning process, Bacon County and City of Alma officials have better understood the natural and man-made hazards affecting our community.

As a result of the planning process described in Chapter 1 and the hazard, risk, and vulnerability assessment in Chapter 2, Bacon County and the City of Alma have a realistic perspective on the community's hazards. 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

Bacon County Board of Tax Assessors (<http://www.qpublic.net/ga/bacon/>)

Best Places to Live <https://www.bestplaces.net>

City of Alma (<http://www.cityofalmaga.gov/>)

Federal Emergency Management Agency (www.fema.gov)

FEMA National Flood Insurance Program Community Status Book
(<https://www.fema.gov/national-flood-insurance-programcommunity-status-book>)

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)

National Oceanic and Atmospheric Administration, National Climatic Data
Center, Storm Events Database
(<http://www.ncdc.noaa.gov/stormevents/>)

Risk Factor Climate Risks <https://riskfactor.com>

Southern Georgia Regional Commission (www.sgrc.us)

U.S. Drought Monitor (<http://droughtmonitor.unl.edu/>)

United States Census Bureau (www.census.gov)

University of Georgia www.georgiadata.org

University of Georgia College of Agriculture and Environmental Sciences.
2014 Farm Gate Value Report.
(<http://caes2.caes.uga.edu/center/caed/pubs/annual.html>)

University of Georgia Weather Network www.georgiaweather.net

Weather Spar (Year-Round Weather) <https://weatherspark.com>

Appendices

