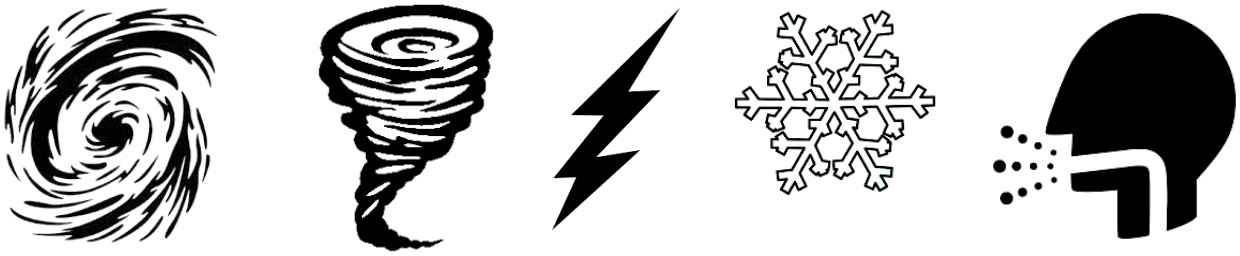
Lowndes County Multi-Jurisdictional Hazard Mitigation Plan

(including cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta)



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Adopted

Prepared for the Lowndes County Board of Commissioners
By the Southern Georgia Regional Commission
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And the Georgia Emergency Management Agency

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Chapter 1: Introduction to the Planning Process

Summary of changes:

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

CHAPTER 1 Section	Updates to Section
I. Purpose, Need, Authority, and Statement of Problem	• Language updated to reflect that this was an update to the existing plan
II. Local Methodology, Plan Update Process, and Participants	• Planning Committee reviewed each section and updated as necessary
III. Plan Review, Analysis, and Revision	• Planning Committee reviewed each section; Updates made using national, state, and local data
IV. Organization of Plan	• Consistent with original plan, however the Public Health Emergency and Dam Failure hazards were moved to the Natural Hazard section
V. Local Hazard, Risk and Vulnerability (HRV) Summary, Local Mitigation Goals, and Objectives	• Updates made using national, state, and local data
VI. Multi-Jurisdictional Special Considerations	• No major changes from previous plan
VII. Adoption, Implementation, Monitoring, and Evaluation	• Evaluation method revised and updated.
VIII. Community Data	• Moved to Appendix B

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

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

This document is the official plan update to the previous Lowndes County Hazard Mitigation Plan Update, as approved by the Georgia Emergency Management Agency (GEMA) and the Federal Emergency Management Agency (FEMA), which took effect on February 9, 2017 and expires on February 8, 2022.

The purpose of this document is to provide an overview of the hazards that may impact Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, and to outline the community's plans to mitigate the potential loss of life and damages to property and the economy that could occur with these events.

Hazard Mitigation is a means to address and proactively reduce the potential damage that may be caused by natural or Local Technological hazard disasters.

This Plan is a direct result of research and a planning and public involvement process undertaken by the local government officials and citizens of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. This Plan is the result of their commitment to reduce the risks of hazards and the effects of those hazards on this community.

Authority for the development of this Plan was given by the Lowndes County Commission as a result of their execution of the Grantee-Subgrantee Agreement for the Lowndes County Hazard Mitigation Grant Program (HMGP) Planning Project; and by the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, located within Lowndes County, through their participation in the planning project.

Section II. Local Methodology, Plan Update Process, and Participants

A. Overview

This Hazard Mitigation Plan Update encompasses the jurisdictions of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, located in Southern Georgia. Each of these jurisdictions also participated in the previous Hazard Mitigation Plan update. The Southern Georgia Regional Commission provided technical assistance. A list of stakeholders was formed, and 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 a range of hazards determined by the stakeholders.

Potential participants in the Hazard Mitigation Plan Update were contacted by telephone and/or e-mail concerning their participation. The participating stakeholders included representatives from the local governments of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, as well as representatives from other organizations, as shown in Table 1 below.

Table 1. Participants in the Hazard Mitigation Plan Update Process

Name	Title	Organization
Allmond, Timothy	Chief of Police	Wiregrass Georgia Technical College
Backe, Elizabeth	Planning Director	Southern Georgia Regional Commission
Baize, Theresa	Executive Director	Aveanna Healthcare
Bewley, Lauren	Emergency Preparedness Director	South Georgia Health District

Table 1. Participants in the Hazard Mitigation Plan Update Process		
Name	**Title**	**Organization**
Boutwell, Brian	Fire Chief	Valdosta Fire Department
Brammer, Jeff	HP & Special Projects Planner	City of Valdosta & City of Hahira
Caldwell, Chason	Safety	Langdale Forest Products
Coleman, Steve	Coordinator - Safety	Lowndes County Schools
Couvillon, Alex	Systems Manager	Lowndes County 911
Cox, Deb	Supervisor	Lowndes County Board of Elections
Culpepper, Gene	Assistant Superintendent	Lanier County Schools
Cumbus, Robin	Director	Lowndes County Public Works
Davis, Tonya	Operations Manager	Lowndes County 911
Dillard, J. D.	Planning and Zoning Director	Lowndes County
Ely, Spencer	GIS Analyst	Southern Georgia Regional Commission
Galloway, Jim	Executive Director	Valdosta Airport Authority
Godwin, Ariel	Community Planner	Moody AFB
Green, Lloyd	Fire Chief	Lowndes County
Haynes, Marcus	Lieutenant	Valdosta Fire Department
Hess, Thomas	Superintendent	City of Valdosta
Horne, Jamie	Fire Chief	City of Remerton
Hull, Corey	Transportation and Environment Director	Southern Georgia Regional Commission
Jones, Pam	Director of Educational Services	South Georgia Medical Center
Kennedy, Bennie	EMA Director	Lanier County
Lawson, Brad	President	Georgia Christian School and City of Dasher Liaison
Lee, Lauren	Registered Nurse	Lowndes County Health Department
Linkswiler, Tiffany	Assistant Supervisor	Lowndes County Board of Election
Lowery, Ronald	Safety	Langdale Forest Products
McGraw, Bobbi	Commander	Valdosta Police Department
Musgrove, Anthony	Operations Superintendent	City of Valdosta
Patelski, Linda	Director	Lowndes County Animal Services

Table 1. Participants in the Hazard Mitigation Plan Update Process		
Name	**Title**	**Organization**
Pierce, Tom	Residential Trash Supervisor	City of Valdosta
Redish, Travis	Ranger II	Georgia Forestry Commission
Rivera, Michael	GIS Project Manager	Southern Georgia Regional Commission
Sirmans, Timothy	Emergency Manager	Moody Air Force Base
Slaughter, Bill	Chairman	Lowndes County Board of Commissioners
Stevenson, Molly	Planning/Zoning	Lowndes County
Swails, Amy	Emergency Preparedness Specialist	South Georgia Health District
Tye, Ashley	EMA Director	Lowndes County EMA
Uchida, Jeremy	Airman	Moody Air Force Base
Wilbers, Julie	EMA Liaison	City of Lake Park
Wilson, Q.	CQI	Choices for Life

The meetings that were held are summarized in Table 2 below, and the sign-in sheets for all meetings are included in Appendix E.

Table 2. Meeting Schedule	
Meeting	**Date**
Kick-off meeting	August 21, 2020
First workshop	September 16, 2020
Second workshop	October 29, 2020
Third workshop	January 27, 2021
Fourth workshop	March 17, 2021
Public Hearing	March 31, 2021
Final public hearing	September 22, 2021

In order to initiate an outreach program to neighboring communities, governments, local agencies, regional agencies, and agencies authorized to regulate development, business, and the public, two Public Hearing Notices were published in the legal organ of the local newspaper. In addition, an e-mail list of stakeholders was kept updated and those on the list were informed of meetings through e-mails, letters, and/or telephone calls. Surrounding county EMA Directors were notified of the plan update via phone calls and invited to participate in the process. As a result, the kick-off meeting was attended by the EMA Director for neighboring Lanier County as well as representatives from the Lanier County Board of Elections and Lanier County School Board.

Planning Department staff from the Southern Georgia Regional Commission, which represents 18 counties in the region (including Lowndes County), attended the meetings. They participated in all aspects of the planning process and provided a regional perspective in the formation of this multi-jurisdictional Hazard Mitigation Plan.

B. Public Involvement

The publication of a Public Notice in the 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 first public hearing was held on March 31, 2021 and the final public hearing was held on September 22, 2021. Both public hearings were advertised in the *Valdosta Daily Times* (the meeting advertisements, as well as the sign-in sheets, are provided in Appendix E). Public comments made at the hearings and during the meetings were noted by SGRC staff and incorporated into the final Hazard Mitigation Plan document as appropriate through review and inclusion of notes from the hearings/meetings.

In addition, an e-mail list of stakeholders was kept up to date, including all the attendees who wrote their e-mail address on the sign-in sheet at each meeting, as well as any other interested parties. Further reminders of meetings were provided as needed through reminder e-mails, telephone calls, and in-person communication. Meeting notices and other announcements regarding the plan update were also posted on the Southern Georgia Regional Commission and Lowndes County Emergency Management Agency's social media accounts.

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

Section III. Plan Review, Analysis, and Revision

For the plan update, the prior Hazard Mitigation Plan was used as a basis. All chapters and sections were reviewed and updated as appropriate using national, state, and local data sources. The individual parts of the prior plan were reviewed (with an emphasis on the hazards, goals, objectives, and action steps), along with updated hazard, risk, and vulnerability data, as well as previous accomplishments of mitigation strategy efforts, and these elements were updated 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.

Copies of the previous Plan were made available at each meeting, while relevant chapters and sections under discussion were photocopied and distributed to those in attendance for comments. Outside of the formal meetings, parts of the plan were e-mailed to certain individuals who were unable to attend the meetings, and their comments were sought. Copies of the previous Plan and the draft Plan Update document were also available on the Southern Georgia Regional Commission website and from the local EMA office.

Besides the previous Hazard Mitigation Plan, the following plans and documents were consulted and their relevant goals and objectives included as appropriate in this Hazard Mitigation Plan:

- The Wildfire section was updated using the Georgia Forestry Commission's "Community Wildfire Protection Plan" (see Appendix C). The CWPP was consulted to ensure consistency between the CWPP and HMP, and all action items from the CWPP that were still relevant were included as action steps in the HMP.
- Land use descriptions, information about zoning, and information about community services were updated using the current joint Comprehensive Plan for the County and Cities.
- The 2014 Common Community Vision (CCV) for Greater Lowndes County identifies common themes in the plans that are applicable to the community and establishes a unified set of goals based on those themes. The CCV was consulted and applicable goals were incorporated into this Hazard Mitigation Plan as appropriate.
- The State of Georgia Hazard Mitigation Plan was consulted to ensure this local Hazard Mitigation Plan would be consistent with the state's plan.
- Information and data from the National Climatic Data Center (NCDC) were used to create the Hazard Frequency Table and associated information regarding each hazard, which can be found in Chapter 2.
- The Long-Range Transportation Plan for the Valdosta-Lowndes Metropolitan Area and the Transportation Infrastructure Vulnerability Study were consulted, especially with regard to infrastructure vulnerability to natural hazards and evacuation routes.

Section IV. Organization of the Plan

This plan focuses on ten natural hazards chosen by the stakeholders that may affect and cause damage to Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Chapter 2, Chapter 4, and Appendix A are each subdivided into Sections I through X; these sections reflect the nine natural hazards that were chosen. The natural hazards are as follows:

I. Flood
II. High wind – hurricanes, tornadoes, thunderstorms
III. Lightning
IV. Wildfire
V. Extreme heat/cold
VI. Drought
VII. Sinkholes
VIII. Hail
IX. Public Health Emergency

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

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

Throughout the effective time period of this Plan, the County Commissioners and City Council members will assign staff, as appropriate, to implement the comprehensive range of Mitigation Goals, Objectives, and Action Steps and other pertinent items that are contained in this Plan.

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

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

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

For each of the hazards covered by this Hazard Mitigation Plan, a Hazard, Risk, and Vulnerability (HRV) Assessment has been formulated through a variety of information obtained during the planning process. Information has been obtained from online databases, published sources, and personal accounts regarding hazards, their history in the community, and when and where they were active. This summary is provided for each hazard in Chapter 2.

The vulnerability of the community to natural hazards is also summarized in the Hazard Frequency Table (see Appendix D), and the Inventory of Assets and number of people exposed to each hazard is evaluated in GEMA Worksheet 3A (see Appendix A). Critical Facilities and Critical Infrastructure are also examined as to the present value and potential losses from natural hazards (see Appendix F).

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

Section VI. Multi-Jurisdictional Special Considerations

This plan has been developed for Lowndes County and the municipalities of Dasher, Hahira, Lake Park, Remerton and Valdosta. In general, all six of the jurisdictions are equally vulnerable to the same natural and Local Technological hazards addressed in this plan, and the mitigation action steps are intended to be undertaken by all six

jurisdictions. However, special considerations unique to a specific jurisdiction are noted where or if applicable.

Section VII. Adoption, Implementation, Monitoring, and Evaluation

After all plan development workshops were concluded, the draft plan was submitted to all local governments for their review. The draft plan was then submitted to GEMA and FEMA for their review and approval. After their approval, and any recommended changes, a second and final public hearing was held on September 22, 2021 in order to provide a further opportunity for public comment and review. After this final public hearing, resolutions adopting the plan were passed by the local governments on December 14, 2021 by Lowndes County; January 4, 2022 by the City of Lake Park; January 6, 2022 by the City of Valdosta; January 10, 2022 by the City of Remerton; February 3, 2022 by the City of Hahira; and February 7, 2022 by the City of Dasher adopting the Plan Update. Copies of the public hearing advertisements and resolutions are available in Appendix E.

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

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

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

During this annual evaluation, problems (if any) with completing the action steps will be discussed, methods of resolving those problems (if any) will be formulated, the action steps will be updated (if necessary), and new actions steps will be developed (if necessary) in response to new problems that have developed throughout the year. If any changes or updates are needed to the other sections of the plan itself, these

will also be discussed and noted. Critical Facilities and infrastructure changes and updates will also be discussed at this time and then added to the online GEMA database as required. New hazards in the area (if any) will be discussed and planned for and an assessment made as to whether community needs dictate additions to the materials of the plan.

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

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

Chapter 2: Local Natural Hazard, Risk, and Vulnerability (HRV) Summary

Summary of changes:

During the plan update process, the stakeholders reviewed the hazards that may affect the community, and their priority. This updated plan includes the same natural hazards that were included in the previous plan, in the same order of priority; however, the Public Health Emergency hazard was relocated from the Local Technological Hazard section to the Natural Hazard section. Table 2.1 provides a brief description of each section in this chapter and a summary of changes that have been made.

Chapter 2 Section		Updates to Section
I.	Flood	Updated data and information
II.	High wind – hurricanes, tornadoes, thunderstorms	Updated data and information
III.	Lightning	Updated data and information
IV.	Wildfire	Updated data and information
V.	Extreme heat/cold	Updated data and information
VI.	Drought	Updated data and information
VII.	Sinkholes	Updated data and information
VIII.	Dam failure	Relocated to Local Technological Hazard and updated data and information
IX.	Hail	Updated data and information
X.	Public Health Emergency	Relocated to Natural Hazard and updated data and information

Table 2.1: Overview of updates to Chapter 2

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

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

I. Flood

A. Identification of Hazard

A flood is a general and temporary condition where normally dry land is inundated by water or mudflow. The threat of a flood is considered by the stakeholders as likely to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events. Drainage ditches and canals that are improperly cleaned or maintained contribute significantly to flooding occurrences which require the homeowners to experience hours, if not days, of water filled yards, even in the cities. For further information, see the HAZUS Report in Appendix G.

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

Flash floods are floods that occur in short time-spans, often so quickly that people are caught off-guard. Flash floods can occur as a result of any of the causes mentioned above, but are most often due to extremely heavy rainfall from thunderstorms. More information is available at the National Weather Service (https://www.weather.gov/phi/FlashFloodingDefinition).

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

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

Flood Zone Designations and Descriptions

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

Zone Designations	Zone Descriptions
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
AO	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
A1-A30	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
A99	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.
AE	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
AR	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
V	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
V1-V30	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

Zone Designations	Zone Descriptions
B	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
C	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.
X Shaded	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
X Unshaded	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.

Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are all vulnerable to the effects of flooding. Areas within flood zones are naturally more vulnerable. For more information, see the maps in Appendix A.

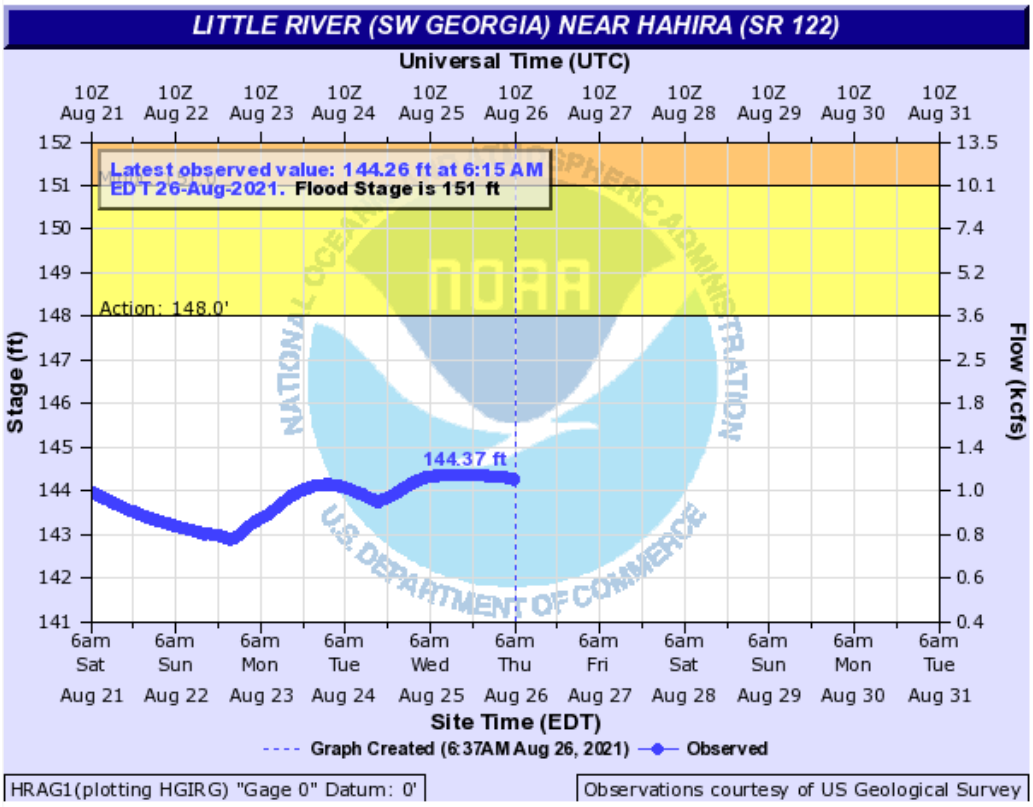
B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (see Appendix F), there are 18 reports of Floods occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic Recurrence Interval is 3.94 years. This is a 25.35% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 1.1, the past 20-year frequency is 0.75, and the past 50-year frequency is 0.36 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 3 Flood events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

River gauges with historic crest information are included in Appendix A. The Little River near Hahira graphic includes information for the City of Hahira. The Withlacoochee River above Valdosta graphic includes information for the City of Remerton as it feeds the One mile Branch that runs along the West/Southwest perimeter of Remerton. The Withlacoochee near Valdosta at US 41 graphic includes information for the City of Valdosta. The City of Dasher and the City of Lake Park do not have rivers or streams within their City limits. As such, they are not at risk from

rising river/stream levels, however they are still at risk for localized flooding from excessive rainfall which can lead to standing water on roads or structure flooding due to drainage issues. The City of Lake Park experiences roadway and ditch flooding with excessive rainfall events. N. Essa Street is not designed with curb/gutter stormwater conveyance, therefore periods with excessive rainfall typically flood the drainage ditches with flooding of the roadway. The City of Dasher particularly experiences flooding in the Triple Lakes Subdivision (along Triple Lake Drive and Triple Lake Circle). This subdivision is unpaved and experiences flooding, the appearance of potholes, and washing out of the roadway with excessive rainfall events. The City of Dasher does have a work program item in the draft version of the comprehensive plan update to pave 2 miles of dirt roads within the city limits. Lowndes County and the Cities of Hahira, Remerton, and Valdosta have a high probability of flooding while the Cities of Dasher and Lake Park have a moderate probability of flooding since they do not have rivers or streams within City limits.

Several recent flood events have been significant. On 6/7/2020, 13 inches of rain fell, and flash flooding occurred in Lake Park and southern Lowndes County, requiring road closures. Another significant flood event was on 4/2/2016, when roads were closed and washed out due to creek overflows with several inches of water above the roadway. Damage was estimated at $10,000. The costliest flood event in recent history occurred on 4/2/2009, when at least 100 homes were flooded, causing an estimated $2.5 million in property damage.



Flood Categories (in feet)

Major Flood Stage:	155
Moderate Flood Stage:	153
Flood Stage:	151
Action Stage:	148
Low Stage (in feet):	136.5

Historic Crests
(1) 156.40 ft on 04/03/1948
(2) 156.01 ft on 08/18/1928
(3) 154.85 ft on 02/28/2013
(4) 153.68 ft on 12/26/2014
(5) 151.49 ft on 04/03/2016
Show More Historic Crests

(P): Preliminary values subject to further review.

Recent Crests
(1) 150.40 ft on 01/05/2021
(2) 150.57 ft on 03/09/2020
(3) 149.48 ft on 12/19/2018
(4) 150.69 ft on 12/05/2018
(5) 151.18 ft on 01/26/2017
Show More Recent Crests

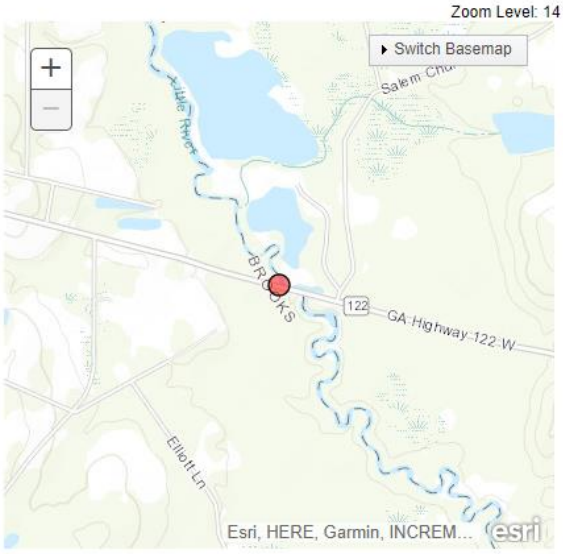
(P): Preliminary values subject to further review.

Low Water Records
Currently none available.

FEMA

For more information on your flood risk go to www.floodsmart.gov.

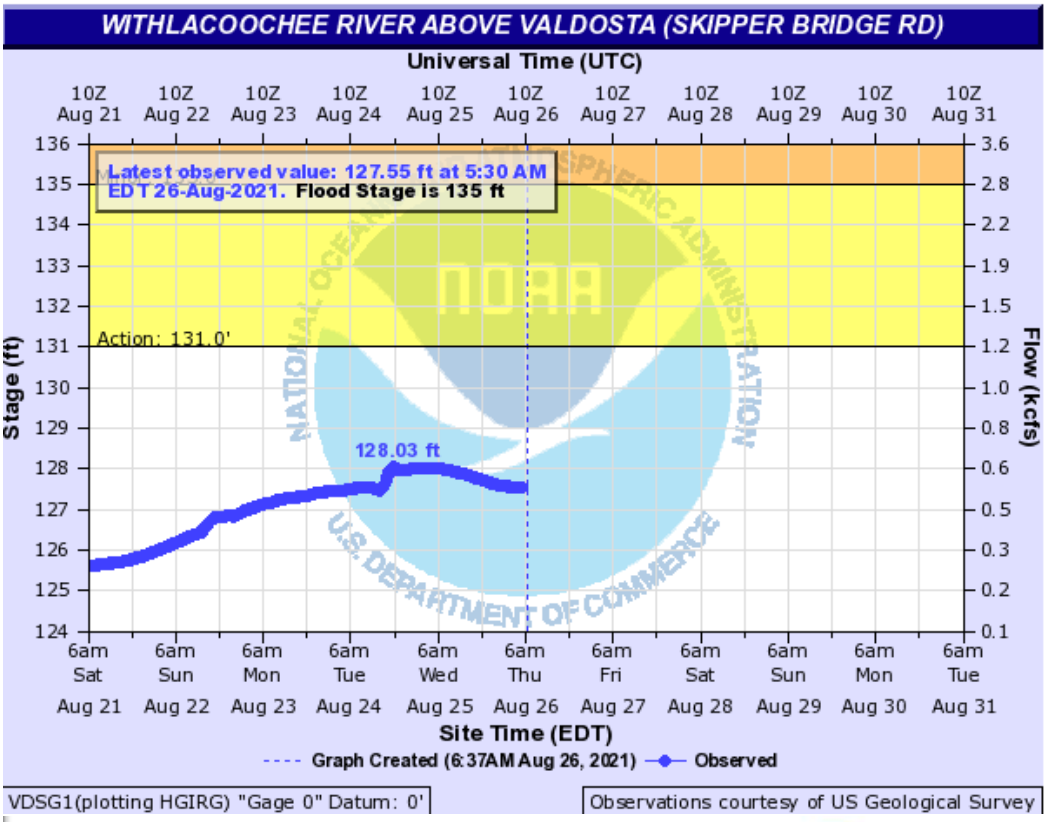
Show FEMA's National Flood Hazard Layers



Gauge Location

Disclaimer

Latitude/Longitude Disclaimer: The gauge location shown in the above map is the approximate location based on the latitude/longitude coordinates provided to the NWS by the gauge owner.



Downstream Gauge

Flood Categories (in feet)

Major Flood Stage:	145
Moderate Flood Stage:	142
Flood Stage:	135
Action Stage:	131
Low Stage (in feet):	122.1

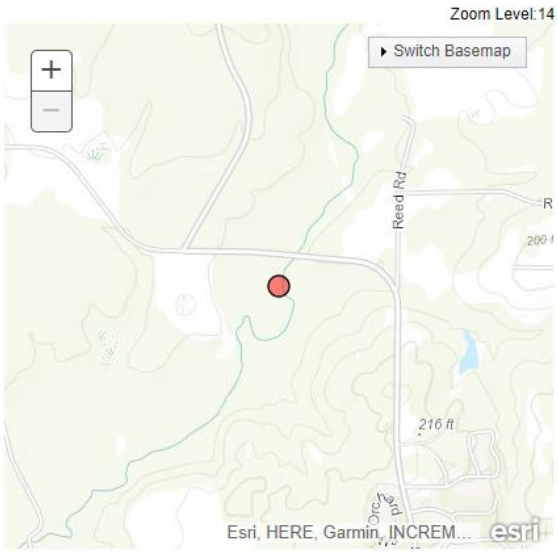
Historic Crests
(1) 153.30 ft on 04/04/1948
(2) 146.70 ft on 02/12/1986
(3) 145.90 ft on 04/04/2009
(4) 144.58 ft on 03/08/1984
(5) 142.74 ft on 03/05/1991
Show More Historic Crests

(P): Preliminary values subject to further review.

Recent Crests
(1) 138.72 ft on 01/05/2021
(2) 131.47 ft on 09/22/2020
(3) 137.06 ft on 03/09/2020
(4) 134.80 ft on 03/01/2020
(5) 136.59 ft on 12/18/2018
Show More Recent Crests

(P): Preliminary values subject to further review.

Low Water Records
(1) 121.24 ft on 06/12/2000
(2) 121.34 ft on 08/29/1996
(3) 121.40 ft on 07/16/1988



Gauge Location

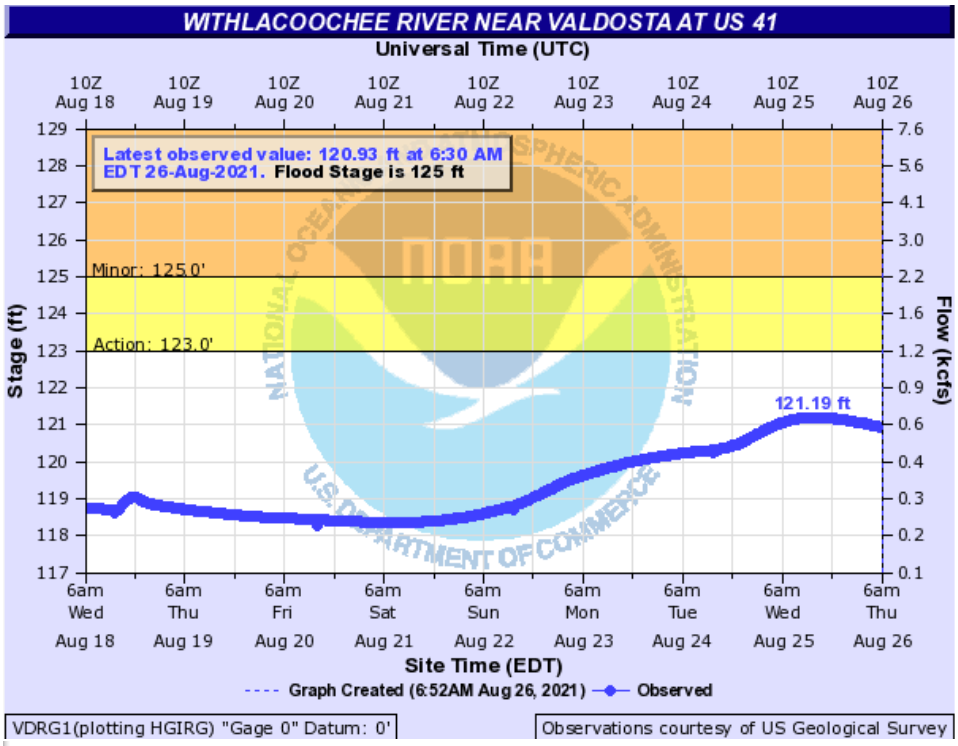
Disclaimer

Latitude/Longitude Disclaimer: The gauge location shown in the above map is the approximate location based on the latitude/longitude coordinates provided to the NWS by the gauge owner.

FEMA

For more information on your flood risk go to www.floodsmart.gov.

Show FEMA's National Flood Hazard Layers



Flood Categories (in feet)

Major Flood Stage:	137
Moderate Flood Stage:	133
Flood Stage:	125
Action Stage:	123
Low Stage (in feet):	114

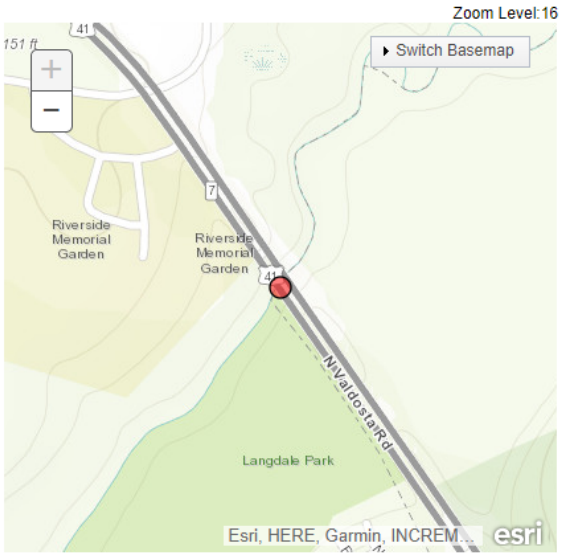
Historic Crests
(1) 138.30 ft on 02/12/1986
(2) 132.50 ft on 02/28/2013
(3) 132.41 ft on 03/08/1984
(4) 129.41 ft on 04/04/2016
(5) 129.16 ft on 12/27/2014
(6) 128.45 ft on 12/06/2018
(7) 127.85 ft on 03/15/1980
(8) 127.71 ft on 01/06/2021
(9) 127.54 ft on 02/07/2016
(10) 126.82 ft on 01/25/2017
Show More Historic Crests

(P): Preliminary values subject to further review.

Recent Crests
(1) 127.71 ft on 01/06/2021
(2) 123.02 ft on 09/23/2020
(3) 126.13 ft on 03/09/2020
(4) 124.58 ft on 03/02/2020
(5) 126.02 ft on 12/18/2018
(6) 128.45 ft on 12/06/2018
(7) 124.00 ft on 11/20/2018
(8) 126.82 ft on 01/25/2017
(9) 123.68 ft on 09/03/2016
(10) 129.41 ft on 04/04/2016
Show More Recent Crests

(P): Preliminary values subject to further review.

Low Water Records
Currently none available.



Gauge Location

Disclaimer

Latitude/Longitude Disclaimer: The gauge location shown in the above map is the approximate location based on the latitude/longitude coordinates provided to the NWS by the gauge owner.

FEMA

For more information on your flood risk go to www.floodsmart.gov.

Show FEMA's National Flood

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

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, 16 of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $64,553,959.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

The GMIS database lists 8 repetitive loss properties in the community. Six are in the City of Valdosta and two are in unincorporated Lowndes County. All are residential properties.

E. Land Use and Development Trends

Lowndes County and all of its municipalities, with Remerton being the exception, have adopted a comprehensive Flood Damage Prevention Ordinance to regulate land use and development activities inside areas designated as Special Flood Hazard Areas. These ordinances were drafted using the template provided to each governing body by the State Floodplain Management Office and FEMA. While the ordinances do not expressly prohibit the development of lands within the current flood plain boundaries, they do provide limitations and give staff the opportunity to work with the developers to take the necessary steps to mitigate the likelihood of damage during the development. Examples include flood-proofing measures, elevation, etc.

F. Multi-Jurisdictional Differences

With regard to flooding, Lowndes County, Hahira, Remerton and Valdosta are the only jurisdictions with areas of flood hazard identified on the current FIRM maps. Historically, the cities of Dasher, Hahira, Lake Park, and Remerton have not experienced a significant amount of flood-related damage. The City of Valdosta experiences more flash flooding because it is more urbanized and has a greater amount of impervious surface area. Since the overwhelming majority of the rivers in the county flow through the unincorporated areas, these areas are usually the most impacted by the effects of riverine flooding. Detailed maps showing the identified flood zones for each jurisdiction are provided in Appendix A. Currently, the only communities within Lowndes County that do not participate in the NFIP are the cities of Dasher and Remerton. Their participation in the future is a mitigation strategy identified later within this plan. Lowndes County as well as the Cities of Hahira, Lake Park, and Valdosta have all adopted flood plain ordinances and have expressed their intent to continue their participation in the NFIP. The City of Dasher has adopted a flood plain management ordinance and has begun applying to the NFIP.

G. Overall HRV Summary of Events and Their Impact

Localized flooding caused by excessive storm water runoff is a major cause of flood damage in Lowndes County and its municipalities. During periods of unusually heavy rainfall, the local storm water infrastructure can quickly become overwhelmed and cause local creeks and streams to overflow their banks, causing property damage in designated floodplains and beyond. While river flooding is a less common occurrence, it affects larger bodies of water and a broader area. Therefore, it is often costlier in terms of property damage than localized flood events. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

II. High wind – hurricanes, tornadoes, thunderstorms

A. Identification of Hazard

High wind is air moving with considerable force from an area of higher pressure to an area of lower pressure. High wind events are considered likely to occur and cause damage in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, based on past experience, the FEMA-described methodology, and other factors. High wind events are subdivided in this plan into the categories of hurricanes, tornadoes, and thunderstorms.

Hurricanes and tropical storms are both types of tropical cyclones. Tropical cyclones are the general term used for all circulating weather systems over tropical water.[1] Tropical cyclones are destructive and have the potential to cause great damage and loss of life. They are divided into four major types: Hurricanes, Tropical Storms, Tropical Disturbances, and Tropical Depressions.

A hurricane, also known as a typhoon, is defined by NOAA's National Hurricane Center (http://www.nhc.noaa.gov/aboutgloss.shtml) as a tropical cyclone in which the maximum sustained surface wind (using the U.S. 1-minute average) is 64 kt (74 mph or 119 km/hr) or more. The term hurricane is used for Northern Hemisphere tropical cyclones east of the International Dateline to the Greenwich Meridian. The term typhoon is used for Pacific tropical cyclones north of the Equator west of the International Dateline.

A tropical storm is defined as tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) ranges from 34 kt (39 mph or 63 km/hr) to 63 kt (73 mph or 118 km/hr).

A tropical disturbance is a discrete tropical weather system of apparently organized convection -- generally 100 to 300 NMI in diameter -- originating in the tropics or subtropics, having a nonfrontal migratory character, and maintaining its identity for 24 hours or more. It may or may not be associated with a detectable perturbation of the wind field.

A tropical depression is defined as tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) is 33 kt (38 mph or 62 km/hr) or less.

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

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

SAFFIR-SIMPSON HURRICANE SCALE

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

Category	Wind Speed	Damage
1	74 - 95	Very dangerous winds will produce some damage
2	96 - 110	Extremely dangerous winds will cause extensive damage
3	111 - 129	Devastating damage will occur
4	130 - 156	Catastrophic damage will occur
5	> 156	Catastrophic damage will occur

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

Because of their location, Lowndes County and the cities are vulnerable to severe hurricanes/tropical storms forming in both the Atlantic Ocean and the Gulf of Mexico. Also due to location, hurricanes may degrade into tropical storms, tropical depressions, or tropical disturbances by the time they reach this area. These may or may not contain tornadoes or hail. 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.

A **tornado** is defined by NOAA as a narrow, violently rotating column of air that extends from the base of a thunderstorm to the ground. Because wind is invisible, it is hard to see a tornado unless it forms a condensation funnel made up of water droplets, dust and debris. Tornadoes are the most violent of all atmospheric storms. (http://www.nssl.noaa.gov/education/svrwx101/tornadoes/)

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

The Enhanced Fujita Scale, implemented by the National Weather Service in 2007, is used to assign a tornado a rating based on estimated wind speeds and related damage. The wind speeds associated with the EF ratings are shown in the table

below. Because of the difficulty of measuring wind speeds inside a tornado, wind speeds are estimated based on the type of damage that occurs; more information is available on the NOAA website at http://www.spc.noaa.gov/faq/tornado/ef-scale.html.

ENHANCED FUJITA WIND DAMAGE SCALE

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

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

Tornadoes may occur at any time of year, although the peak "tornado season" for the Southern Plains is during May into early June. Tornadoes can occur due to inclement weather conditions, as a result of a passing front, or as part of thunderstorm or hurricane/tropical storm events. Tornadoes can occur at any time of the day or night, but according to NOAA, most tornadoes occur between 4:00 and 9:00 p.m. 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. (http://www.nssl.noaa.gov/education/svrwx101/tornadoes/)

Lowndes County and the Cities are all vulnerable to the effects of tornadoes. According to NOAA (https://www.ncdc.noaa.gov/climate-information/extreme-

events/us-tornado-climatology), an average of 30 tornadoes occur per year in Georgia.

Thunderstorms are defined by NOAA as rain showers during which thunder is heard. Wind is categorized, according to its strength and severity, using the Beaufort Wind Scale, developed in 1805 by Sir Francis Beaufort of the U.K. Royal Navy. The Beaufort Wind Scale is shown in the table below.
(Source: http://www.spc.noaa.gov/faq/tornado/beaufort.html)

Beaufort Wind Scale

Force	Wind (Knots)	Wind (Mph)	World Meteorological Organization (WMO) Classification	Appearance of Wind Effects	
				On the Water	On Land
0	Less than 1	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	4-7	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	8-12	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	13-18	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	19-24	Fresh Breeze	Moderate waves 4-8 ft. taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	25-31	Strong Breeze	Larger waves 8-13 ft., whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	32-38	Near Gale	Sea heaps up, waves 13-19 ft., white foam streaks off breakers	Whole trees moving, resistance felt walking against wind

Force	Wind (Knots)	Wind (Mph)	World Meteorological Organization (WMO) Classification	Appearance of Wind Effects	
				On the Water	On Land
8	34-40	39-46	Gale	Moderately high (18-25 ft.) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Twigs breaking off trees, generally impedes progress
9	41-47	47-54	Strong Gale	High waves (23-32 ft.), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	55-63	Storm	Very high waves (29-41 ft.) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	64-72	Violent Storm	Exceptionally high (37-52 ft.) waves, foam patches cover sea, visibility more reduced	Very rarely experienced; accompanied by widespread damage.
12	64+	73+	Hurricane	Air filled with foam, waves over 45 ft., sea completely white with driving spray, visibility greatly reduced	Devastation.

Historic data have been examined from various sources, including the National Climatic Data Center (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events. Each jurisdiction is equally vulnerable to this hazard. For further information, see the HAZUS Report in Appendix G.

B. Profile of Events, Frequency of Occurrences, Probability

Hurricanes/Tropical Storms

According to the NOAA Storm Events Database (see Appendix F), there are 10 reports of Hurricanes/tropical storms occurring in Lowndes County (including the Cities of

Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic Recurrence Interval is 7.10 years. This is a 14.08% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 0.3, the past 20-year frequency is 0.45, and the past 50-year frequency is 0.2 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 2 Hurricane/tropical storm events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

The three most recent tropical storm events to affect the community were storms that began as hurricanes in the Gulf of Mexico but were downgraded to tropical storm status by the time they reached Lowndes County. The names of the storms were Hermine (9/2/2016), Irma (9/10/2017), and Michael (10/10/2018). All three storms resulted in widespread damage, including downed trees, closed roads, downed power lines, widespread power outages, and extensive property damage.

Tropical Storm Hermine caused an estimated $3 million in damage to the pecan crop, with about 1,000 trees destroyed. Property damage estimates were around $1 million. About 31,000 county customers lost power. Up to 117,000 gallons of sewage spilled due to the sewer system being overwhelmed by heavy rain.

Tropical Storm Irma resulted in over 500 trees downed with 34 homes damaged and 60,000 customers without power. In addition, more than 5,000 pecan trees were destroyed. There was approximately 25,000 cubic yards of vegetative debris on public and private property. The total estimated property losses were around $9 million. Agricultural losses due to the pecan trees was estimated around $12.5 million based on one pecan tree being valued at around $2500.

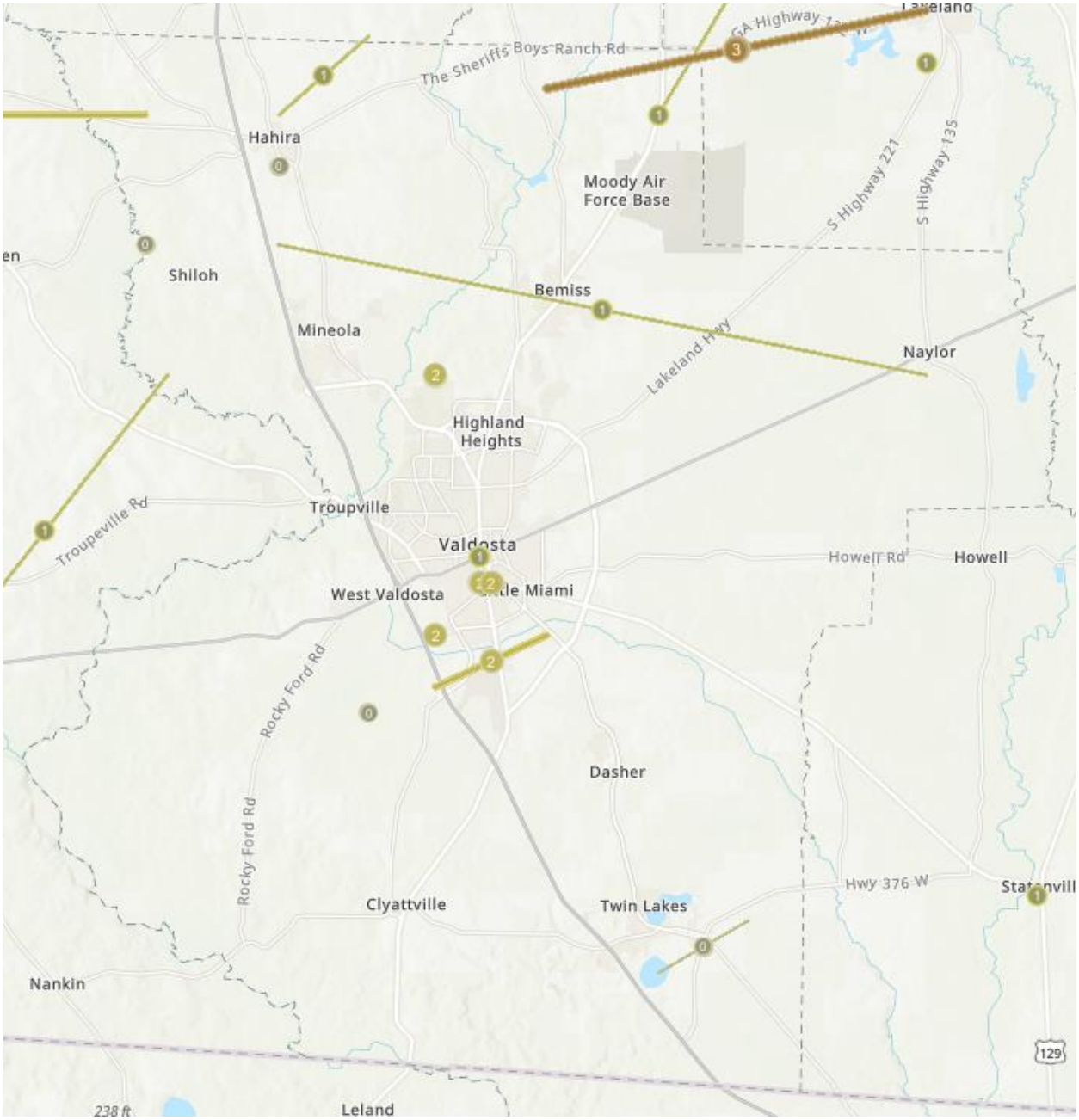
Hurricanes in the Gulf of Mexico have, in past, usually been downgraded to tropical storm status by the time they reach Lowndes County. The only storm in the NOAA database that still had hurricane status when it reached Lowndes County was Hurricane Dennis on 7/9/2005. Dennis caused an estimated $100,000 worth of damage in Lowndes County.

Tornadoes

According to the NOAA Storm Events Database (see Appendix F), there are 20 reports of Tornadoes occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic Recurrence Interval is 3.55 years. This is a 28.17% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 0.4, the past 20-year frequency is 0.3, and the past 50-year frequency is 0.26 (see the Hazard

Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 1 Tornado event has been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

Fatalities have occurred from tornadoes in adjacent counties in recent years, but Lowndes County has no tornado fatalities on record. However, a tornado on 12/29/2014 caused 9 injuries. The tornado first developed just north of Langdale's Pond and Old Clyattville Road on the south side of the City of Valdosta. Some of the most severe damage was near the beginning of the track as the tornado impacted Langdale Forest Products along Old Clyattville Road. Several large metal buildings were severely damaged or destroyed and the damage to those buildings was assigned the EF2 rating that is the maximum for this tornado. Some vehicles parked near those buildings were tossed around 70 yards across the street. Two rail cars nearby were also tipped over. The remainder of the track consisted of EF0 or EF1 damage as the tornado moved east and eventually dissipated near south Patterson Street and Dampier Street. That damage in the remainder of the track was a mixture of damage to buildings, trees, and power lines. Monetary damage was estimated. This was the first tornado to directly affect the city of Valdosta since an F1-rated tornado on November 1, 1997.



Tornado tracks (source: https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=ae96a522f2824552b20cdcf53a30d3c1)

Thunderstorms

According to the NOAA Storm Events Database (see Appendix F), there are 305 reports of Thunderstorms occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic Recurrence Interval is 0.23 years. This is a 429.58% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is

20.3, the past 20-year frequency is 12.7, and the past 50-year frequency is 5.88 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 68 Thunderstorm events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

Several recent thunderstorms have caused localized power outages, downed power lines, downed trees on roads and structures, road closures, and property damage. For example: On 8/24/2020, a storm blew a steeple off a church on Knights Academy Road in Lowndes County and blew a tree onto a power line in Remerton. On 7/30/2020, Power lines were blown down on Val Tech Road in front of Wiregrass Technical College. In a storm on 3/31/2020, a tree blew down and damaged a bridge near the intersection of Chancy Drive and Old Highway 41 North.

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

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

E. Land Use and Development Trends

Lowndes County and each of its municipalities currently adopt the nationally recognized codes and standards with regards to wind loading. Beyond the wind loading requirements, there are no known land use and/or development trends that relate to the effects of high winds on property.

F. Multi-Jurisdictional Differences

Due to the random nature of hurricanes, tropical storms, tornadoes and thunderstorms that are the primary producers of wind-related damage, Lowndes County and each of the municipalities are all at equal risk of sustaining damage related to this particular hazard. As such, there are no known differences found from one jurisdiction to another. Maps detailing the wind hazard zones for each jurisdiction can be found in Appendix A.

G. Overall HRV Summary of Events and Their Impact

Historically, Lowndes County has been impacted by some type of high wind event several times annually. Often this is due to a severe thunderstorm, but it can also be related to tropical storm or tornado. During these events, people residing in manufactured housing and/or older homes that may not have been designed and built according to current wind loading standards are especially vulnerable. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

III. Lightning

A. Identification of Hazard

Lightning is the discharge of electricity from cloud to ground and is most commonly associated with thunderstorms. The discharge is usually vertical from the cloud to ground, but can occur at angles from the storm, extending a good distance from the storm. Lightning results in an average of 51 deaths nationwide each year.

B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (see Appendix F), there are 12 reports of Lightning events occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic Recurrence Interval is 5.92 years. This is a 16.90% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 0.7, the past 20-year frequency is 0.55, and the past 50-year frequency is 0.24 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became

effective, 3 Lightning events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

Lightning events have caused one recorded fatality in the community. On 9/7/2014, a 57-year-old man was struck by lightning at a construction site in Lowndes County while sheltering under a pole barn. He then suffered a heart attack and died as a result of the lightning strike. Other recent events include a lightning strike on 8/24/2019 in Valdosta that struck two houses and caused $10,000 in property damage. Also, according to the Community Wildfire Protection Plan (see Appendix C), lightning caused 4 fires between 2007 and 2016, resulting in 27.2 acres being burned.

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

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

E. Land Use and Development Trends

There are currently no land use or development regulations in Lowndes County or any of its municipalities that deal with lightning hazards.

F. Multi-Jurisdictional Differences

Due to the random nature of lightning strikes, the probability of lightning affecting any particular jurisdiction is equal to that of any other. Based on this fact, there are no differences related to any one particular jurisdiction as a result of lightning hazards.

G. Overall HRV Summary of Events and Their Impact

Lightning is a killer in Lowndes County and is very dangerous to those individuals outdoors near thunderstorms. The high frequency of thunderstorms in Lowndes County increases the risk of individuals being struck and of property being damaged. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

IV. Wildfire

A. Identification of Hazard

A wildfire is a large, destructive fire that spreads quickly over woodland or brush. It can be caused by human negligence (for example, campfires that are not properly put out, or discarded cigarette butts that are not extinguished), by human technology (for example, faulty power lines), or by natural causes (most commonly lightning). Although naturally occurring wildfires are a part of many ecosystems, they cause problems when they threaten human habitation and when they are caused by humans.

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

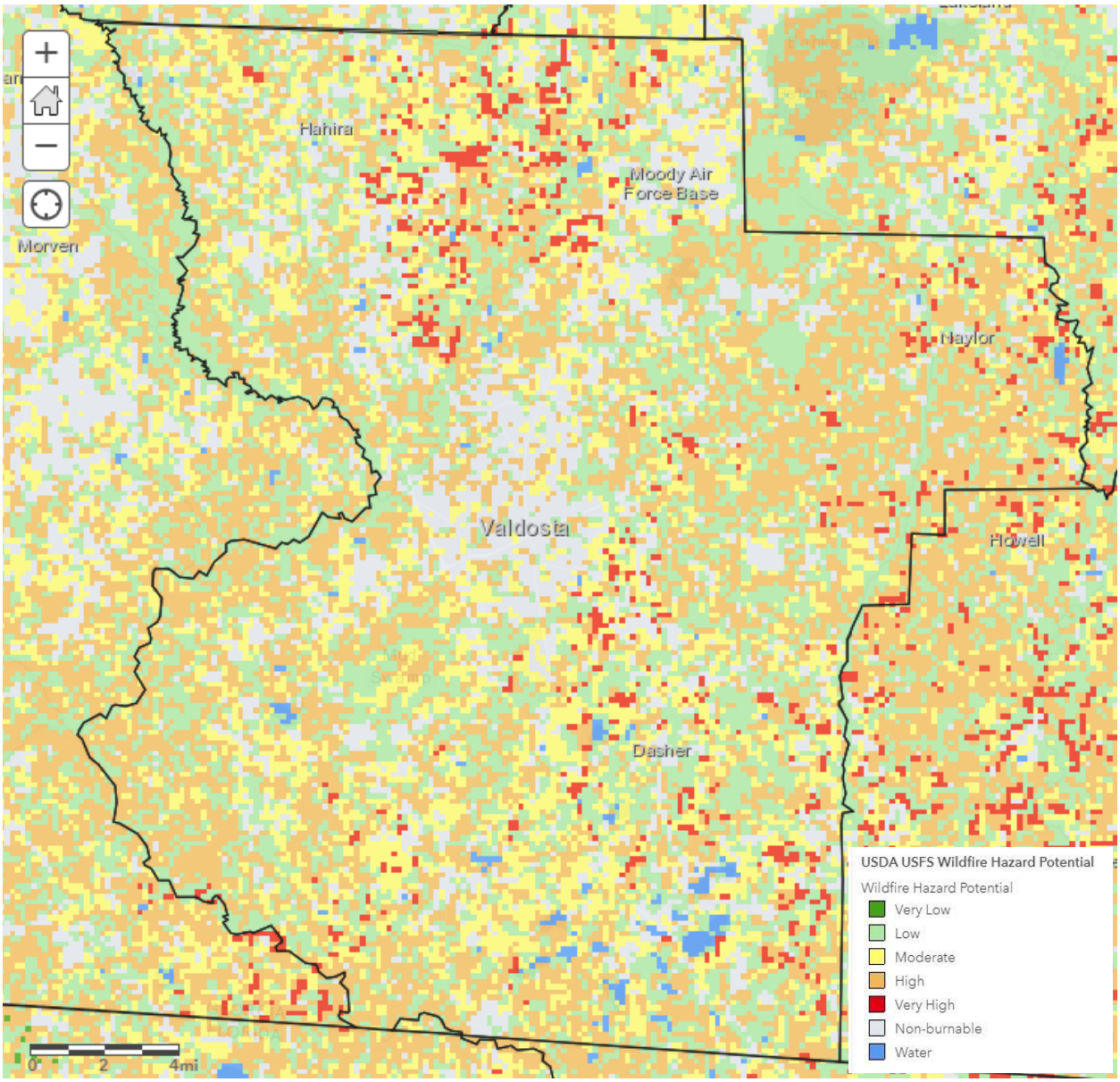
Much of southern Georgia is covered by forests, and fires play an important role in the health of forest ecosystems by breaking down organic matter into soil nutrients and helping seeds to germinate (source: NASA, https://earthobservatory.nasa.gov/Features/GlobalFire/fire_2.php). When naturally occurring wildfires are suppressed, combustible fuel (such as dead leaves and

branches) accumulates in the forest. This increases the risk of larger, more destructive fire events in the future. Controlled, prescribed fires lower the risk of larger fire events and are beneficial to forest health (source: USDA, https://www.fs.usda.gov/detail/dbnf/home/?cid=stelprdb5281464).

Low humidity, lack of recent precipitation (or drought conditions), wind speed, and temperature are a combination of weather conditions that favor the kindling and spread of wildfires. A high fuel load (i.e. the accumulation of dead vegetation), in combination with the above, also provides for the kindling and spread of wildfires. A significant portion of land in Lowndes County is forested with commercial and free-growing pine trees and other trees. Portions of the forested area in the county are located within leased hunting areas which are locked. Some of the forested area is located within a secured/restricted area (Moody Air Force Base). Trees can and do catch fire frequently in both small and large fire events. A significant portion of the county's population lives in the area known as the "wildland-urban interface," or WUI which FEMA defines as "an area where human made structures and infrastructure (e.g., cell towers, schools, water supply facilities, etc.) are in or adjacent to areas prone to wildfire" (for more information, see: https://www.usfa.fema.gov/wui/).

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

Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are all vulnerable to the effects of wildfires. The USDA Forest Service assigns areas a Wildfire Hazard Potential (WHP) score of Very Low, Low, Moderate, High, or Very High. As the map below shows, areas in Lowndes County range from Non-burnable to Very High.



Data Source: USDA Forest Service and Fire Modeling Institute
https://www.arcgis.com/home/item.html?id=f291ac4840984de5a0cf842d8d7a0973

B. Profile of Events, Frequency of Occurrences, Probability

Although the NOAA Storm Events Database reports zero wildfire events in Lowndes County (see Appendix F), according to the Lowndes County 2018 Community Wildfire Protection Plan there are 6552 reports of Wildfires occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 1964 and 2016 (the most recent data available). The Historic Recurrence Interval is 0.01 years. This is a 126% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 51.6, the past 20-year frequency is 88.8, and the past

50-year frequency is 111.12 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, an estimated 204 Wildfire events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

From 2007 to 2016, according to the Community Wildfire Protection Plan, 2,145 acres burned due to wildfires. According to local reports, these events have resulted in some homes being evacuated and damaged, roads closed, and power lines affected.

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

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, 254 of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $736,662,328.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

E. Land Use and Development Trends

At this time, the land use and development ordinances of Lowndes County and its municipalities do not deal with wildfires. There are no known existing land use or development trends that would be affected by wildfires.

F. Multi-Jurisdictional Differences

The City of Remerton is the only jurisdiction identified as being completely within a zone with a risk score of 0. The rest of the jurisdictions have at least a marginal area identified as being at risk of damage resulting from wildfire. The primary concern within the municipalities is from the wildland-urban interface areas, while Lowndes County has the greatest amount of forested area. In the Lowndes County Community Wildfire Protection Plan, all areas of the county were assigned an equal Wildfire risk assessment score of 44, placing Lowndes County in the "Low" hazard range.

G. Overall HRV Summary of Events and Their Impact

Wildfire is a constant threat within Lowndes County. The large area of forested woodlands combined with a large wildland-urban interface area makes Lowndes County and its municipalities especially vulnerable to wildfire damage. Lowndes County firefighters respond to dozens of wildfires annually, and with an increasing number of Critical Fire Weather days each year, the efforts to control these wildfires become increasingly difficult. The County Board of Commissioners have adopted a resolution encouraging landowners to utilize prescribed burning techniques in order to reduce fuel load. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

V. Extreme heat/cold

A. Identification of Hazard

Extreme heat is defined as an unusually high temperature for the location, and extreme cold is defined as an unusually low temperature for the location.

High heat and humidity often occur beginning in late spring and sometimes occurring as late as the early fall months. The frequency and duration of these conditions varies, but in general they are a constant threat for several months out of every year. These elevated temperatures pose a number of significant risks, such as heat exhaustion and/or stroke, to those exposed to their effects.

Extreme cold generally refers to hard freezes when temperatures drop well below freezing (26 degrees or lower) for several hours per day. These temperatures are usually the result of a cold front moving through the area, and the speed with which the front passes determines the length and severity of the extreme temperatures. Extreme cold events can be accompanied by winter weather conditions such as sleet, snow, and freezing rain, which results in ice on roads. This can result in a spike in traffic crashes and slip-and-fall injuries. Also, low temperatures are especially risky

for the low-income, elderly, and homeless, who may not have adequate means of heating to protect themselves from the dangerous effects of freezing temperatures.

B. Profile of Events, Frequency of Occurrences, Probability

Extreme Heat

According to the NOAA Storm Events Database (see Appendix F), there are 2 reports of extreme heat occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic Recurrence Interval is 35.50 years. This is a 2.82% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 0, the past 20-year frequency is 0.1, and the past 50-year frequency is 0.04 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 0 extreme heat events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

During one event on 7/31/2010, the heat index peaked at 113 degrees at the Valdosta airport at 1 pm EDT and remained above 110 degrees through 3 pm EDT. This resulted in dangerous high-heat conditions throughout the community, especially for residents without air conditioning.

Extreme Cold

According to the NOAA Storm Events Database (see Appendix F), there are 3 reports of extreme cold occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. These included two winter storm events on 1/28/2014 and 1/3/2018; and one frost/freeze event on 3/16/2017. The Historic Recurrence Interval is 23.67 years. This is a 4.23% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 0.3, the past 20-year frequency is 0.15, and the past 50-year frequency is 0.06 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 2 Extreme cold events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

A winter storm event on 1/28/2014 caused $50,000 in property damage as well as ice on roads, power outages, and treacherous road conditions. During another event, on 1/3/2018, all bridges and overpasses in the city of Valdosta were closed due to icy conditions. Around 105 accidents were reported in Lowndes County during the

event, which is the most local officials could ever remember occurring in the county during one day.

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

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

E. Land Use and Development Trends

At this time, the land use and development ordinances of Lowndes County and its municipalities do not deal with extreme heat or extreme cold. There are no known existing land use or development trends that would be affected by these extreme temperatures.

F. Multi-Jurisdictional Differences

Since temperature and climate are widespread factors and not localized to a particular jurisdiction, Lowndes County and each of the municipalities are equally affected by the effects of extreme temperatures. As such, there are no major differences affecting one jurisdiction more than another.

G. Overall HRV Summary of Events and Their Impact

Extreme heat, high humidity, and extremely cold temperatures have been and will continue to be a hazard to the entire population of Lowndes County for a number of years. Those that are required to be outside for extended periods of time, such as outdoor workers and the homeless, are especially vulnerable to the effects of these temperature extremes. Also at increased risk are the young, elderly, and those who have existing medical conditions which predispose them to the hazardous effects of extreme weather. This is often exacerbated for people with low income levels, who may not have homes with adequate heating and cooling to provide protection from these hazards. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

VI. Drought

A. Identification of Hazard

Drought is defined as a prolonged period of abnormally low rainfall, leading to a shortage of water. The threat of drought is considered by the stakeholders as likely to occur and cause damage in the community, based on past experience, the FEMA-described methodology, and other factors. Historic data have been examined from various sources, including the National Climatic Data Center and U.S. Drought Monitor (see Appendix F), as well as from local history and personal accounts, in order to determine the frequency of events.

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

Crops (including trees) are usually most adversely affected by drought events, along with community residents whose water supplies are restricted or cut off (especially those using individual wells). Residents of most of unincorporated Lowndes County and the City of Dasher have wells, which may go dry during drought periods, thus leaving those residents without water for extended periods of time. The Cities of Hahira, Lake Park, Remerton, and Valdosta have local water systems, as do some areas of unincorporated Lowndes County.

The U.S. Drought Monitor (http://droughtmonitor.unl.edu), established in 1999, is a weekly map of drought conditions that is produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln. The U.S. Drought Monitor website is hosted and maintained by the NDMC. The Drought Monitor summary map identifies general drought areas, labelling droughts by intensity, with D1 being the least intense and D4 being the most intense. Descriptions of these categories are provided in the table below (source: http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx).

Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: ▪ short-term dryness slowing planting, growth of crops or pastures Coming out of drought: ▪ some lingering water deficits ▪ pastures or crops not fully recovered
D1	Moderate Drought	▪ Some damage to crops, pastures ▪ Streams, reservoirs, or wells low, some water shortages developing or imminent ▪ Voluntary water-use restrictions requested
D2	Severe Drought	▪ Crop or pasture losses likely ▪ Water shortages common ▪ Water restrictions imposed
D3	Extreme Drought	▪ Major crop/pasture losses ▪ Widespread water shortages or restrictions
D4	Exceptional Drought	▪ Exceptional and widespread crop/pasture losses ▪ Shortages of water in reservoirs, streams, and wells creating water emergencies

Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are all equally vulnerable to the effects of drought.

B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (see Appendix F), there are 28 reports of Drought occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic

Recurrence Interval is 2.54 years. This is a 39.44% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 2.5, the past 20-year frequency is 1.35, and the past 50-year frequency is 0.56 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 3 Drought events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

Most of these drought events in Lowndes County have caused low water levels (including in residential wells), crop losses, and wildfire-prone conditions.

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

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

E. Land Use and Development Trends

The land use and development ordinances of Lowndes County and its municipalities do not deal with the assurance of domestic water sources. There are no known existing land use or development trends that would be affected by drought.

F. Multi-Jurisdictional Differences

A potential drought would affect residents of areas served by on-site wells more severely than residents with access to municipal water systems. As such, unincorporated Lowndes County and the City of Dasher are more vulnerable to the effects of drought than the Cities of Hahira, Lake Park, Remerton, and Valdosta.

G. Overall HRV Summary of Events and Their Impact

Currently there is an adequate supply of water for Lowndes County and its residents to draw on. As Lowndes County and surrounding areas continue to grow, the adequacy of that supply will need to be constantly and consistently monitored to ensure that remains to be true. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

VII. Sinkholes

A. Identification of Hazard

Sinkholes are natural depressions in the ground caused by the collapse of the surface into a void. The void is normally attributed to the dissolving of subsurface material by the movement of water. Sinkholes occur more readily in regions with limestone subsurface. The final collapse of the ceiling over a cavern, developing a sinkhole, is normally precipitated by heavy rains.

B. Profile of Events, Frequency of Occurrences, Probability

According to local data, there is 2 report of sinkholes occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic Recurrence Interval is 35.50 years. This is a 2.82% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 0.2, the past 20-year frequency is 0.1, and the past 50-year frequency is 0.04 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 0 sinkhole events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or

underreported. Data are not readily available that would allow us to break down the loss potential accurately at the individual jurisdiction level.

The most recent instance of a sinkhole forming, in August 2015, resulted in a road closure, and an earlier sinkhole event caused a county-maintained road to collapse and resulted in the road being realigned, costing the local government $300,000.

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

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

E. Land Use and Development Trends

The land use and development regulations of Lowndes County and its municipalities do not address sinkhole potential. There are no known existing land use or development trends that relate to sinkholes.

F. Multi-Jurisdictional Differences

Because the location of potential sinkhole formation cannot be predicted with any degree of certainty or accuracy, they remain a threat to each jurisdiction within Lowndes County equally.

G. Overall HRV Summary of Events and Their Impact

The risk of developing caverns underground and close to the surface is unknown in Lowndes County. In the southern part of Lowndes County, several sizable lakes were created from sinkholes. Smaller sinkholes have occurred in Valdosta. Because of the lack of data and analysis, the true risk is unknown. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

VIII. Hail

A. Identification of Hazard

Hail is formed when updraft currents within a thunderstorm carry water droplets to an altitude where freezing occurs. When these frozen ice particles become too heavy, they fall to the ground in the form of hail stones. Hail can range in size from very small (pea sized) to large stones in excess of an inch in diameter. Generally speaking, the larger stones are associated with more severe storms.

Hail causes over $1 billion in crop and property damage across the US each year. Fortunately, it has not historically been the cause of high amounts of damage in Lowndes County, but with each storm the potential is still present. The greatest threat to crops is mainly to the numerous pecan orchards and cotton fields present in the area.

B. Profile of Events, Frequency of Occurrences, Probability

According to the NOAA Storm Events Database (see Appendix F), there are 49 reports of Hail occurring in Lowndes County (including the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta) between 01/01/1950 and 12/31/2020. The Historic Recurrence Interval is 1.45 years. This is a 69.01% Historic Frequency Chance per year. The past 10-year Record Frequency per Year is 1.5, the past 20-year frequency is 1.55, and the past 50-year frequency is 0.92 (see the Hazard Frequency Table in Appendix D). Since the previous Hazard Mitigation Plan became effective, 2 Hail events have been reported. Although the most complete available data were used for this analysis, the possibility remains that other events may have occurred in the community that went unreported or underreported.

A recent hail event (on 7/12/2016) included quarter-size hail being observed in Valdosta. Some damage to vehicles was reported locally. Also, on 5/3/2016, golf ball sized hail (1.75-inch diameter) was reported in Remerton and Valdosta. Roof and vehicle damage occurred.

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

In Worksheet 3A: Inventory of Assets (appearing in Appendix A), we estimate that all of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta are equally vulnerable to this hazard. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

E. Land Use and Development Trends

None of the jurisdictions within Lowndes County currently have any land use or development regulations that pertain to hail.

F. Multi-Jurisdictional Differences

Since hail is no more common to one area than another, there are no major jurisdictional differences related to this hazard.

G. Overall HRV Summary of Events and Their Impact

While not the greatest threat within Lowndes County, hail is another of the many threats faced annually from the numerous Thunderstorms that impact the local area. Hail has the potential to cause large amounts of damage alone, but it is also often a precursor to damaging Thunderstorm Winds and, on occasion, Tornadoes. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

IX. Public Health Emergency

A. Identification of Hazard

A public health emergency is an event that impacts the health of a significant portion of the population. Public Health emergencies can occur at any time without warning. Examples of public health emergencies arising from natural causes include disease outbreaks (including pandemics and food-borne illnesses) and poisoning from naturally occurring environmental factors. Public health emergencies may occur by themselves or may occur secondary to other natural hazards, for example when flooding leads to contamination of drinking water supplies. Public health emergencies may also be man-made (for example, chemical spills, radiation incidents, bioterrorism, or inadvertent release of a novel virus).

The events of the year 2020 have shown that a public health emergency can be the greatest threat by far to a community's local economy and wellbeing. At the time of writing, the effects of the COVID-19 pandemic are continuing to be felt in Lowndes County.

Other disease outbreaks have occurred in recent years, including the 2015-2017 Zika virus outbreak in South and Central America and the 2014-2016 Ebola outbreak in Africa. While these outbreaks did not directly affect the community, the potential remains for Lowndes County to be affected by an outbreak in the future.

Due to Lowndes County's humid subtropical climate, mosquito-borne illness is a greater hazard here than in many other parts of the country. Levels of exposure to mosquito-borne illness depend on several factors, including:

- Presence and prevalence of an illness-causing mosquito-borne virus;
- Presence of mosquitoes, which may be exacerbated both by natural standing water (such as lakes and ponds) and by standing water in man-made structures, such as old tires, buckets, and other containers;
- Human exposure to mosquito bites, which may be influenced by factors such as the use of insect repellent, the amount of time spent outside, and the availability of air conditioning and window screens in residences.

B. Profile of Events, Frequency of Occurrences, Probability

The COVID-19 pandemic of 2020 is by far the most significant public health emergency to affect the community. As of Dec. 3, 2020, 6,509 cases of COVID-19 had been reported in Lowndes County, and 127 deaths.[2] As of the same date, South Georgia Medical Center had discharged 865 inpatients with a positive COVID-19 test result and 174 COVID-19 inpatients had died at SGMC.[3] In addition, a statewide lockdown during the spring of 2020 had a profound economic impact on the community resulting in widespread business closures. School closures disrupted parents' ability to work and the shift to remote learning impacted K-12 students and college students alike.

Before the COVID-19 pandemic, no major public health emergency had occurred in Lowndes County in recent memory. However, the effects of communicable diseases that are generally considered more routine should not be discounted. For example, in 2018, 1,530 Georgians died from influenza.[4]

The effects of longer-term, slower-acting public health crises can be insidious and likewise should not be discounted. For example, an estimated 38% of adults in Lowndes County have obesity[5] and therefore may be more predisposed to associated health problems such as high blood pressure, type 2 diabetes, heart disease, and stroke. Underlying health conditions can greatly increase an individual's vulnerability to communicable disease, as has become evident during the COVID-19 pandemic. Preventive measures to reduce the population's vulnerability to disease include not only vaccination and medications, but also an increase in the opportunity to pursue healthy lifestyles with access to healthy food and exercise. Such measures are included in local plans, including the "Active, Healthy Lifestyles Policy" in the Valdosta-Lowndes Metropolitan Planning Organization's *Transportation Vision Plan*.

In addition, many identified natural hazards in Lowndes County have the potential to lead to secondary public health emergencies. These include but are not limited to:

- Large numbers of injuries requiring treatment after an extreme weather event
- Contamination of drinking water, food supplies, and/or living spaces due to Flooding
- Health effects resulting from extreme heat/cold events

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[2] Johns Hopkins University Coronavirus Resource Center. https://coronavirus.jhu.edu/us-map

[3] South Georgia Medical Center. Daily COVID-19 Report. https://www.sgmc.org/covid19report/

[4] CDC. Influenza/Pneumonia Mortality by State. https://www.cdc.gov/nchs/pressroom/sosmap/flu_pneumonia_mortality/flu_pneumonia.htm

[5] County Health Rankings. https://www.countyhealthrankings.org/app/georgia/2020/measure/factors/11/data

- Health effects resulting from people being displaced/homeless due to a natural hazard event

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

Public health emergencies represent a threat primarily to people rather than to infrastructure. As such, the entire population of Lowndes County (117,406 as of 2019) is vulnerable to a public health emergency.

Systems that may be overwhelmed by a public health emergency include the health care system, emergency response systems, and any institutions and businesses that may be impacted by their personnel becoming unavailable due to illness. As such, all businesses and organizations in Lowndes County, and all sectors of the economy, are vulnerable to a public health emergency.

E. Land Use and Development Trends

A wide range of land use and development regulations act to protect public health in Lowndes County, such as animal control ordinances, plumbing codes, solid waste management regulations, and zoning regulations that minimize incompatible land uses. All such regulations contribute to reducing the likelihood of a public health emergency.

F. Multi-Jurisdictional Differences

Jurisdictional differences in vulnerability to public health emergencies depend on the nature and severity of the emergency, and on the mitigation measures in place. For example, communities not covered by any active mosquito control program may be more vulnerable to outbreaks of mosquito-borne illness. The Cities of Valdosta and Remerton are generally more vulnerable to public health emergencies that are exacerbated by higher population density. A face mask ordinance was passed in Valdosta in 2020 to reduce spread of the coronavirus.

G. Overall HRV Summary of Events and Their Impact

The entire population of Lowndes County is conceivably at risk from a public health emergency. The level of risk depends on the emergency type and severity and the measures that are in place to control and respond to it. Some types of public health emergency are impossible to predict and occur swiftly, leaving little or no time to respond. Others are more gradual in their onset, and mitigation measures can be put in place ahead of time.

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

Summary of changes:

The data and information for the "CBRNE" section has been updated and the "Public Health Emergency" hazard was moved to the Natural Hazard Chapter. Additionally, the "Dam Failure" hazard has been moved to the Local Technological Hazard Chapter. Five new hazards have been added to this section: Civil disturbances, active shooter, cyberattacks, aircraft incidents, and traffic crashes.

I. CBRNE

A. Identification of Hazard

CBRNE refers to Chemical, Biological, Radiological, Nuclear, and Explosives.

Chemical

A chemical weapon is a device that uses chemicals formulated to inflict death or harm to human beings. They may be classified as weapons of mass destruction. They are different from biological weapons, nuclear weapons (which use sub-nuclear fission), and radiological weapons (which use radioactive decay of elements). Chemical weapons can be widely dispersed in gas, liquid, and solid forms and may easily affect people other than the intended targets. Nerve gas and tear gas are two modern examples.

For our purposes, this category could also include a wide variety of chemicals including gasoline/diesel fuels, pesticides, etc., that are transported by rail, truck, or other means through the area, or are stored and used for business, manufacturing, or agricultural purposes.

Biological

A biological agent — also called bio-agent or biological threat agent — is a bacterium, virus, prion, or fungus that can be used purposefully as a biological weapon in bioterrorism or biological warfare (BW). In addition to these living and/or replicating pathogens, biological toxins are also included among the bio-agents. More than 1,200 different kinds of potentially weaponizable bio-agents have been described and studied to date.

Biological agents have the ability to adversely affect human health in a variety of ways, ranging from relatively mild allergic reactions to serious medical conditions, including death. Many of these organisms are ubiquitous in the natural environment where they are found in water, soil, plants, or animals. Bio-agents may be amenable to weaponization to render them easier to deploy or disseminate. Genetic modification may enhance their incapacitating or lethal properties, or render them impervious to conventional treatments or preventives. Since many bio-agents reproduce rapidly and require minimal resources for propagation, they are also a potential danger in a wide variety of occupational settings.

Radiological

A radiological weapon or radiological dispersion device (RDD) is any weapon that is designed to spread radioactive material with the intent to kill and cause disruption.

One version, known as a dirty bomb, is not a true nuclear weapon and does not yield the same explosive power. It uses conventional explosives to spread radioactive material, most commonly the spent fuels from nuclear power plants or radioactive medical waste.

For our purposes, this category could also include radiological materials that are transported through the community by truck or train, accidents caused by radiotherapy, and accidents resulting from material stored (or improperly disposed of) in medical devices or medical waste.

Nuclear

A nuclear weapon is an explosive device that derives its destructive force from nuclear reactions, either fission or a combination of fission and fusion.

Explosive

An explosive weapon generally uses high explosive to project blast and/or fragmentation from a point of detonation. Explosive weapons may be subdivided by their method of manufacture into explosive ordnance and improvised explosive devices (IEDs). Certain types of explosive ordnance and many improvised explosive devices are sometimes referred to under the generic term bomb. When explosive weapons fail to function as designed they are often left as unexploded ordnance (UXO).

B. Profile of Events, Frequency of Occurrences, Probability

No CBRNE events are known to have occurred in this community. All of Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton and Valdosta are potentially vulnerable to CBRNE events due to their proximity to the I-75 Corridor, various state highways and local roadways, railroad corridors, commercial, industrial and, in particular, agricultural based farms and businesses that may use hazardous chemicals. The effects of the hazard may be substantial.

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

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

E. Land Use and Development Trends

A wide range of laws and regulations act to protect the public in Lowndes County from CBRNE Events. All such regulations contribute to reducing the likelihood of a CBRNE Events.

The periodic addition of an industry which handles hazardous chemicals is typically limited to designated industrial locations. All quadrants of the county are potentially affected because of the presence of major highways and rail lines.

F. Multi-Jurisdictional Differences

The impact of a CBRNE event will be more severe in places with higher population density due to more people being in danger. Response times may be longer in remote areas. No other multi-jurisdictional differences have been identified at this time.

G. Overall HRV Summary of Events and Their Impact

The entire population of Lowndes County is conceivably at risk from a CBRNE Event. The level of risk depends on the emergency type and severity and the measures that are in place to control and respond to it. CBRNE are impossible to predict and occur swiftly, leaving little or no time to respond.

II. Civil Disturbances

A. Identification of Hazard

Civil unrest is unrest caused by a group of people. This includes any public disturbance involving acts of violence. Civil unrest may lead to damage or destruction of property and may cause injury or death. Civil unrest may arise directly from illegal activities such as sit-ins and riots, or may arise from activities that were initially legal, such as permitted parades and demonstrations.

Several instances of civil unrest have occurred in the United States in recent years, and it is possible for it to occur in any community. Widespread protests of police brutality across the United States began in May of 2020, sparked by the killing of George Floyd in Minneapolis. Ensuing protests resulting in at least 25 deaths.[6]

During potential force encounters, de-escalation techniques may stabilize the situation and reduce the immediacy of the threat so that more time, options, and resources can be called upon to resolve the situation without the use of force or with a reduction in the force necessary.[7]

B. Profile of Events, Frequency of Occurrences, Probability

The future probability of civil unrest cannot be accurately determined but could impact any part of the community. Isolated events of civil unrest have occurred in the community in recent years, generally with minimal impact. Valdosta State University was shut down due to a pro-patriotism demonstration in April 2015; the demonstration was in response to an earlier anti-racism demonstration.[8] The community has seen only one high-profile incident of alleged police brutality during the past few years. Improved community-police relations may help to prevent such events.[9]

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[6] *The Guardian.* "At least 25 Americans were killed during protests and political unrest in 2020." https://www.theguardian.com/world/2020/oct/31/americans-killed-protests-political-unrest-acled

[7] International Association of Chiefs of Police, National Consensus Policy and Discussion Paper on Use of Force; http://www.theiacp.org/Portals/0/documents/pdfs/National_Consensus_Policy_On_Use_Of_Force.pdf

[8] NBC. "American Flag Protest Shuts Down Valdosta State University." April 25, 2015. https://www.nbcnews.com/news/us-news/georgia-university-shuts-down-ahead-flag-protest-n347586

[9] WGXA. "Georgia officer denies wrongdoing in violent takedown of wrong man." Aug. 20, 2020. https://wgxa.tv/news/local/georgia-officer-denies-wrongdoing-in-violent-takedown-of-wrong-man

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

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

E. Land Use and Development Trends

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

F. Multi-Jurisdictional Differences

No differences between jurisdictions have been identified.

G. Overall HRV Summary of Events and Their Impact

Civil disturbances could impact Lowndes County and its cities at any time. Mitigation actions are outlined in Chapter 5.

III. Active Shooter

A. Identification of Hazard

An active shooter is an individual actively engaged in attempting to kill or killing people in a populated area. The risk of an active shooter is real and it can happen in any place at any given time. Taking steps now to prepare and implement a plan can better prepare those to react quickly when every second counts. The shootings are unpredictable and can evolve quickly.

Training opportunities for law enforcement officers are offered by the Georgia Public Safety Training Center (https://www.gpstc.org/)

B. Profile of Events, Frequency of Occurrences, Probability

The future probability of active shooter events cannot be determined, but any part of the community could be impacted. Gun deaths are a continual problem in the community, but mass shootings and active shooter events have historically been very rare. The most severe event in the community's history, with 1 person killed and 10 injured, occurred in 2009.[10] From 2014 to 2018, Lowndes County experienced 73 firearm fatalities per 100,000 population.[11]

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

Active shooter events represent a threat primarily to people rather than to infrastructure. As such, the entire population of Lowndes County (117,406 as of 2019) is vulnerable to an active shooter event. Vulnerable populations include, but are not limited to, K-12 students and college students, which together make up about a quarter of the county's population.

E. Land Use and Development Trends

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

F. Multi-Jurisdictional Differences

The impact of an Active Shooter event will be more severe in places with higher population density due to more people being in danger. Response times may be longer in remote areas. No other multi-jurisdictional differences have been identified at this time.

[10] WALB. "Valdosta Police make arrest in mass shooting." https://www.walb.com/story/11540350/valdosta-police-make-arrest-in-mass-shooting/

[11] County Health Rankings. https://www.countyhealthrankings.org/app/georgia/2020/measure/factors/148/data

G. Overall HRV Summary of Events and Their Impact

An Active Shooter event has the potential to harm people throughout Lowndes County. Mitigation Goals, Objectives, and Action Steps to lessen the impacts from this hazard are contained in Chapter 5.

IV. Cyberattacks

A. Identification of Hazard

A cyberattack is any type of offensive maneuver employed by individuals, groups, nation-states, or organizations that targets computer information systems, infrastructures, computer networks, and/or personal computer devices by various means of malicious acts usually originating from an anonymous source that either steals, alters, or destroys a specified target by hacking into a susceptible system.

Ransomware attacks are one of the types of cyberattacks that most frequently affect local governments. In a ransomware attack, a specific type of malware (malicious software) becomes installed on a victim's computer and/or computer network, most often through a phishing e-mail (an e-mail that appears to be from a trustworthy sender that includes an attachment containing the malware).

Ransomware attacks have caused considerable quantifiable damage to communities in the area in the past. For example, in 2019, the main computer network of the City of Lake City, Florida was infiltrated by ransomware. The City paid hackers approximately $500,000 in Bitcoin to retrieve their data.[12] The number of cyberattacks on state and local governments has increased by about 50 percent between 2017 and 2020.[13]

Personal computers may also be subject to hacking that leads to identity theft, theft of financial information, "phishing" (in which attackers obtain sensitive information by posing as a trustworthy entity), and other scams. Local governments, organizations, businesses, and individuals can all be victims of cyberattacks.

Other local systems that could be vulnerable to cyberattacks include utility systems (including water, sewer, electric, and gas), emergency operations systems. By shutting down these systems, cyber attackers could cause mass hysteria and confusion, as well as damage to the local economy, strain on local resources, and potential injury or death.

In pursuit of the community's goals of local preparedness, it is essential for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta to have reliable countermeasures to protect the community against the potential effects of cyberattacks.

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[12] Business Insider. "A Florida city was forced to use pen and paper and pay a $500,000 ransom after hackers took control of its computers." June 27, 2019. https://www.businessinsider.com/lake-city-florida-ransomware-cyberattack-hackers-bitcoin-payment-2019-6

[13] GCN. "Cyberattacks on state, local government up 50%." Sept. 4, 2020. https://gcn.com/articles/2020/09/04/cyberattacks-state-local-government-climbing.aspx

B. Profile of Events, Frequency of Occurrences, Probability

No known cyberattacks have impacted the community. However, attacks on individuals such as identity theft and ransomware often go unreported. Nearby cities have been impacted by ransomware attacks and have paid large amounts of money to hackers in order to have their data access restored. Cyberattacks could impact Lowndes County and its cities at any time.

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

The main assets exposed to this hazard are the community's finances, computer infrastructure, data, and the local economy.

E. Land Use and Development Trends

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

F. Multi-Jurisdictional Differences

No differences between jurisdictions have been identified.

G. Overall HRV Summary of Events and Their Impact

Cyberattacks could impact Lowndes County and its cities at any time. Mitigation actions are outlined in Chapter 5.

V. Aircraft Incidents (Military and Civilian)

A. Identification of Hazard

An aircraft incident is any incident associated with the operation of an aircraft that may cause injury, death, and/or property damage. This definition includes aircraft crashes as well as other hazardous incidents associated with aircraft operation, such as fuel leaks over populated areas. Most aircraft crashes are unintentional, while some are committed as acts of terrorism.

Aircraft crashes are hazardous first and foremost to the occupants of the aircraft, but can also cause injury and death to people on the ground. The 9/11 attacks are the most extreme example of this, but other aircraft incidents have caused injuries and fatalities on the ground in many places. One of the most severe such events in the United States was a mid-air collision of military aircraft in 1994 at Pope Air Force Base in North Carolina, which killed 24 people on the ground.[14]

Although direct impact from the aircraft may be considered the primary danger in aircraft incidents, there have also been incidents in which an aircraft caused damage without impact. For example, in January 2020 a passenger plane released several thousand gallons of jet fuel over a densely populated area of Los Angeles, causing skin and lung irritation in at least 56 people on the ground.[15]

B. Profile of Events, Frequency of Occurrences, Probability

With the presence of Valdosta Regional Airport and Moody Air Force Base, Lowndes County has a considerable amount of air traffic. Aircraft incidents could happen at any place and at any time.

At least two aircraft crashes have occurred in Lowndes County during the past 10 years, both involving small aircraft with one occupant (one crash occurred in 2012 and one in 2019; in both cases, the pilot was killed).

Several other non-fatal incidents have occurred in the county. In May 2020, a small plane made an emergency landing on Interstate 75 in Lowndes County.[16]

Several crashes related to the operations of Moody Air Force Base have occurred in Lowndes County and in nearby communities. Most recently, an A-10 jet made a belly landing at Moody Air Force Base in April 2020.[17] In March 2017, a training aircraft

[14] https://en.wikipedia.org/wiki/Green_Ramp_disaster
[15] https://en.wikipedia.org/wiki/Delta_Air_Lines_Flight_89
[16] https://www.fox5atlanta.com/news/plane-makes-emergency-landing-on-georgia-interstate
[17] https://www.airforcetimes.com/news/your-air-force/2020/04/08/a-10-forced-to-make-emergency-belly-landing-at-moody-afb/

from Moody Air Force Base crashed near Homerville, without causing any injuries or fatalities.[18] In 1990, a military jet crashed about a mile from Atkinson County High School, killing the pilot and one person on the ground.[19]

Due to the unpredictable nature of aircraft incidents, it is impossible to predict when and how often they will occur. Previous data show that these incidents are a hazard in this community.

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

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

E. Land Use and Development Trends

Lowndes County has Moody Activity Zones regulating land development in proximity to Moody Air Force Base. As the population continues to grow, it will continue to be important and challenging to maintain compatibility between the Air Force Base and surrounding residential areas.

F. Multi-Jurisdictional Differences

No differences between jurisdictions have been identified.

G. Overall HRV Summary of Events and Their Impact

With the presence of Valdosta Regional Airport and Moody Air Force Base, Lowndes County has a considerable amount of air traffic. Aircraft incidents could happen at any place and at any time.

[18] https://www.jacksonville.com/news/georgia/2017-03-07/pilots-who-ejected-moody-training-plane-crashed-monday-were-examined-and

[19] https://www.upi.com/Archives/1990/05/25/Military-jet-crash-kills-pilot-housekeeper/9810643608000/

VI. Traffic Crashes

A. Identification of Hazard

A traffic crash is any impact of a motorized vehicle with any other object, or any other incident related to motor vehicle operation that causes injury, death, or property damage.

B. Profile of Events, Frequency of Occurrences, Probability

The Valdosta-Lowndes Metropolitan Planning Organization publishes an annual crash report containing detailed analysis of crashes in Lowndes County. According to the VLMPO's 2020 crash report, from 2015 to 2019, there were 19,044 crashes in the Metropolitan Planning Area (which includes all of Lowndes County plus small portions of three other adjacent counties). There were 87 fatalities and 233 serious injuries.

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

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $ 1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties (15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

E. Land Use and Development Trends

As a rule, more traffic means more crashes. Due to low-density development and the segregation of land uses, most of the County's residents need to drive in order to reach most destinations. As the population of the County increases, this trend is likewise predicted to increase. Therefore, the number of traffic crashes can be expected to go up year by year.

F. Multi-Jurisdictional Differences

No differences between jurisdictions have been identified.

G. Overall HRV Summary of Events and Their Impact

Traffic crashes are a problem that has impacted the community greatly and will continue to impact it.

VII. Dam failure

A. Identification of Hazard

Dam Failure is the unplanned release of stored water in a lake causing rapid flooding conditions downstream. The flow of water is normally very rapid after the collapse of the dam, putting downstream structures and people at risk.

B. Profile of Events, Frequency of Occurrences, Probability

In the recorded history for Lowndes County there have been no reported failures of local dams. However, due to the number of dams present and their proximity to infrastructure and/or real property, they do pose a risk to the community in many cases. Many of the dams fall under the inspection and regulatory control of the Georgia Safe Dams Program, but there are many other private dams that are unregulated. Fortunately, the overwhelming majority of these pose no significant risk to life or property. Three of the most high-risk structures are the Millpond Dam structure, Jo Ree Lake Dam, and the Gung Lake Dam. Due to their high-risk status, all are closely monitored and have undergone extensive rehabilitation in recent years. Additional mitigation measures have also been implemented at these locations to ensure a minimal impact to the public in the event of failure. Other structures with some risk include the retention pond at Target, the retention pond at the Industrial Park, and the lift station on Gordon Road, which holds approximately 6 million gallons. Since there has never been a reported Dam Failure in Lowndes County, the probability of this occurring in the future remains at 0%.

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

We estimate that Lowndes County and the Cities of Lake Park and Valdosta are equally vulnerable to this hazard. There are no dams located in Dasher, Hahira, and Remerton however the City of Remerton is surrounded by the City of Valdosta, where dams are located. Due to the lack of data broken down by jurisdiction, it was not possible to obtain these data at the jurisdictional level, so the estimates provided are for Lowndes County including all the cities.

An estimated 100% of the Residential property (44,112 of 44,112) in Lowndes County (including the Cities) could be affected by this hazard, with a total value of $1,567,709,228. Also, an estimated 100% of the Commercial, Industrial, Agricultural, Religious/Non-Profit, Government, Education and Utility properties

(15,452 of 15,452) in the community may be affected, with a total value of $3,069,908,295. The values are based on the most recent available tax roll data for Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta, provided by the Lowndes County Tax Assessor's Office.

According to the inventory database, reports, and maps, all of the 349 Critical Facilities and Infrastructure for Lowndes County (including the Cities) could be affected by this hazard. The total value of these Critical Facilities is $1,227,831,885.

Damage to crops is not included in these figures. According to the Center for Agribusiness & Economic Development's 2018 Georgia Farm Gate Value Report (https://caed.uga.edu/content/dam/caes-subsite/caed/publications/annual-reports-farm-gate-value-reports/2018%20Farm%20Gate.pdf), the total farm gate value of agricultural production in Lowndes County is $88,560,208.

E. Land Use and Development Trends

Staff with the Planning and Engineering Departments of the various jurisdictions make available any and all information related to potential developers. However, there are no specific regulations in place in any jurisdiction with regard to land use and/or development near dams.

F. Multi-Jurisdictional Differences

The Cities of Dasher, Hahira, and Remerton have no identified dams within their jurisdiction. This leaves Lake Park, Valdosta, and unincorporated Lowndes County as the sole jurisdictions at risk of damage resulting from a Dam Failure within their incorporated limits. It would be possible that a dam within the City of Valdosta could impact properties located within the City of Remerton.

G. Overall HRV Summary of Events and Their Impact

While the complete picture is unclear, studies conducted by inspectors with the Georgia Safe Dams Program show that the threat to persons, structures, and other property within Lowndes County is minimal. In recent years, in areas with the highest risk potential, such as the Jo Ree Lake Dam, measures have been implemented to reduce the negative impacts to the surrounding areas in the event of Dam Failure. Since the previous plan was completed, there have not been any changes that would either increase or decrease the community's overall vulnerability to this hazard.

Chapter 4: Local Natural Hazard Mitigation Goals and Objectives

Overall Community Mitigation Goals, Policies, and Values Narrative

While Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta each operate autonomously, there is a high level of cooperation exhibited when it comes to 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 of the relevant local, regional and state partners together to develop effective plans and strengthen relationships among all of the stakeholders. Working together, the jurisdictions 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 more effectively mitigate hazards and provide more accurate warning and preparatory information to their citizens.

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

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

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

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

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

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

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

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

I. Flood

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained

in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #1 – Minimize Flood damage in Lowndes County.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Minimize losses to existing and future structures, especially critical facilities, due to Flooding caused by excessive rainfall.							
1. Identify areas within Lowndes County that are prone to localized Flooding and identify cost-effective options to protect structures from Flood damage	EMA, Public Works, Engineering, Utilities	Staff Time	Annual Budget	Lowndes County, all municipalities	2021-2026	Medium	Ongoing, reoccurring yearly
2. Identify critical facilities vulnerable to the effects of future Flooding events and incorporate the necessary measures to protect these facilities.	EMA, Engineering, Utilities, Public Works	$5 Million	Annual Budget, SPLOST, FEMA	Lowndes County and City of Valdosta	2021-2026	High	Ongoing, reoccurring yearly
3. Review data on storm events to determine where repetitive Flooding occurs as a result of inadequate drainage infrastructure.	Engineering and Public Works	Staff Time	Annual Budgets	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
4. Use available data to develop plan for correcting known deficiencies in these Flood prone areas.	Public Works and Engineering	$5 million	Annual Budget, SPLOST, FEMA	All jurisdictions	2019	Medium	Deferred, awaiting funding

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #2 - Make Flood insurance available to every resident of Lowndes County.							
5. Continue enforcing floodplain ordinances in the participating communities of Lowndes County, Hahira, lake Park and Valdosta	EMA	None	N/A	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
6. Adopt Floodplain ordinance to cover the jurisdictions of Dasher & Remerton.	EMA, Dasher City Council, Remerton City Council	None	N/A	Dasher Remerton	2021-2026	High	Ongoing, awaiting action by local government
7. Provide information to each of the participating communities on the benefits of participating in the Community Rating System.	EMA	None	N/A	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
Objective #3 - Protect and preserve Flood-prone areas for greenspace use, such as community parks and recreation areas.							
8. Monitor comprehensive land use plans to ensure mapping of lands to be permanently protected.	Planning	Staff Time	Annual budget	All jurisdictions	2021-2026	Low	Ongoing, reoccurring yearly
9. Monitor existing subdivision regulations to promote conservation of Floodplains, wetlands, and groundwater recharge areas.	Planning	Staff Time	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, reoccurring yearly

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
10. Educate public and private organizations on methods for preserving parks and recreation areas.	EMA, Planning, Public Information	Staff Time	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, reoccurring yearly
Objective #4 - Promote acquisition of Flood-prone areas.							
11. Identify and purchase Flood-prone and high-risk properties as a method of reducing future Flood damage losses.	EMA, Engineering, Board of Commissioners, Valdosta City Council	$10 million	Annual budget, SPLOST, FEMA	Lowndes County, Valdosta	2021-2026	Low	Ongoing, awaiting funding

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Minimize losses to existing and future structures, especially critical facilities, due to Flooding caused by excessive rainfall.							
Petition FEMA to conduct a detailed Flood study county-wide and update local Flood Insurance Rate (FIRM) Maps.	EMA, Engineering, Board of Commissioners and City Councils	Staff Time	Annual Budget	Lowndes County, all municipalities	2017	High	Complete
Identify alternative retention strategies.	Engineering	$500,000	Annual Budget, FEMA,	Lowndes County, Valdosta, Remerton, Hahira	2017	Medium	Complete
Explore Army Corps of Engineers recommendation to construct a levee and culvert structure at the confluence of the Withlacoochee River and Sugar Creek.	Public Works and Engineering	Staff Time	Annual Budget	Lowndes County	2018	Medium	Complete
Objective #3 - Develop Interactive Flood model for the major rivers within Lowndes County and Valdosta.							
Work with SGRC staff to collect GIS data on local impacts along rivers at various stream gauge levels.	EMA, Engineering	$250,000	Annual Budget, USGS, FEMA	Lowndes County, City of Valdosta	2018	Medium	Complete
Utilize historical data to develop projected Flood impact model to be used for planning and warning purposes.	EMA, VALOR	$50,000	Annual budget	All jurisdictions	2019	Medium	Complete
Utilize river gauges to establish Flood data.	EMA, Engineering, VALOR	Staff Time	Annual Budget	All jurisdictions	2016-2021	Medium	Complete

Objective #6 - Explore incorporation of increased buffers around natural features in Lowndes County.							
Evaluate existing regulations to determine if buffering around natural features is adequate.	Planning	Staff Time	Annual Budget	All jurisdictions	2016-2021	Low	Complete

II. High wind – hurricanes, tornadoes, thunderstorms

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

5. Existing Buildings and Infrastructure:

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #2 - Minimize damage caused by High Winds of Hurricanes and Tornadoes in Lowndes County.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Educate the public about Hurricane and Tornado safety precautions.							
1. Provide education to homeowners, businesses and builders on the function and importance of safe rooms in the home and workplace.	EMA, Public Information, Inspections	Staff Time	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, reoccurring yearly
2. Offer emergency preparedness training to citizens through programs such as the Community Emergency Response Team (CERT) training and the American Red Cross Citizen's Disaster Course.	EMA, ARC	$10,000	Annual Budget, FEMA, ARC	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
3. Provide education to local business owners on the importance of emergency plans for their businesses and provide assistance with developing their plans.	EMA, Public Information	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #2 - Reduce the potential impact of High Winds resulting from hurricanes and tornadoes on new and existing residences, buildings, and infrastructure.							
4. Work with local Public Works and Utilities to ensure that plans are in place to keep right of ways free of overhanging or dead limbs and other debris.	Public Works, Utilities	$100,000	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
Objective #3 - Ensure all existing and new institutional/public buildings are adequate to withstand sustained winds up to 109 mph.							
5. Conduct assessment of all public facilities, especially schools and large assemblies, to determine their ability to meet current wind load standards.	Engineering, Building Inspections	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
6. Install auxiliary generators for all critical infrastructure.	Utilities, EMA, Public Works	$1 Million	FEMA/Local Budgets	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
7. For structures that are deemed unsafe during High Winds, but retrofitting is not feasible, provide separate structure for emergency sheltering that meets the guidelines for community safe rooms.	Engineering	$3 Million	FEMA/Local Budgets	All jurisdictions	2021-2026	Medium	Ongoing, awaiting funding
8. Prewire manual transfer switches for generator use in infrastructure.	Utilities, EMA, Public Works	$1,000,000	FEMA/Local Budgets	All jurisdictions	2021-2026	Medium	Ongoing, awaiting funding

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Educate the public about Hurricane and Tornado safety precautions.							
Work with NWS to develop local Storm Ready Supporter program to help recognize businesses that meet established guidelines for emergency preparedness measures.	EMA	Staff Time	Annual Budget	All jurisdictions	January 2018	Low	Complete

Objective #3 - Ensure all existing and new institutional/public buildings are adequate to withstand sustained winds up to 109 mph.							
Encourage local governments and other public agencies to consider using the FEMA guidelines for Community Safe Rooms when designing new structures.	Planning, Engineering	Staff Time	Annual Budget	All jurisdictions	2016-2021	Medium	Delete (duplicate)
Consider relocating utilities underground.	Planning, Engineering	Staff Time	Annual Budget	All jurisdictions	2016-2021	Medium	Delete, determined to be unfeasible

III. Lightning

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #3 – Protect the citizens of Lowndes County from the threat of injury and other risks associated with Lightning strikes.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 – Conduct needs assessment and development implementation plan for installation of Lightning detection equipment for all public outdoor recreation facilities.							
1. Install Lightning detection and warning equipment at all public outdoor recreation facilities.	Public Works, Parks and Rec, Schools	$200,000	FEMA/Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
Objective #2 – Educate public on risks associated with Lightning and proper safety measures during Lightning storms.							
2. Incorporate Lightning safety into presentations and materials presented to public.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, reoccurring yearly

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 – Conduct needs assessment and development implementation plan for installation of Lightning detection equipment for all public outdoor recreation facilities.							
Provide technical and educational assistance to local businesses and organizations, which involve significant outdoor activity, on the feasibility and benefits of the installation of Lightning detection equipment.	EMA	Staff Time	Annual Budget	All jurisdictions	2016-2021	Low	Delete, determined to not be practical

IV. Wildfire

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #4 – Protect the citizens and property in Lowndes County from damage as a result of Wildfire.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #1 – Develop a comprehensive mapping system to identify areas at risk of Wildfire and incorporate this mapping into existing planning and land use regulations to provide greater protection in the wildland-urban interface areas.							
1. Continue to provide mapping data from the GMIS Critical Facilities Database to local Planning Agencies for incorporation into current planning documents.	EMA, VALOR	Staff time	Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
2. Request the Greater Lowndes County Planning Commission to consider the use of Urban/Wildland Interface in planning decisions.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, reoccurring yearly
Objective #2 – Follow the priorities set forth by the Georgia Forestry Commission CWPP to provide Education and Outreach for the Lowndes County community							
3. Encourage local developers and homeowner's associations to incorporate Firewise practices into new and existing developments.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
4. Conduct "How to Have a Firewise Home" Workshop for Lowndes County Residents.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, on hold due to pandemic
5. Conduct "Firewise" Workshop for Community Leaders.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, on hold due to pandemic
6. Hold a Spring Clean-up Event for removing flammable vegetation and debris.	EMA, Planning, Fire	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, on hold due to pandemic
7. Develop and distribute informational packets on Firewise practices.	EMA, Planning, Fire	$10,000	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
8. Hold an Open house at individual Fire Stations to promote Community Firewise Safety and develop community support and understanding of local fire departments and current issues.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, on hold due to pandemic
9. Invite the news media to community "Firewise" functions for news coverage and regularly submit press releases documenting Wildfire risk improvements in Lowndes County.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, on hold due to pandemic

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #3 – Following the priorities set forth by the Georgia Forestry Commission CWPP to provide Community Hazard and Structural Ignitability Reduction for the Lowndes County community							
10. Incorporate the requirement for a minimum of 30 feet of defensible space around all structures in Land Development ordinances.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
11. Reduce structural ignitability around applicable structures.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
12. Hold Community Cleanup Days and cut, prune and mow vegetation in shared community spaces.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
13. Ensure Right of Way clearance for emergency vehicles by maintaining vertical & horizontal clearance and seeing that adequate lengths of culvert are installed for driveway access.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
14. Identify needed road improvements and, as roads are upgraded, widen to minimum standards with at least a 50-foot diameter cul-de-sac or turnaround.	Planning	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
15. Amend and enforce existing building codes as they relate to skirting, propane tank location, public nuisances (trash/debris on property), Property address marking standards and other relevant concerns; Review Subdivision ordinances for public safety concerns; and Enforce the uniform addressing ordinance.	Planning	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
16. Continue to provide greater Burn Permit enforcement and education from the GA Forestry Comm.	Planning	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
Objective #4 – Following the priorities set forth by the Georgia Forestry Commission CWPP to provide Wildland Fuel Reduction for the Lowndes County community							
17. Reduce hazardous fuels in adjacent WUI lands by encouraging prescribed burning, particularly adjacent to residential areas, and seek grants for prescribed burning and a WUI Mitigation Team.	EMA, Planning, Fire	$35 an acre	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
18. Reduce hazardous fuels along railroad corridors by encouraging railroads to better maintain their ROW by elimination brush and grass through herbicide and mowing and Maintaining firebreaks along their ROW adjacent to residential areas.	EMA, Planning, Fire	$35 an acre	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
19. Reduce hazardous fuels along existing fire lines by cleaning and re-harrowing existing lines.	Fire	$35 an acre	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
Objective #5 – Following the priorities set forth by the Georgia Forestry Commission CWPP to Improve Community Wildland Fire Response for Lowndes County							
20. Inspect, maintain and improve access to existing dry hydrants; Add signage along road to mark dry hydrants; Locate additional dry hydrants as needed; and Locate and pre-clear helicopter dip sites.	EMA, Fire	$25,000	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
21. Continue to support VALOR GIS updates to mapping of roads and water sources.	Planning	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #6 – Improve Community Fire Response by providing necessary equipment, education and training							
22. Per the CWPP, Obtain Wildland hand tools, lightweight PPE and Wildland Fire Suppression Training and tools for fire personnel.	EMA, Fire	$500k	FEMA AFG	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
23. Address fire hazards raised by encampments in vacant lots.	EMA, Fire, Code Enforcement	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	New

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 – Develop a comprehensive mapping system to identify areas at risk of Wildfire and incorporate this mapping into existing planning and land use regulations to provide greater protection wildland-urban interface areas.							
Request the Greater Lowndes County Planning Commission to consider the use of Urban/Wildland Interface in the development of its comprehensive plan.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, Modify Language
Objective #2 – Follow the priorities set forth by the Georgia Forestry Commission CWPP to provide Education and Outreach for the Lowndes County community							
Create and exhibit a Wildfire Protection Display for the general public at Safety Day.	EMA, Planning, Fire	$5,000	Annual Budget	All jurisdictions	2021-2026	High	Delete, this event no longer held
Objective #3 – Following the priorities set forth by the Georgia Forestry Commission CWPP to provide Community Hazard and Structural Ignitability Reduction for the Lowndes County community.							
Create a minimum of 30 feet of defensible space around all structures.	EMA, Planning, Fire	Staff time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, Modify Language
Provide greater Burn Permit enforcement and education from the GA Forestry Comm.	Planning	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, Modify Language
Objective #5 – Following the priorities set forth by the Georgia Forestry Commission CWPP to improve Community Wildland Fire Response for Lowndes County							
Improve road signage at crossroads and install "Dead End", "No Outlet" and other signage on road signs.	Public Works, Road Dept.	$100 each	Annual Budget	All jurisdictions	2016-2021	High	Delete, practice has been amended
Objective #6 – Improve Community Fire Response by providing necessary equipment, education and training							
Per the CWPP, Obtain Wildland hand tools, lightweight PPE and Wildland Fire Suppression Training for fire personnel.	EMA, Fire	$300k	FEMA AFG	All jurisdictions	2021-2026	High	Ongoing, Modify Language
Per the CWPP, Create Lowndes County WUI Fire Council.	EMA, Fire	Staff Time	Annual Budget	All jurisdictions	2016-2021	High	Delete, lack of interest

Provide additional first responder & fire training, air unit chargers, PPE, SCBAs, Class A Pumpers & Fire Knocker trucks and other equipment to all Fire Departments for Wildfire use.	EMA, Fire	$1.5 M	FEMA AFG	All jurisdictions	2016-2021	High	Delete, redundant with item #22

V. Extreme heat/cold

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

5. Existing Buildings and Infrastructure:

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #5 – Ensure that the citizens of Lowndes County are adequately warned of and protected from conditions which involve extremely high or low temperatures.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 – Develop plans for providing suitable sheltering options during events involving extreme temperatures.							
1. Create a GIS map to identify facilities that may be used for sheltering during extreme temperature events.	EMA, ARC	Existing Staff	Annual budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
2. Develop a written plan to establish guidelines governing the criteria for opening and operating shelters during extreme temperature related events.	EMA, ARC, Public Health	Existing Staff	Annual budget	All jurisdictions	2021-2026	High	Ongoing, in progress
Objective #2 – Educate the public on issues related to these temperature extremes.							
3. Provide information to the public when extreme conditions are forecast by NWS officials to include information on signs, symptoms, and precautions to be taken as a result of extremely hot or cold conditions.	EMA, PIO, Public Health	Existing Staff	Annual budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 – Develop plans for providing suitable sheltering options during events involving extreme temperatures.							
Identify facilities that may be used for sheltering during extreme temperature events.	EMA, ARC	Existing Staff	Annual budget	All jurisdictions	2021-2026	Medium	Ongoing, Modify Language
Develop plan to establish guidelines governing the criteria for opening and operating shelters during extreme temperature related events.	EMA, ARC	Existing Staff	Annual budget	All jurisdictions	2021-2026	High	Ongoing, Modify Language

VI. Drought

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #6 - Ensure adequate drinking water supply is available during Drought conditions.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Provide temporary water supplies for domestic consumption as needed during Drought conditions.							
1. Develop a tiered plan to provide temporary water supplies for domestic consumption.	EMA, Utilities	Existing Staff	Annual budget	All jurisdictions	2018	High	Deferred, awaiting funding

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Provide temporary water supplies for domestic consumption as needed during Drought conditions.							
Develop tiered response plan to implement additional water restrictions when it is identified that Drought conditions exist.	EMA, Utilities	Existing Staff	Annual budget	All jurisdictions	2018	High	Complete

VII. Sinkholes

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

4. New Buildings and Infrastructure:

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

5. Existing Buildings and Infrastructure:

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #7 - Protect Lowndes County from the threat of Sinkholes.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Minimize the loss of life and property from Sinkholes.							
1. Conduct ground study of areas identified as being at risk for potential sinkhole formation.	Engineering	$10 million	Annual Budget	All jurisdictions	2020	Low	Deferred, awaiting funding
2. Include sinkhole study information in planning phase of new developments which may be affected by potential sinkhole formation.	Engineering, Planning	Existing Staff	Annual Budget	All jurisdictions	2016-2021	Low	Deferred, awaiting completion of action step #1

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Minimize the loss of life and property from Sinkholes.							
Include sinkhole study information in planning phase of new developments which may be affected by potential sinkhole formation.	Engineering, Planning	Existing Staff	Annual Budget	All jurisdictions	2016-2021	Low	Deferred, awaiting completion of action step #1

VIII. Hail

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. **Mitigation goal #9 – Prevent or reduce damage and injury caused by Hail in Lowndes County.**

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 – Minimize losses to existing and future structures, especially Critical Facilities and Infrastructure, due to Hail.							
1. Install storm windows and/or ballistic film on new and existing Critical Facilities and promote their installation on new and existing private buildings	Public Works	$750,000	General Funds, GEMA, FEMA, Red Cross	All jurisdictions	2021-2026	Medium	Ongoing, awaiting funding
2. Encourage the public to include Hail damage under insurance coverage and to store equipment and vehicles under shelters	EMA	Staff time	General Funds	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

New action steps are indicated in Subsection C: Mitigation Strategy and Recommendations. There are not any action steps for this hazard that were considered but ultimately not included.

IX. Public Health Emergency

A. Community Mitigation Goals

As previously indicated in Chapter 2, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #10 – Protect the population of Lowndes County from the effects of a public health emergency.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #1 – Minimize loss of life and harm to public health due to a public health emergency.							
1. Increase Immunization education, prevention and pre-planning efforts, particularly for the homeless and low-income individuals in the community, and host flu shot and other immunization clinics.	Health Dept.	$100,000	General Funds, GEMA, FEMA, Health Department	Lowndes County and all municipalities	2021-2026	High	Ongoing, reoccurring yearly
2. Identify vulnerable populations (homeless, migrants, low income, deaf, blind, etc.) and identify community groups to work with in order to reach and educate these populations effectively regarding health issues.	EMA, Health Dept.	Staff time	General Funds, GEMA, FEMA	Lowndes County and all municipalities	2021-2026	High	Ongoing, reoccurring yearly
3. Develop plan to identify community locations to obtain and distribute medical countermeasures and other public health resources.	EMA	Staff time	General Funds, GEMA	Lowndes County and all municipalities	2021-2026	Medium	Ongoing, reoccurring yearly
4. Approach local businesses about working with the EMA and Health Dept. on developing public health emergency plans.	EMA, Health Dept.	Staff time	General Funds	Lowndes County and all municipalities	2021-2026	Medium	Ongoing, reoccurring yearly
5. Explore the creation of a volunteer database that would be available to assist in the event of a public health emergency.	EMA, Health Dept.	Staff time	General Funds	Lowndes County and all municipalities	2021-2026	Medium	New

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included. This hazard was relocated to the Natural Hazard section of the plan from the Local Technological Hazard section.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Minimize loss of life and harm to public health due to a public health emergency.							
Develop Local Emergency Planning Committee	EMA	Staff time	General Funds	Lowndes County and all municipalities	2016-2017	Medium	Removing this item, moving to All Hazards section

X. All Hazards

A. Community Mitigation Goals

Ensuring that essential services are provided and critical facilities continue to operate during and following a hazard event is a primary goal of this plan. This includes ensuring that emergency services providers have the necessary resources to carry out their functions as needed. In addition, it is recognized that the public must have the ability to receive and act upon hazard warnings and information quickly, if lives and property are to be protected.

B. Identification & Analysis of Range of Mitigation Options

1. Structural and non-structural

Structural options include retrofitting critical facilities to ensure redundancy in the event of service failure, improving warning signage on I-75, and possibly acquiring new warning systems such as outdoor sirens and reverse 911. Non-structural options include identifying shelters and transportation options for special needs populations, and improving warning information access and distribution, such as website links, ham radio networks, radar, and emergency email.

2. Existing policies, regulations, ordinances and land use

As required by Georgia law, Lowndes County, and the cities of Valdosta, Dasher, Remerton, Hahira, and Lake Park have each adopted comprehensive plans in accordance with the Minimum Planning Standards promulgated by the Georgia

Department of Community Affairs. In addition, other measures to guide development, including Flood plain management ordinances, capital improvement planning, zoning ordinances and building codes are utilized.

3. Community values, historic, and special considerations
None identified.

4. New buildings and Infrastructure
The mitigation strategy and recommendations that follow include action steps designed to protect the health and safety of the general public from the effects of all hazards by improving warning systems, public knowledge, and emergency response procedures. Such steps indirectly protect new buildings and infrastructure from all hazards by ensuring advance preparation for the possibility of hazard events, and rapid emergency response to such events.

5. Existing Buildings and Infrastructure
The mitigation strategy and recommendations that follow include action steps designed to protect the health and safety of the general public from the effects of all hazards by improving warning systems, public knowledge, and emergency response procedures. Such steps indirectly protect existing buildings and infrastructure from hazards by ensuring advance preparation for the possibility of hazard events, and rapid emergency response to such events.

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #11 - Ensure the provision of essential utilities and the operation of critical facilities during a natural hazard event in Lowndes County.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Minimize loss to levels of service, especially with critical facilities, due to any identified natural hazard.							
1. Create a mapped GIS database of critical utilities within Lowndes County.	EMA	Existing Staff	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, reoccurring yearly
2. Provide backup utility systems for all critical facilities.	Engineering, Public Works	$5,000,000	FEMA/Annual Budget	All Jurisdictions	2021-2026	Medium	Ongoing, awaiting funding

2. Mitigation Goal #12 - Enhance the ability of the public to receive timely warnings and information about hazard events in Lowndes County.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1- Provide necessary and timely hazard warnings and information to the public.							
3. Educate public on the need for having a NOAA Weather Radio in every home and business and emphasize the NOAA Weather Radio System as the primary means to receive timely and accurate natural hazard warning information.	EMA, PIO	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
4. Increase public awareness of the warning and notification systems available community-wide such as NOAA weather radios, Code Red	EMA, PIO	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
5. Secure grant funding to acquire, distribute, and conduct educational campaign to assist residents with obtaining, programming, and operation of NOAA Weather Radios.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
6. Utilize social media platforms to increase awareness, engagement, and dispersion of hazard Mitigation Items.	EMA, PIO	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	New

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #2 - Bring warning information to special needs individuals and community.							
7. Incorporate methods for delivering emergency messaging to the special needs community (i.e. deaf, blind, non-English speaking, etc.) into emergency alert systems.	EMA, PIO	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
Objective # 3 – Evaluate the feasibility of alternative warning systems.							
8. Assess the feasibility of outdoor warning sirens for outdoor recreation areas.	EMA, Parks and Rec, Schools	$2,000,000	FEMA/Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
Objective # 4– Provide enhanced real time data on local weather events.							
9. Acquire and install weather monitoring stations in locations throughout the county.	EMA	$100,000	FEMA/Annual Budget	All jurisdictions	2021-2026	High	New
Objective # 5– Conduct needs and capability assessment to address community hazards.							
10. Develop Local Emergency Planning Committee	EMA	Staff time	Annual Budget	Lowndes County and all cities	2021-2026	Medium	New
11. Approach local businesses about working with the EMA on developing emergency plans.	EMA	Staff time	Annual Budget	Lowndes County and all cities	2021-2026	Medium	New
12. Provide additional resources for the Welcome Center prior to and during emergency events.	EMA	Staff time	Annual Budget	Lowndes County and all cities	2021-2026	Medium	New

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
13. Acquire additional traffic control resources such as barricades and jersey barriers.	EMA, Public Works	$250,000	Annual Budget	Lowndes County and all cities	2021-2026	Medium	New
14. Conduct incident command training for law enforcement and other applicable government agencies.	All Departments	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW

D. Special Multi-Jurisdictional Strategy and Considerations

The strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions.

E. Local public information and awareness strategy

The Public Information Officers within each jurisdiction will continue to assist with the public education and awareness aspects of this plan. By utilizing available resources, such as television, radio, newsprint, government websites, and mass communication technology (social media, telephone, and email), etc., they will be able to keep the public constantly informed of the development of these strategies and of how citizens can best assist with and/or take advantage of these efforts.

F. Changes from the previous plan

Due to limited resources and other actions receiving higher priority, none of the previously identified action steps were fully completed, but they still remain realistic mitigation strategies so none of them were deleted either. They were re-evaluated and determined to adequately meet the criteria for inclusion and hopefully resources will become available to see them carried out.

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Minimize loss to levels of service, especially with critical facilities, due to any identified natural hazard.							
Create database of critical utilities within Lowndes County.	EMA	Existing Staff	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, Modify Language
Objective #1- Provide necessary and timely hazard warnings and information to the public.							
Maintain agreements with local radio and television outlets to allow for immediate dissemination of emergency information.	EMA, PIO	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Delete, process has changed
Provide signage and/or billboard advertisements along I-75 and US Highways in Lowndes County to inform travelers which radio stations may provide emergency information.	EMA, PIO	$25,000	Annual Budget	All jurisdictions	2021-2026	Low	Delete, process has changed
Research the availability of Interstate Radio in Lowndes County.	EMA	Staff Time	Annual Budget	All jurisdictions	2021	Low	Delete, process has changed
Objective # 3 – Evaluate the feasibility of alternative warning systems.							
Assess the feasibility of outdoor warning sirens.	EMA, Parks and Rec, Schools	$2,000,000	FEMA/Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, Modify Language

Chapter 5.
Local Technological Hazard Mitigation Goals and Objectives

I. CBRNE

A. Community Mitigation Goals

As previously indicated in Chapter 3, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 3 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #1 - Be prepared to respond appropriately to any foreseeable CBRNE hazard event.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #1 - Secure external sources of funding and training to help prepare for and respond to events.							
1. Conduct a hazard vulnerability analysis specific to CBRNE events for Lowndes County.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	New
2. Continue to partner with Moody Air Force Base to increase readiness for CBRNE disasters	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	Ongoing, reoccurring yearly
3. Continue to work with owners of hazardous materials storage (tires etc.) to develop emergency response plans and to exercise those plans in the event of hazardous events.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	High	Ongoing, reoccurring yearly
4. Conduct gap analyses to identify additional materials needed to prepare for and respond to CBRNE events.	EMA, Fire, Law Enforcement, EMS	$1 M a year	DOJ, GEMA, FEMA	All jurisdictions	2021-2026	High	Ongoing, awaiting funding

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

Changes from the previous plan are noted below. This section indicates whether each action step from the previous plan has been completed, should be deleted, or has undergone modifications to wording. There are not any action steps for this hazard that were considered but ultimately not included.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 - Secure external sources of funding and training to help prepare for and respond to events.							
Submit competitive applications to fund equipment/training needs when potential funding sources are identified in Lowndes County	EMA	Staff Time	Annual Budget	All jurisdictions	2016 ongoing	Medium	Delete, process has changed
Annually review & update mutual aid agreements with neighboring jurisdictions	EMA	Staff Time	Annual Budget	All jurisdictions	2016	High	Delete, process has changed

II. Civil Disturbances

A. Community Mitigation Goals

As previously indicated in Chapter 3, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 3 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #2 – Protect people, businesses, and infrastructure from the possible effects of civil disturbances.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Timeframe	Priority	Status
Objective #1 – Enhance the capacity of the Emergency Management Agency, public safety, and first responders to respond safely and effectively and efficiently to civil disturbances.							
1. Conduct Risk and Capabilities Assessment to identify resource needs.	EMA, Sheriff's Dept., Police Dept.	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
2. Acquire equipment, supplies, training and other resources needed to address the capabilities gaps identified in the assessment.	EMA, Sheriff's Dept., Police Dept.	$250,000	Grants/ Annual Budget	All jurisdictions	2021-2026	Medium	NEW
3. Conduct simulated event planning and command training for law enforcement and other applicable government agencies.	EMA, Sheriff's Dept., Police Dept., Public Works	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
4. Review policies and procedures in place related to rallies and potential public disturbances.	EMA, Sheriff's Dept., Police Dept., Public Works	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

This is a new hazard that was not included in the previous plan.

III. Active Shooter

A. Community Mitigation Goals

As previously indicated in Chapter 3, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 3 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #3 – Protect residents of the community from shootings and gun-related injury and death.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #1 – Enhance the ability of the Emergency Management Agency to coordinate effectively and efficiently the emergency response during and after an Active Shooter event.							
1. Conduct Active Shooter response training for all public safety agencies.	EMA, Sheriff's Dept., Police Dept.	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
2. Conduct a public outreach campaign to increase awareness of how to respond in an active shooter situation.	EMA, Sheriff's Dept., Police Dept.	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
3. Provide additional training for the development of peer support groups following active shooter events.	EMA, Sheriff's Dept., Police Dept.	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
4. Identify and provide specialized PPE for all responders to be used in response to an Active Shooter event.	EMA, Sheriff's Dept., Police Dept.	$50,000	Grants/ Annual Budget	All jurisdictions	2021-2026	Medium	NEW

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

This is a new hazard that was not included in the previous plan.

IV. Cyberattacks

A. Community Mitigation Goals

As previously indicated in Chapter 3, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 3 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #4 – Protect the community's residents, agencies, businesses, and infrastructure from the possible effects of cyberattacks.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #1 – Enhance the resilience of the local power grid in the face of a cyberattack.							
1. Conduct a risk analysis of the local power grid with local utility providers.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
Objective #2 – Increase awareness among the community's residents of the danger of internet scams, phishing, hacking, ransomware, and other computer-related crimes.							
2. Provide training on cybersecurity awareness to the public.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
3. Provide advanced cybersecurity training for employees of local government agencies and departments.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
4. Offer training to local businesses in cybersecurity awareness.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
5. Conduct a risk analysis of all equipment and software for local government and public safety organizations.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
Objective #3 – Improve the resistance of local governments and agencies in the face of a cyberattack.							
6. Develop an emergency response plan for cyberattack events.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
7. Conduct exercises to access the vulnerability of local IT infrastructure to cyberattack.	EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

The major criteria to measure plan success will be the number of Goals, Objectives, and Action Steps, or components thereof, that have been completed, which in turn

will result in savings of life, money, and property. For further details on plan execution, see Chapter 6.

F. Changes from Previous Plan

This is a new hazard that was not included in the previous plan.

V. Aircraft Incidents (Military and Civilian)

A. Community Mitigation Goals

As previously indicated in Chapter 3, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 3 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #5 – Protect the community's residents, agencies, businesses, and infrastructure from aircraft incidents (military and civilian).

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #1 – Enhance the ability of local public safety agencies to respond to aircraft incidents.							
1. Ensure all emergency response personnel have up-to-date training and information on best practices for responding to aircraft incidents.	EMA, fire departments	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
2. Ensure that there is appropriate coordination between air traffic control at Valdosta Regional Airport, Moody Air Force Base, and other relevant airports.	EMA, DOD, Airport Authority	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
3. Review mass fatality plan to ensure adequate resources are available to respond to an aircraft crash.	EMA, DOD, Airport Authority, fire departments	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

This is a new hazard that was not included in the previous plan.

VI. Traffic Crashes

A. Community Mitigation Goals

As previously indicated in Chapter 3, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 3 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #6 – Reduce the number and severity of motor vehicle crashes in the community.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #1 – Enhance the ability of local public safety agencies to respond to motor vehicle crashes.							
1. Ensure all emergency response personnel have up-to-date training for responding to motor vehicle crashes.	EMA, EMS, fire departments	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
2. Ensure all emergency response personnel have up-to-date equipment for responding to motor vehicle crashes.	EMA, EMS, fire departments	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
Objective #2 – Implement traffic improvement programs to reduce the instances of motor vehicle crashes in the community.							
3. Provide up to date training in latest crash avoidance technologies.	Police depts., Sheriff's dept.	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
4. Identify resource gaps and acquire the necessary equipment to respond to motor vehicle crashes.	Police depts., Sheriff's dept.	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
5. Develop a plan for addressing motor vehicle crashes in high motor vehicle crash corridors.	Police depts., Sheriff's dept.	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
6. Provide safe driver education and training to the public.	Police depts., Sheriff's dept.	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
7. Implement the relevant action items from the State Strategic Highway Safety Plan.	Local governments	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
8. Implement the relevant safety-related action items from the Valdosta-Lowndes MPO 2045 Transportation Plan.	Local governments	$205,400,000	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
Objective #3 – Provide car seat safety training to the public.							
9. Promote the usage of appropriate car and booster seats through a public outreach program.	Local governments	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW
Objective #4 – Provide non-traditional vehicle training to the public.							
10. Promote education regarding safety in operating ATV's, golf carts, and other non-traditional vehicles.	Local governments	Staff Time	Annual Budget	All jurisdictions	2021-2026	Medium	NEW

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

This is a new hazard that was not included in the previous plan.

VII. Dam failure

A. Community Mitigation Goals

As previously indicated in Chapter 3, this is a hazard that may occur in many places at unpredictable times, and may cause substantial damage to life, property, and the economy in Lowndes County and the Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta. Due to the great damage it may cause, the stakeholders believe that the comprehensive range of Mitigation Goals, Objectives, and Action Steps contained in Section C below should be implemented to reduce this hazard's potential impact on the community.

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

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

2. Existing Policies, Regulations, Ordinances and Land Use:
Chapter 2 of this plan contains information regarding existing policies, regulations, ordinances, and land use that are relevant to this hazard.

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

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

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

C. Mitigation Strategy and Recommendations

1. Mitigation Goal #8 - Minimize losses to existing and future structures, especially critical facilities, due to Flooding caused by Dam Failure.

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
Objective #1 - Ensure dams within Lowndes County are adequate to withstand stress from natural hazards.							
1. Evaluate the structural integrity of dams and implement projects to repair and/or upgrade dam and spillway structures to prevent future damages.	Engineering	$5 million	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, awaiting funding
2. Acquire or develop downstream impact studies for all high-risk dam structures in Lowndes County.	Engineering, EMA	$150,000	FEMA/Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, awaiting funding
3. Provide study information to Planning Departments for inclusion in planning maps.	Engineering, EMA	Staff Time	Annual Budget	All jurisdictions	2021-2026	Low	Ongoing

Action Step	Responsible Department	Est. Cost	Funding Sources	Jurisdiction	Time-frame	Priority	Status
4. Identify dams in need of repair or that would benefit the surrounding areas by being upgraded and initiate projects to facilitate the necessary repairs.	Engineering	$5 million	FEMA/ Annual Budget	All jurisdictions	2021-2026	Low	Ongoing, awaiting funding

D. Special Multi-Jurisdictional Strategy and Considerations:

Most of the strategies outlined above apply to and are intended to be carried out by each of the local jurisdictions. In certain cases, where the action step may not apply to all jurisdictions, the applicable jurisdictions are noted in the table.

E. Local Public Information and Awareness Strategy:

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

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

F. Changes from Previous Plan

There were no changes, except for the plan timeframe from the previous plan in Subsection C: Mitigation Strategy and Recommendations. This hazard was relocated to the Local Technological Hazard section from the Natural Hazard section of the plan. There are not any action steps for this hazard that were considered but ultimately not included.

Chapter 6:
Executing The Plan

Summary of changes:

The languge of this section has been revised and updated.

I. Implementation

A. Administrative Actions

Following final approval and adoption of the Lowndes County Multi-Jurisdictional Hazard Mitigation Plan by the Georgia Emergency Management Agency, Lowndes County and its municipalities, and the Federal Emergency Management Agency, the Director of the Lowndes County Emergency Management Agency will distribute copies of the plan to all affected stakeholders. The implementation of this plan began in earnest once the mitigation options were identified.

B. Authority and Responsibility

The Lowndes County Emergency Management Agency (EMA) has been designated by the local governments in Lowndes County as the local entity with the overall responsibility for emergency planning and response in Lowndes County. This responsibility includes the coordination of federal, state, and local resources in the event of a disaster in Lowndes County. Accordingly, Lowndes County EMA was responsible for the convening of the stakeholders to guide the development of the county's multi-jurisdictional plan. While overall coordination of the county's Hazard Mitigation Plan will continue to be the responsibility of the EMA, the local chief elected officials (Mayors of Dasher, Hahira, Lake Park, Remerton, and Valdosta and Chairperson of the Lowndes County Board of Commissioners), through their chief appointed officials (Lowndes County Manager, Dasher City Clerk, Hahira City Manager, Lake Park City Clerk, Remerton City Manager, Valdosta City Manager), will be responsible for the day-to-day administrative operations of their respective local governments, and for the implementation of the specific mitigation activities proposed in this plan.

C. Prioritization

Methodology for prioritization

In prioritizing the implementing of action steps identified in this plan, those hazards deemed to pose the greatest threat will be given the primary consideration. In prioritizing the implementation feasibility of the action steps and projects, local governments will take into consideration the additional factors of cost and time.

Those activities requiring little cost and staff time to implement will be given highest implementation priority. Those steps requiring additional funding for equipment or staff time beyond the normal budgets of the communities will be incorporated into the budget process when possible based on the cost-benefit analysis described below. Lowndes County and the municipalities will strive to meet the following implementation schedule: High-priority action steps will be implemented in the first 18 months following adoption of this plan; Medium priority action steps will be implemented in 18 to 36 months; and Low priority action steps will be implemented in 36 to 60 months. The final implementation schedule will ultimately be determined by the availability of resources such as federal and state grant funds and local funds.

Use of cost-benefit analysis

The data provided in Worksheet #3 will be utilized to quantify the number of persons and/or property at risk from each hazard. Combined with the criteria in Worksheet #4, this will allow local governments to assess the potential value of at-risk properties and the resulting benefit from the proposed action steps.

In prioritizing projects, the local governments will also utilize cost benefit analysis (CBA) to evaluate the feasibility of a major project. CBA is a well-established method for quantitatively comparing the benefits and costs of mitigation projects. The end result is a Benefit-Cost Ratio (BCR), which is derived from a project's total net present value of benefits divided by the total project cost estimate, which must include all documented project and maintenance costs. The benefits of mitigation projects are avoided damages, disruptions, losses, and casualties. Examples of common benefits include avoided or reduced damages to buildings, contents, or infrastructure; economic impacts of loss of function of buildings; displacement costs for temporary quarters; loss of public services; loss of net business income; economic impacts of loss of function of infrastructure; road or bridge closures; loss of utility services; and deaths and injuries.

Use of other calculations

No other calculations were used.

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, grant, and/or loan funds which 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

As required by Georgia law, Lowndes County, and the Cities of Dasher, Hahira, Lake Park, Remerton and Valdosta have each adopted comprehensive plans in accordance with the Minimum Planning Standards promulgated by the Georgia Department of Community Affairs. In addition, other measures to guide development are utilized,

including flood plain management ordinances, capital improvement planning, zoning ordinances, and building codes. Upon approval of the Lowndes County Hazard Mitigation Plan, a review will be conducted to identify any changes that need to be incorporated into these existing plans. As these plans are scheduled for revisions and/or updates, any necessary changes will be incorporated at that time.

Based on recommendations from the previous plan, changes were made to the Land Development Codes and/or Land Development Regulations of participating jurisdictions through incorporation of Flood plain ordinances into these plans.

II. Monitoring and Evaluation

The Lowndes County EMA Director will be charged with ensuring that this plan is monitored and periodically updated in subsequent years. An analysis of the previously approved plan's method and schedule for monitoring, evaluating, and updating the plan has indicated a high degree of success and satisfaction among local officials and community stakeholders. The method of evaluation employed, as agreed upon by the Hazard Mitigation Planning Committee, will consist of utilizing a report of accomplishments to illustrate what actions/projects were undertaken, the completion date (or current status) of those actions/projects, the cost of the actions/projects, and whether the actions/projects were deemed to be successful.

Pursuant to the requirements set forth in the Disaster Mitigation Act of 2000, the community is again required to update and evaluate the plan no more than five years after its adoption. At the direction of the Lowndes County EMA Director, the committee that is designated to review and update the plan will convene in order to evaluate progress within the community. The EMA Director will hold meetings at least annually to monitor the progress of the plan implementation. At least one year prior to the end of the required five-year update period, the EMA Director will begin the planning process for a new update to this plan. This will consist of establishing a new planning committee that will be tasked with completing the update following the same process used for this update.

No later than the conclusion of the five-year period following approval of the plan update, the 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.

III. Plan update and maintenance

Because the Hazard Mitigation Plan is intended to help ensure a safe and livable environment for all Lowndes County citizens, it is imperative that citizen involvement be an integral part of the planning process. Since adoption of the original Lowndes

County Pre-Disaster Mitigation Plan in 2006, 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 Lowndes County Hazard Mitigation Plan. When specific issues dictate, public hearings will be conducted, and all other community planning efforts (Comprehensive Plan, Regional Plan, etc.) will afford citizens the opportunity to participate in and comment on the need to incorporate hazard mitigation initiatives.

Timeline for Planning Processes	
2021 Joint Comprehensive Plan for Lowndes County (every 5 years)	Currently Underway
Strategic Planning Retreat (Lowndes County, annual)	February 2022 (and each year following)
Budget Hearings (Lowndes County, annual)	Spring 2022 (and each year following)
Southern Georgia Regional Plan Update (every 5 years)	Process for Full Update begins July, 2022
Lowndes County Hazard Mitigation Plan Update (every 5 years)	Process for Update begins August, 2025

To facilitate the goal of continued public involvement in the planning process, the EMA will assure that the following steps are taken:

- The public will be directly involved in the update and review of the plan as members of the Pre-Disaster Mitigation Planning Committee.
- Copies of the plan will be kept on hand at appropriate agencies throughout Lowndes County.
- The plan will be available on the Cities' and County's websites, and will contain an e-mail address and phone number the public can use for submitting comments and concerns about the plan.
- A public meeting will be held annually to provide the public with a forum for expressing concerns, opinions, and ideas. The EMA will set meeting schedules and dates and use County resources to publicize and host this meeting.

Chapter 7:
Conclusion

Summary of changes:

The languge of this section has been revised and updated.

I. Summary

The definition of mitigate is "…to relieve; to alleviate; to temper." Natural hazards cannot be prevented; however, with proper planning, the destruction that often accompanies a natural hazard event can be mitigated. Planning ahead and undertaking structural and nonstructural action steps before a disaster occurs can save lives and property. This philosophy has been the driving force behind the preparation of the Lowndes County Hazard Mitigation Plan.

Lowndes County and its municipalities have suffered considerable repetitive damages, due primarily to localized Flooding. Hurricanes, tornadoes, and severe thunderstorms have also affected Lowndes County. Very strong winds have caused damage in Lowndes County in the past and continue to threaten Lowndes County. In addition, heavy rains from thunderstorms can create damaging flooding. Because of a favorable outdoor environment, several individuals each year are struck by lightning and large numbers are affected by heat stress caused by Extreme Heat.

Education of the population and enhanced warning can decrease the vulnerability of the county's citizens and visitors. Continued and improved public information and communication with the population are important parts of this plan.

Several gaps exist in our understanding of the threats facing Lowndes County. These include a lack of understanding of the effect of drought on the subsurface water supply and the extent of potential Sinkholes in the county. More study is required on both of these subjects. The current impact of the historically high river Flood levels is not precisely known. Efforts to refine our understanding are included in this plan.

Because of this planning process, Lowndes County officials have gained a better understanding of the natural and Local Technological hazards affecting our county. The National Weather Service data, recently made readily available on the internet, was very helpful in this planning effort.

As a result of the planning process described in Chapter 1 and the natural and Local Technological hazard, risk, and vulnerability assessment in Chapters 2 and 3,

Lowndes County and its municipalities have a realistic perspective on the natural and Local Technological hazard risks that the county is exposed to on a daily basis. With the mitigation strategy outlined in Chapters 4 and 5, and the implementation plan included in Chapter 6, the local leaders of Lowndes County, Dasher, Hahira, Lake Park, Remerton, and Valdosta have an "action plan" to follow when allocating resources to reduce their communities' vulnerability to such natural and Local Technological hazards.

II. References

Numerous publications were utilized in compiling information for this plan. Publications used include:

- Flood Insurance Rate Maps (FIRM)
- Lowndes County and Cities of Dasher, Hahira, Lake Park, Remerton, and Valdosta 2016 Comprehensive Plan
- Lowndes County Community Wildfire Protection Plan (2018)
- Lowndes County Emergency Operations Plan
- Valdosta State University Hazard Mitigation Plan
- Valdosta-Lowndes Metropolitan Planning Organization 2045 Transportation Plan
- Lowndes County Transportation Infrastructure Vulnerability Assessment

Websites and internet databases

- FEMA (www.fema.gov)
- FireWise Communities (www.firewise.org/usa)
- GA Department of Community Affairs (www.dca.state.ga.us)
- Georgia Emergency Management Agency (www.gema.ga.gov)
- Georgia Forestry Commission (www.gfc.state.ga.us)
- Georgia Forestry Commission Automated Weather Data (http://weather.gfc.state.ga.us)
- Lowndes County Tax Assessor
- National Climatic Data Center Storm Events Database (www.ncdc.noaa.gov)
- Southern Group of State Foresters Wildfire Risk Assessment Portal (southernwildfirerisk.com)
- U.S. Drought Monitor (http://droughtmonitor.unl.edu)
- Unisys Weather Hurricane Tropical Storm Data (http://weather.unisys.com/hurricane/atlantic)
- US Census Bureau (quickfacts.census.gov)
- Vaisala Annual Lightning Report (vaisala.com)

Appendices

Appendix A. Hazard Identification, Risk, and Vulnerability (HRV)

I. GEMA Worksheet 3A
II. GMIS Critical Facilities Maps
III. Flood and River Gauge Maps
IV. Lightning Flash Density Map
V. Maximum Envelope of Wind maps
VI. Drought Monitor and Drought map
VII. SouthWRAP Summary Report map

Appendix B. Growth and Development Trends

I. Census Demographic Summary
III. Tax Digests

Appendix C. Other Planning Documents

I. 2016 Comprehensive Plan Short Term Work Program
II. Community Wildfire Protection Plan

Appendix D. Worksheets Used in Planning Process

I. Hazard Frequency Table
II. GEMA Worksheet #1
III. GEMA Worksheet #2
IV. GEMA Worksheet #4

Appendix E. Copies of Required Planning Documentation

I. Agendas and Public Notices
II. Sign-in Sheets
III. Adoption Resolutions

Appendix F. Reports and Inventories

I. General Historic Reports
II. Critical Facilities Inventory

Appendix G. HAZUS Report