

Chapter 1 – Introduction to the Planning Process

Table 1.1 provides a brief description of each section in this chapter and a summary of the changes that have been made to the Appling County Hazard Mitigation Plan.

Chapter 1 Section	Updates to Section
I. Purpose and need of the plan, authority & statement of problem	<ul style="list-style-type: none"> Includes information regarding authority of federal and state regulations
II. Local methodology, brief description of plan update process, Participants in update process	<ul style="list-style-type: none"> Section updated to include list of participants, new participants, committee organization, and other planning mechanisms
III. Description of how each section of the original plan was reviewed and analyzed and whether it was revised	<ul style="list-style-type: none"> Section updated with narrative on plan development process
IV. Organization of the plan	<ul style="list-style-type: none"> Text revised, content updated from previous plan to reflect new template
V. Local Hazard, Risk, and Vulnerability (HRV) summary, local mitigation goals and objectives	<ul style="list-style-type: none"> Section revised to summarize updates to HRV, and local mitigation goals and objectives
VI. Multi-Jurisdictional special considerations (HRV, goals, special needs)	<ul style="list-style-type: none"> Updated to include multi-jurisdictional considerations
VII. Adoption, implementation, monitoring and evaluation (a general description of the processes)	<ul style="list-style-type: none"> Text revised, content updated from previous plan
VIII. Description of public participation in planning process	<ul style="list-style-type: none"> Section added to describe enhanced public notification procedures
IX. Community Data (demographics, census, commerce, history, etc.)	<ul style="list-style-type: none"> Updated to include current information

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

I. Purpose and Need of the Plan, Authority & Statement of Problem

The Appling County Hazard Mitigation Plan is the official update to the plan submitted to and approved by the Federal Emergency Management Agency (FEMA) Region IV in August, 2008. The information that is contained within this document is intended to provide the framework for hazard mitigation goals and objectives that are to be implemented by the local governments within Appling County. The intent of achieving the set goals and objectives is to reduce the risk and damage associated with the identified hazards. The implementation of this plan is designed to better prepare Appling County for these hazards and in doing so help ensure the safety of all of its residents.

The Hazard Mitigation Plan Update will meet the requirements of the Disaster Mitigation Act of 2000 Public Law 106-390, October 30, 2000, as stipulated in the Interim Final Rule 44 CFR 201.4 Standard State Plan criteria, published on February 26, 2002. Meeting these regulations will allow Appling County to maintain eligibility and qualify for all federally declared disaster assistance, including certain types of Public Assistance and hazard mitigation grants available through the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended). These forms of assistance will further the county's ability to provide for the safety and well-being of its citizens.

The Appling County Pre-Disaster Mitigation Plan was created through the combined efforts of the Appling County Board of Commissioners and the Cities Baxley, Graham, and Surrency. With this plan, Appling County is continuing its commitment to protecting the health, life, property, and overall well-being of its citizens. In order to meet these obligations the mitigation plan committee examined which natural disasters posed the greatest threat within the county and then outlining the potential steps that can be implemented in order to minimize the devastation that may occur. The individuals involved in the preparation of this plan feel that this plan accurately reflects the potential hazards faced by the county and outlines preemptive measures that address these areas. By identifying risks and areas of vulnerability the county will be able to make further preparations to minimize the impact of the hazards.

This document is intended to serve as a reference for elected officials and agency representatives who are responsible for making the critical decisions necessary to ensure the protection of the citizens of Appling County. The updated Hazard Mitigation plan is to be utilized as a current guide for Appling County and its' municipalities in order to implement future hazard policies, programs, and projects that adhere to the goals of the plan. In addition to the creation of preemptive measures designed to reduce the damage of a disaster, by meeting the mandated requirements the county enables itself to qualify for federal post-disaster assistance.

Authority:

The Disaster Mitigation Act of 2000 (DMA 2000)

In the past, federal legislation has provided funding for disaster relief, recovery, and some hazard mitigation planning. DMA 2000 is the latest legislation to improve the planning aspect of that process. The Act reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. The Act establishes a pre-disaster hazard mitigation program and designates new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). Section 322 of the Act identifies the new requirements for planning activities and increases the amount of HMGP funds available to states that have developed a comprehensive mitigation plan prior to disaster.

States and communities must have an approved mitigation plan in place prior to receiving post-disaster HMGP funds. Local mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to and the capabilities of the individual communities. To implement the new DMA 2000 requirements, the Federal Emergency Management Agency (FEMA) prepared an Interim

Final Rule, published in the Federal Register on February 26, 2002 at 44 CFR Parts 201 and 206, which establishes planning and funding criteria for states and local communities. The Rule identifies criteria for detailed Hazard, Risk, and Vulnerability (HRV) assessments.

Failure to meet the new criteria will make state and local governments ineligible for Stafford Assistance, and thus forfeit certain types of emergency assistance. The following section describes the existing state planning initiatives and mitigation programs.

Georgia Planning Act

The Georgia General Assembly adopted the Georgia Planning Act in 1989 as a means to encourage better management of growth in previously developed and developing areas of the State while encouraging smart development in less prosperous areas. Although supporting development, the legislature still strives for the conservation and protection of natural and historic resources, protection and promotion of quality of life through proper land use planning, and protection of community facilities. The cornerstone of the coordinated planning program is the preparation of a long-range comprehensive plan by each local government. This plan is intended to highlight community goals and objectives as well as determine how the government proposes to achieve those goals and objectives. With the passage of the Georgia Planning Act of 1989, all of Georgia's 159 counties and 529 cities were designated "Qualified Local Governments". Each of these local governments must maintain their status in order to remain eligible for a range of state and federal assistance programs. Continuing efforts strive for integrating the local hazard mitigation planning with the local comprehensive planning process.

Erosion and Sedimentation Control

OCGA 12-7-1

The Georgia Erosion and Sedimentation Act requires that each county or municipality adopt a comprehensive ordinance establishing procedures governing land-disturbing activities based on the minimum requirements established by the act. The Erosion and Sedimentation Act is administered by the EPD of the Georgia DNR and local governments. Permits are required for specified land-disturbing activities, including the construction or modification of manufacturing facilities, construction activities, some activities related to transportation facilities, activities on marsh hammocks, and others.

River Corridor Protection

OCGA 12-2-1

The statute informally known as the Mountain and Corridor Protection Act authorizes DNR to develop minimum standards for the protection of river corridors (and mountains, watersheds, and wetlands) that can be adopted by local governments. The EPD administers the act. All rivers in Georgia with an average annual flow of 400 cubic feet per second are covered by the act, except those within the jurisdiction of the Coastal Marshlands Protection Act. Some of the major provisions of the act include: requirements for a 100-foot vegetative buffer on both sides of rivers, consistency with the Georgia

Erosion and Sedimentation Act, and local governments' identification of river corridors in land-use plans developed under their respective comprehensive planning acts.

The **Watershed and Flood Prevention Act**, PL 83-566, August 4, 1954 (16 U.S.C. 1001-1008) authorized the establishment of programs to aid in protecting the lives and property threatened by natural disasters related to watersheds (such as flooding and erosion). Prior to fiscal year 1996, separate programs addressed small watershed planning activities and cooperative river basin surveys and investigations. After the 1996 appropriations act, the activities specified under the Watershed and Flood Prevention Act were combined into the single program known as the Emergency Watershed Protection (EWP) program. The purpose of the EWP program is to assist federal, state, and local agencies and tribal governments to protect watersheds from damage caused by erosion, floodwater, and sediment as well as to conserve and develop water and land resources. Resource concerns addressed by the program include water quality, water conservation, wetland protection and restoration, water storage capacity, agricultural drought problems, rural development, municipal and industrial water needs, upstream flood damages, and water needs for wildlife and forest-based industries. Methods of planning and surveying addressed by the program include specific watershed plans, river basin surveys, flood hazard analyses, and floodplain management assistance. The purpose of the plans and surveys is to identify solutions that use land treatment and nonstructural measures to resolve resource problems.

Federal Hazard Mitigation Programs

Because GEMA administers federal hazard mitigation programs for Georgia, GEMA's planning process is inherently integrated into these federal programs, specifically the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDM), the National Flood Insurance Program (NFIP), the Community Rating System (CRS), Flood Mitigation Assistance Program (FMA), the Map Modernization Project, Repetitive Flood Claims Program (RFC) and Severe Repetitive Loss Program (SRL). The Hazard Mitigation Grant Program (HMGP), authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration in order to reduce the loss of life and property due to hazard events and to enable the implementation of mitigation measures during the immediate recovery period.

The **Repetitive Flood Claims** (RFC) grant program was authorized by the Bunning-Bereuter- Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108-264), which amended the National Flood Insurance Act (NFIA) of 1968 (42 U.S.C. 4001, et al). The RFC program provides funds to assist States and communities in reducing flood damages to insured properties that have had one or more claims to the National Flood Insurance (NFIP) Fund. RFC grants are to be awarded on a competitive basis and without reference to state allocations, quotas, or other formula-based allocation of funds. Georgia has utilized project grants in the first two years of this program's existence to permanently mitigate NFIP insured structures through property acquisition.

II. Local Methodology and Brief Description of the Plan Update Process

The 2013 Appling County Hazard Mitigation Plan Update process began with the development of a planning committee, which would provide input and guidance throughout the initiative. This committee consisted of representatives from both the county, the Cities of Baxley, Graham and Surrency as well as other local and regional agencies. In order to ensure participation and meet federal requirements a list was compiled of local and regional individuals and organizations that were essential to the success of the plan. These individuals were invited to attend and participate in the planning process. This included sending a draft of portions of the plan to neighboring communities for their review and comments. (An example of this letter can be found in Appendix E)

Furthermore, the Appling County Board of Commissioners contracted with the Heart of Georgia Altamaha Regional Commission to provide consultation, meeting facilitation, data collection and plan development services.

The Agencies represented in the Hazard Mitigation Update process included:

- Appling County EMA
- Georgia Forestry Commission
- City of Baxley Police Department
- City of Baxley Council
- City of Graham Administration
- City of Surrency Administration
- City of Baxley Fire Department
- Appling County Sheriff's Office
- Appling County EMS
- Appling County Department of Family and Children Services
- Appling County 911
- Appling County Commission
- Appling County Volunteer Fire Departments
- Appling County Health Department
- Appling County Board of Education
- Appling County Road Department

- City of Baxley Public Works
- Appling County UGA Extension

(For a list of individuals participating please see the meeting “Sign In Sheets” located in Appendix E, I)

The plan update process consisted of holding monthly meetings to review the data that was collected and utilized in the 2008 plan, including hazard event data, original goals and objectives as well as other community profile data. In addition, various existing planning mechanisms were reviewed and incorporated into the plan. (A list can be found below) Employees and officials from the county, as well as the municipalities worked outside of meetings to conduct the research necessary to determine what objectives had been reached and to verify the accuracy of the hazard data. (For copies of the agendas please view Appendix E, III) Since these meetings are open to and attended by the public this was an additional opportunity for comment and involvement.

The Plan Update Process began with an initial public hearing on August 23, 2012. Additionally, the public was also invited to participate in the draft review process prior to submission to GEMA and FEMA on June 25th, 2014. Both public meetings were advertised in the local newspaper. Copies of the draft were available from the County as well as the office of the Heart of Georgia Altamaha Regional Commission. Public comments were also accepted by phone, email and written letter. All comments received were reviewed at the public hearing on June 25th, 2014. Changes to the document were incorporated as recommended. Additionally, the public will be able to provide comments during the plan adoption process.

Record of Review

Existing planning mechanisms	Reviewed? (Yes/No)	Method of use in Hazard Mitigation Plan
2008 Comprehensive Plan (multi-jurisdictional)	Yes	Development trends, capability assessment, mitigation strategies
Local Emergency Operations Plan	Yes	Identifying hazards; Assessing vulnerabilities
Storm Water Management / Flood Damage Protection Ordinance	Yes	Mitigation strategies, capability assessment
Building and Zoning Codes and Ordinances	Yes	Development trends; Future growth, capability assessment, mitigation strategies
Mutual Aid Agreements	Yes	Assessing vulnerabilities
State Hazard Mitigation Plan	Yes	Risk assessment

Land Use Maps	Yes	Assessing vulnerabilities; Development trends; Future growth
Critical Facilities Maps	Yes	Locations, Assessing Vulnerabilities
County Flood Plain Maps	Yes	Locations
2012 Community Wildfire Protection Plan	Yes	Mitigation strategies, risk assessment
2010 Flood Insurance Study	Yes	Mitigation Strategies, Risk Assessment

III. Plan Review, Analysis and Revision

The contracted planner with the Heart of Georgia Altamaha Regional Commission had the primary responsibility for collecting updated information and presenting data to the committee. Formal meetings of the Plan Update Committee were held monthly. Throughout the update process, sections of the approved 2008 plan were provided to committee members as each respective issue was discussed. Additionally, the entire document was available at the County Courthouse for public review. Each chapter was reviewed chronologically with relevant data and information brought in for comparison and consideration by the committee. In addition, FEMA worksheets and supporting documents were used when possible. The committee made updates to the plan through group discussion and pragmatic decision making. Irregularly attending participants were kept informed with monthly emails containing minutes and relevant documents from the previous meeting.

In order to properly evaluate and update the “Hazard Identification and Risk Assessment” portion of the 2008 plan, data from the National Climatic Data Center and the Georgia Forestry Commission’s “Applying County Community Wildfire Protection Plan” was presented to the committee. The committee then had an open discussion of the hazards and the threats they present to the county. The decision was made to include the ten hazards from the original plan and one; Excessive Heat. Additionally, to help assess the risk associated with each hazard a worksheet developed from the “FEMA Mitigation Plan Review Reference Manual” was used. The worksheet asked committee members to rate each hazard based upon several characteristics; Historical Occurrence, Probability, Vulnerability, Maximum Threat, Severity of Impact, and Speed of Onset. (Appendix E, I) These ratings provided a detailed assessment and a prioritization of each hazard. In addition, current critical facility location data was reviewed for accuracy and updated as needed. This involved the update committee reviewing the addresses of the facilities and verifying their locations using GIS Software.

In order to update the Goals, Objectives and Action Plans included in the 2008 plan each was individually assessed on whether efforts had been made in the last five years to accomplish it. This allowed the committee to get an accurate understanding of what had been achieved since the adoption of the 2008 plan and make decisions on what should be included in the 2013 plan. Decisions to add or delete portions of this section were made through small group discussion and

committee recommendations. The “Plan Integration and Maintenance” section was also reviewed in a similar manner with several changes being made to the system used for the 2008 plan.

Each section of the 2008 plan has been revised to some degree. Therefore, the first section of each chapter will list those changes in a tabular format.

IV. Organization of the Plan

The Hazard Mitigation Plan Update is organized to incorporate the requirements listed in the Interim Final Rule 44 CFR 201.4 Standard State Plan criteria in several chapters. This chapter includes an overview of the plan update document, an overview of the various state and federal authorizing authorities, information detailing the planning process the goals of the plan, multi-jurisdictional special considerations, the public participation involved in the process and a brief background of the community in order to be in complete compliance with Interim Final Rule 44 CFR 201.4(c)(1).

Chapter 2 identifies current hazards, outlines the history of hazards in terms of events and losses, assesses each jurisdiction’s risks and vulnerabilities, and changes in development related to hazard vulnerability, as stipulated by Interim Final Rule 44 CFR 201.4(c)(2).

Chapter 3 outlines the county and municipalities’ mitigation strategy, including changes in priorities, a capability assessment, the impact of existing policies, regulations, and community factors, hazard mitigation goals and objectives, mitigation actions and activities and specific contributions, funding sources, and changes in action steps as stipulated by Interim Final Rule 44 CFR 201.4(c)(3).

Chapter 4 outlines the process of plan integration and maintenance, including how the plan will be incorporated into other planning mechanisms, strategies for monitoring the implementation of mitigation efforts, the methods and schedule of updates, and reviewing progress of achieving the goals outlined in Chapter Four, as well as a description of approaches used to encourage public involvement as stipulated by Interim Final Rule 44 CFR 201.4(c) (4).

Finally, the Appendices provide reference material used for the update process.

The summary of changes is included in the overview section of every chapter as a table that details each section and the changes that have occurred within the section since the last approval (2008).

V. Local Hazard, Risk, and Vulnerability (HRV) Summary

The Appling County local risk assessment was accomplished by compiling data on the hazards that could affect the county and its residents, profiling these past hazard events, and then assessing the community’s vulnerability to these hazards. The Appling County Hazard Mitigation Plan Update Committee accomplished the risk assessment by conducting the following steps:

- (1) Hazard Identification
- (2) Hazard Event Profiling

(3) Vulnerability Assessment

(4) Potential Loss Estimates

(1) Hazard Identification: Maps and historical data sources were studied and reviewed in order to identify the geographic extent, intensity, and probability of occurrence for various hazard events. FEMA Worksheet #1 (Identify the Hazard) was used in this process. A copy of this worksheet is provided in Appendix D, III.

The Appling County Hazard Mitigation Plan Update addresses the following hazards considered by committee members to pose the most threat to the residents, property and economy of Appling County:

- Thunderstorm/Windstorm
- Tornado
- Wildfire
- Extreme Heat
- Drought
- Winter Storm
- Hailstorm
- Flood
- Tropical Storm
- Dam Failure
- Hurricane

A comprehensive history of events for each hazard for Appling County is provided in Appendix A.

(2) Hazard Event Profiling: Past hazard event data were collected through an extensive process that utilized input from Appling County Hazard Mitigation Plan Update Committee members, research on past disaster declarations in the County, information provided from the National Climatic Data Center and the National Weather Service, a review of current Flood Insurance Rate Maps (FIRM) and internet and newspaper data searches. This source data was used to complete a Hazard Frequency Table for committee analysis purposes. A copy of the Hazard Frequency Table is provided in Appendix D, II.

The committee analyzed the causes and characteristics of each hazard, how the hazard had affected Appling County in the past, and what part of Appling County's population and infrastructure had historically been vulnerable to each specific hazard. FEMA Worksheet #2 (Profiling Past Hazards) was used to complete this process. A profile of each hazard discussed in this plan is provided in Chapter 2. A copy of Worksheet #2 is provided in Appendix D, II.

Additionally, to help assess the risk associated with each hazard a worksheet developed from the "FEMA Mitigation Plan Review Reference Manual" was used. The worksheet asked committee members to rate each hazard based upon several characteristics; Historical Occurrence, Probability, Vulnerability, Maximum Threat, Severity of Impact, and Speed of Onset. These ratings provided a detailed assessment and a prioritization of each hazard. A copy of this worksheet can be found in Appendix D, I.

In regards to hazard probability, an informal measurement scale was developed based on historical occurrence data to gauge the probability of future occurrences. The scale can be seen below.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	“Highly Likely”
10-25	“Likely”
25-50	“Unlikely”
50 or greater	“Highly Unlikely”

(3) Vulnerability Assessment: The asset inventory component of the HRV assessment data included the development of a database that provides county infrastructure and critical facilities data as well as estimated structure dollar values for loss estimates. This critical facilities database was developed by the Heart of Georgia Altamaha Regional Commission, in conjunction with the Emergency Management Agency office and the tax assessor’s office. Information collected includes structure location, value, contact information and facility type. This database was also presented to the update committee for revisions and additions to further ensure its accuracy.

A critical facility, for the purposes of this plan, is defined as a facility in either the public or private sector that provides essential products and services to the general public, is otherwise necessary to preserve the welfare and quality of life in the County, or fulfills important public safety, emergency response and/or disaster recovery functions. The critical facilities identified by the committee in the County include governmental services facilities; water and waste water treatment plants and lift stations; electric and communication utilities; hazardous waste sites; schools; public safety facilities; healthcare facilities; and essential roadways and bridges.

A community’s vulnerability can be described in terms of the assets located within the extent of a hazard event and the potential losses if such an event occurs. Therefore, the vulnerability assessment was accomplished by comparing each previously identified hazard with the inventory of affected critical facilities and population exposed to each hazard. GEMA Worksheet # 3a, provided in Appendix D, III outlines this step of the HRV assessment.

Assessing vulnerability, for the purposes of this plan, also included a review of the Appling County Joint Comprehensive Plan to assess general land use patterns and development trends. This review can be found in Appendix B.

(4) Potential Loss Estimates: Using the best available data and mathematical modeling, estimated damages and financial losses likely to be sustained in a geographic area during a hazard event were calculated. Describing vulnerability in terms of dollar losses provides the county with a common framework in which to measure the effects of hazards on critical facilities.

The number and type of structures in the County have been determined for potential loss estimations. The source of the information was the County Tax Assessor's Office. Additional information can be found in Appendix D, III.

The Appling County Hazard Mitigation Plan Update Committee used the results of the Hazard, Risk and Vulnerability assessment, as well as the reported accomplishments to identify and prioritize appropriate further mitigation goals, objectives and related actions. The Planning Committee identified mitigation strategies over the course of three formal meetings.

After ensuring that all interested persons had been given ample opportunity to contribute to strategy development, mitigation action steps were next given priority status by committee members. To evaluate priorities, committee members used as a guide a planning tool prepared by FEMA known as STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) criteria. Each mitigation strategy step was evaluated using STAPLEE criteria as the guiding principle to identify those steps best for Appling County. Steps were ranked as high priority, medium priority, or low priority. Past occurrences of disasters and historical trend data aided committee members in assigning priorities.

VI. Multi-Jurisdictional Special Considerations -

The municipalities of Baxley, Graham, and Surrency, as well as representatives of the unincorporated portions of Appling County, were active participants in the planning process. Primarily, the goals and action steps apply to all jurisdictions, however, there are a few mitigation goals identified in this plan update which may apply to certain jurisdictions. These steps are identified in the appropriate sections. The Appling County Emergency Management Agency (EMA) Director will coordinate with city officials in order to execute any and all multi-jurisdictional steps. The EMA Director does not have the authority to implement items within the municipality, however, the committee has chosen to coordinate communication efforts to implement and document progress towards goals with the EMA Director.

VII. Adoption, Implementation, Monitoring and Evaluation

Upon final approval by GEMA and FEMA Region IV, the Appling County Board of Commissioners and municipalities formally adopted the Appling County Hazard Mitigation Plan. Documentation of both of these adoption decisions is included in Appendix E.

Appling County currently utilizes comprehensive land use planning and building codes to guide and control development in the county. The Appling County Hazard Mitigation Plan will be presented to the Committees and persons responsible for updating Comprehensive Plans and Capitol Improvement plans, for their use in incorporating the Hazard Mitigation goals and objectives. In addition, the Commission and City Councils will ensure that the local authorities responsible for the Local Emergency Operations Plan (LEOP) and other multi-jurisdictional plans utilize guidance from the Hazard Mitigation Plan.

The Emergency Management Agency Director will convene the committee in November of each year. Committee members will be responsible for evaluating the progress of the mitigation strategies in the Plan. The committee will review each goal, objective, and action step to determine relevance to changing situations in the county and municipalities, as well as changes

in state and federal policy, and to ensure that the plan is addressing current and expected conditions as needed. The committee will also review the risk assessment portion of the Plan to determine if this information should be updated or modified.

The Plan Review Committee will prepare a report for the County Commission and Municipal Authorities. Through public invitation at the County Commission meeting held in January of each year, the County Commissioners will evaluate and update the Plan to ensure mitigation action steps are being established and that existing programs are utilizing the guidance provided by the Hazard Mitigation Plan. The EMA Director will then forward any changes to Georgia Emergency Management Agency's Hazard Mitigation Officer.

The parties responsible for the various implementation actions will provide a project status report and will include which implementation processes worked well, any difficulties encountered, how coordination efforts were proceeding, and which strategies should be revised.

Appling County is dedicated to involving the public directly in the continual reshaping and updating of the Hazard Mitigation Plan. The Plan Review Committee is responsible for the annual review and update of the Plan. Although they will represent the public to some extent, the public will also be able to directly comment on and provide feedback about the Plan.

Copies of the Plan will be available at the Appling County EMA office, and the County Commissioner's Office. The existence and location of these copies will be publicized in the local newspaper. All comments and questions will be directed to the local Emergency Management Agency Director for follow-up. The publicly declared County Commission meeting to evaluate and update the Plan will provide the public an additional forum for which they can express concerns, opinions, or ideas about the Plan.

VIII. Public Participation

The planning committee attempted to facilitate public involvement throughout the planning process. As required, two public hearings were held in order to allow citizens to provide input and ask questions about the planning process and to view a draft of the plan itself. The first public hearing was August 23rd, 2012. Prior to the meeting a notice was placed in the local newspaper, *Baxley News Banner*, which is the primary printed news source for the county. A copy can be found in Appendix E, III. The advertisement was repeated on June 18th, 2014 for a hearing allowing the public to view a completed draft of the plan on draft review process after approval by GEMA and FEMA, but prior to local adoption.

In order to further inform the public and allow them to become involved in the process copies of the draft updated plan as well as the original 2008 plan were made available Appling County Courthouse, as well as the office of the Heart of Georgia Altamaha Regional Commission. Throughout the process public comments were also accepted by phone, email and written letter. All comments received were reviewed at the second public hearing on June 25th, 2014 Changes to the document were incorporated as recommended.

Portions of the plan were consulted in the development of other planning documents including the Multi-Jurisdictional Comprehensive Plan, Local Emergency Operation Plan and The Georgia Forestry Commission's Community Wildfire Protection Plan.

IX. Community Data

Appling County, the 42nd county created in Georgia, was established on December 15, 1818. The county consists of lands originally belonging to the Creek Indians that were received in the 1814 Treaty of Fort Jackson and the 1818 Treaty of the Creek Agency. The original boundary extended from the Altamaha River to the St. Mary's River. This land would be reduced in order to make present day Bacon, Appling, Pierce, and Ware counties, in addition to parts of Atkinson, Brantley, Charlton, Clinch, Coffee, Echols, Appling, and Wayne counties. The county's name honors Colonel Daniel Appling, a distinguished soldier of the War of 1812. Many of the first settlers to come to the county moved down from North and South Carolina. For several years after the county was established much of the territory laid uninhabited. However, the state helped remedy this by including the county in the state land lottery drawings for 1820, 1821, 1827, and 1832.

Government and Municipalities

Appling County has six commissioners, as well as a county manager to oversee daily operations. The county is part of the Brunswick Judicial Circuit. The county has a total population of 18,236 and continues to see steady growth. Each municipality in the county has a mayor and city council.

The city of Baxley was incorporated in 1875 and replaced Homesville as the county seat. The city was named after Wilson Baxley, a successful local businessman who owned the community's first general store. The city's current population is 4,400.

The city of Graham was originally established as a site for a general store. Several years later when a farmer and landowner, Middleton Graham, donated land for a railroad station the city decided to honor him by taking his name. Although the city incorporated locally in 1897, it would not receive an official state charter until 1991. The current population of Graham is 291.

The Town of Surrency became incorporated on January 1st, 1911. The town was originally founded by Allen Powell Surrency, a successful businessman and local leader, who owned and operated both a saw-mill and general store. The town's current population is 201.

Economy

Like much of Georgia in the early 19th century Appling County's economy consisted primarily of farming, livestock raising, and the timber/naval stores industry. The Altamaha River helped the county grow as it allowed them to ship products to coastal communities. The city's central location along the Macon and Brunswick Railroad also helped attract businesses. The first commercial turpentine still in Georgia was created in 1858 in a portion of Appling County that has since become Wayne County. Other turpentine operations soon began to pop up including one by a North Carolina native Adrian Van Bokkelyn, whose business would become one of the largest producers in the state. These thriving operations lead to Appling County being referred to as the "Turpentine Capital of the World." However, this high demand for timber soon took its

toll on the forests of Appling County resulting in barren land, unfertile soil and soil erosion problems.

Around the same time that the timber and turpentine industry was thriving, cattle and sheep farmers began to locate in the county as well. Additionally cotton, tobacco, corn, wheat, sugar cane, dairy products and other produce were largely grown.

Interestingly, the town of Surrency thrived during the late 19th century due to its large production of railroad crossties, producing over five train-car loads a day.

Today the county's agricultural economy is still doing quite well. Other large employers include Altamaha Homecare, Harris Waste Management, Bailey Boys, Rayonier, Southern Nuclear, Contender Boats, and Appling County Pellets.

Miscellaneous

Notable Appling County residents include; Seaborn Hall served in the General Assembly during the 1830s and 1840s, as a delegate to the Georgia Secession Convention of 1861, and as an 1877 delegate to the state constitutional convention. Alfred le Sesne Jenkins worked in Chinese and Asian affairs for the U.S. State Department after World War II (1941-45). He accompanied U.S. president Richard Nixon on his historic visit to China in 1972. Georgia's first Pulitzer Prize winner, Caroline Miller, was living in Baxley when she wrote her book *Lamb in his Bosom*. Environmentalist Janisse Ray a resident of Baxley received acclaim for her award-winning book *Ecology of a Cracker Childhood* (1999).

Baxley was the first small municipality in the United States to establish a water works system. Baxley is located at the crossroad of Highways #1 and #341. The county is home to several outdoor attractions Lake Mayer, The A. Randall Tuten Environmental Park, and Moody Swamp. The Edwin I. Hatch Nuclear Power plant is located near Baxley. Altamaha Technical College operates a satellite campus in Baxley. Annual events include Baxley Tree Fest, Surrency Day, and Winter Wonderland.

Chapter 2 - Local Natural Hazard, Risk and Vulnerability (HRV).

The Hazard, Risk and Vulnerability assessment of the Appling County Hazard Mitigation Plan Update provides the basis upon which the subsequent goals, objectives and action plan are based. The plan update committee reviewed the hazards identified in the original plan as being capable of potentially affecting the county and municipalities. This involved reviewing FEMA worksheets #1 (Identify the Hazards), #2 (Profile Hazard Events) and #3 (Inventory of Assets). As well as introducing updated hazard data obtained from the National Climatic Data Center, that was then used to create a Hazard Frequency Table.

Additionally, to help assess the risk associated with each hazard a worksheet developed from the “FEMA Mitigation Plan Review Reference Manual” was used. The worksheet asked committee members to rate each hazard based upon several characteristics; Historical Occurrence, Probability, Vulnerability, Maximum Threat, Severity of Impact, and Speed of Onset. These ratings provided a detailed assessment and a prioritization of each hazard. The hazards identified in this chapter are listed in order of their perceived threat, with number one being the greatest. A copy of this worksheet can be found in Appendix D, III.

This combination of reviewing material from the original plan and updated hazard data allowed the committee to narrow the list to include only the hazards that were most likely to negatively impact the county. The committee concluded that the ten hazards included in the original plan still pose a direct, measurable threat to Appling County. Additionally, one new hazard was added, Excessive Heat. Of these, eight of the nine hazards pose threats to the entire county. Tornadoes, severe winter storms, Excessive Heat, thunderstorm/windstorms, hailstorms, Tropical Storms, Hurricanes and drought are all potential threats to the entire community. These hazards are non-spatially defined and have an equal probability of occurring anywhere in the county. Therefore, the locations of past occurrences will have no relation to the location of future events.

The other three identified, Flooding, Dam Failure and wildfire, are isolated to select areas of the county. Their probability of occurrence is directly related to specific locations within the county; flood plains, dam locations and forests. Each of these potential hazards is addressed individually with relevant supporting data. Additionally, the committee determined that no other hazards needed to be added.

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

Chapter 2 Section	Updates to Section
I. Thunderstorms/Windstorms	<ul style="list-style-type: none"> Updated data research;
II. Tornado	<ul style="list-style-type: none"> Updated data research;
III. Wildfire	<ul style="list-style-type: none"> Updated data research;
IV. Excessive Heat	<ul style="list-style-type: none"> New Hazard
V. Drought	<ul style="list-style-type: none"> Updated data research;
VI. Winter Storm	<ul style="list-style-type: none"> Updated data research;
VII. Hailstorm	<ul style="list-style-type: none"> Updated data research;
VIII. Flood	<ul style="list-style-type: none"> Updated data research;

IX. Tropical Storm	<ul style="list-style-type: none"> • Updated data research;
X. Dam Failure	<ul style="list-style-type: none"> • Updated data research;
XI. Hurricane	<ul style="list-style-type: none"> • Updated data research;

Table 2.1: Overview of updates to Chapter 2: Local Natural Hazard, Risk and Vulnerability (HRV)

I. Thunderstorms/Windstorms

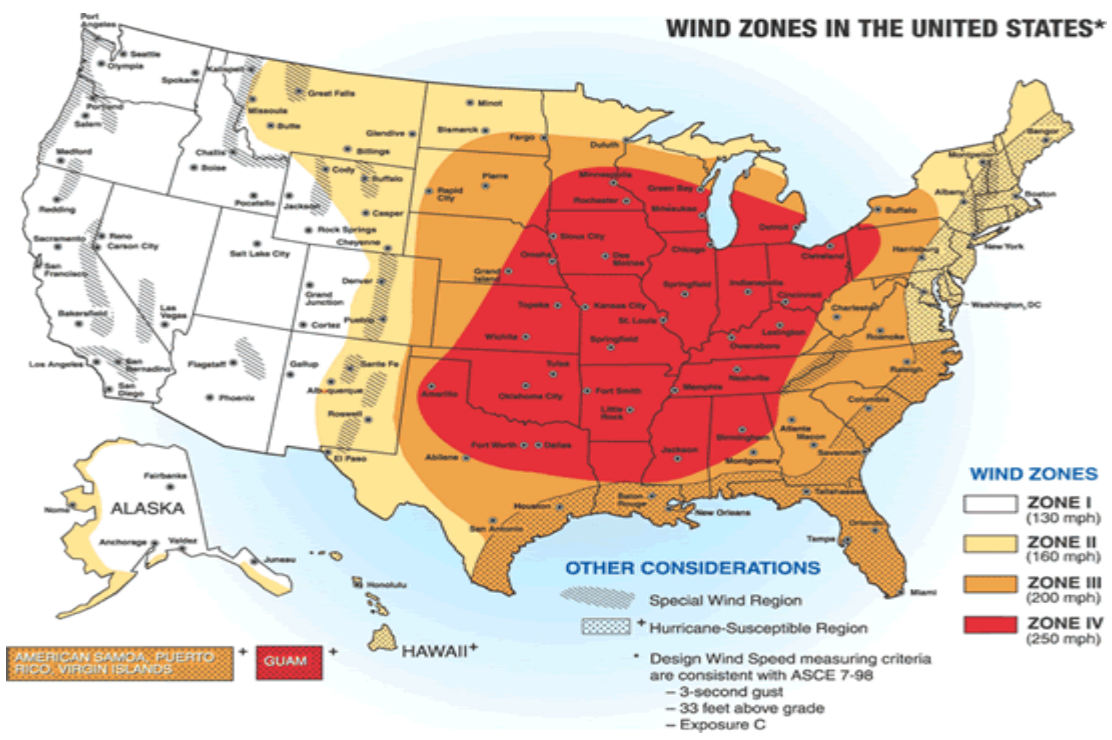
A. Hazard Identification

For the purpose of analysis, the two hazards of thunderstorms and windstorms have been consolidated. A thunderstorm is formed as a result of a combination of warm air rising, moisture, and a force capable from a combination of moisture, rapidly rising warm air, and a force capable of lifting air such as a warm and cold front, a sea breeze or a mountain. All thunderstorms contain lightning. Thunderstorms may occur alone, in clusters or in lines. Thus, it is possible for several thunderstorms to affect one location in the course of a few hours. Some of the most severe weather occurs when a single thunderstorm affects one location for an extended time. Thunderstorm winds are generally short in duration involving straight-line winds and/or gusts in excess of 50 mph. Thunderstorm winds tend to affect areas of the county with significant tree stands, as well as areas with exposed property and infrastructure, and above ground utilities. Thunderstorm winds can cause power outages, transportation and economic disruptions, significant property damage and pose a high risk for injuries and loss of life. Lightning is particularly dangerous to people, since although the bolt normally travels directly from cloud to the ground, it can also occur at angles away from the storm, and at a great distance.

B. Hazard Profile

Location

Since Thunderstorms/Windstorms are non-spatial entities they have the potential to occur anywhere within Appling County. Therefore all parts of the county could be potentially subject to this hazard and there is no specific area that would necessarily be more likely to have one.



Extent

NOAA (The National Oceanic and Atmospheric Administration) defines a “severe thunderstorm” as one that has winds in excess of 50 knots and/or hail of .75. Thunderstorm winds as recorded in the NCDC database range from 0 to 60 knots. In addition, the Beaufort wind scale designates categories based on wind speed and appearance. The scale can be viewed below. This is most often used as the measurement of extent for a Thunderstorm/Windstorm. Reported thunderstorms in Appling County have had wind speeds ranging from 43 to 70 knots.

Specifications and equivalent speeds									
Beaufort wind scale	Mean Wind Speed		Limits of wind speed		Wind descriptive terms	Probable wave height in metres*	Probable maximum wave height in metres*	Seastate	Sea descriptive terms
	Knots	m/s	Knots	m/s					
0	0	0	<1	0-0.2	Calm	-	-	0	Calm (glassy)
1	2	0.8	1-3	0.3-1.5	Light air	0.1	0.1	1	Calm (rippled)
2	5	2.4	4-6	1.6-3.3	Light breeze	0.2	0.3	2	Smooth (wavelets)
3	9	4.3	7-10	3.4-5.4	Gentle breeze	0.6	1.0	3	Slight
4	13	6.7	11-16	5.5-7.9	Moderate breeze	1.0	1.5	3-4	Slight-Moderate
5	19	9.3	17-21	8.0-10.7	Fresh breeze	2.0	2.5	4	Moderate
6	24	12.3	22-27	10.8-13.8	Strong breeze	3.0	4.0	5	Rough
7	30	15.5	28-33	13.9-17.1	Near gale	4.0	5.5	5-6	Rough-Very rough
8	37	18.9	34-40	17.2-20.7	Gale	5.5	7.5	6-7	Very rough-High
9	44	22.6	41-47	20.8-24.4	Severe gale	7.0	10.0	7	High
10	52	26.4	48-55	24.5-28.4	Storm	9.0	12.5	8	Very High
11	60	30.5	56-63	28.5-32.6	Violent storm	11.5	16.0	8	Very High
12	-	-	64+	32.7+	Hurricane	14+	-	9	Phenomenal

History

The occurrence of thunderstorms/windstorms in Appling County in the past years has posed a serious threat to the citizens of Appling County. As pointed out in the NCDC statistics in Appendix A, thunderstorms/windstorms were recorded 122 times. This number of course does not include all of the thunderstorms/windstorms during this time period due to the great degree of difficulty in reporting every event that occurs. However, it does portray the high probability of occurrence that this hazard presents. The severity of the storms can obviously vary with many causing little or no damage at all, which helps explain why many go unreported or underreported. None the less, these events have a total property crop damage amount of \$434,700. There have also been a total of 13 reported injuries from thunderstorms. These figures illustrate the serious threat posed by Thunderstorms/Windstorms to the citizens and property of Appling County.

Reported thunderstorms in Appling County have had wind speeds ranging from 43 to 70 knots. Between 2003 and 2013 there have been forty one storms with wind speeds over 50 knots. The highest registered storm was measured at a knot speed of 70 on March 6, 1996. This event downed power lines and trees.

One other notable storm occurred on June 29th, 2002 near the City of Baxley. Thunderstorm winds blew an unsecured camper top into the window of a restaurant. The window was broken and five patrons were injured. Again on December 17th, 2012 a pre-frontal squall line interacted with marginal instability and strong unidirectional speed shear that produced scattered severe storms over southeast Georgia during the afternoon. As a result of 45 kt. winds, trees were blown down along State Road 15 and U.S. Highway 1 near Baxley. Damages were reported at \$2,000.

Emergency response teams were utilized during the events along with the county's road department to assist in cleanup. With as much of an impact as thunder and wind storms have had in the past, it is reasonable to expect this trend to continue. In the future, measures suggested in this plan need to be enacted to limit the amount of impact a thunderstorm/windstorm can have on Appling County. As a result of thunderstorms/windstorms, power outages occur, trees fall down, fire may be initiated by lightning, ponding of water, hydroplaning of vehicles, damage to roofs of buildings, and at its extreme a thunderstorms/windstorms can cause a loss of life.

Probability

As stated above, in the last fifty three years there have been 122 recorded occurrences of Thunderstorm-Windstorms. The current chance per year that a thunderstorm/windstorm can occur is 2.3, as noted in the Hazard Frequency Table (Appendix D, II). Additionally, the annual frequency for the last ten and twenty years are 4.80 and 4.80, respectively. Finally, keeping in mind that the older the data the more incomplete it is, we can see that the annual frequency for the last fifty years is 2.44, with a historical recurrence interval of .43 years. The probability is "Highly Likely" that Appling County will continue to experience severe thunderstorm/windstorms multiple times a year.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	"Highly Likely"
10-25	"Likely"
25-50	"Unlikely"
50 or greater	"Highly Unlikely"

C. Inventory Assets and Potential Losses

The total percentage of the number of structures that are exposed to the non-spatial threat of Thunderstorms in Appling County is 100% as noted on Worksheet 3A (Appendix D, III). In Appling County, there are 11,024 residential structures, 1,308 commercial structures, 138 total industrial facilities in Appling County, 3,497 agricultural structures, 124 religious/non-profit structures; 186 government facilities, 32 educational facilities, and 17 utility structures. All of these structures are equally exposed to a thunderstorm. Please see Appendix A, IV to examine the county. Of the county's 152 identified critical facilities on the GEMA Wind Hazard Report, 45 received a hazard score of three, 107 received a hazard score of two. Additionally all of the county's critical facilities are exposed to the threat of a thunderstorm.

The total built structures of Appling County have an estimated replacement value of \$601,626,940. The total value of all residential structures in Appling County is \$103,123,518. The value of commercial structures in Appling County is \$24,882,392. Industrial facilities in Appling County have a value of \$2,782,882. The value of agricultural structures in Appling

County is \$20,648,082. Religious/non-profit structures in Appling County are valued at \$11,003,890. Government facilities in Appling County are valued at \$21,075,625. The educational facilities in Appling County are valued at \$22,000,000. Finally, the value of utility structures in Appling County is \$396,020,551. At this time, there are no known future buildings, infrastructure or critical facilities to be located in the county requiring special mitigation strategies. Additionally, all 18,236 residents of Appling County could be affected by a Thunderstorm.

D. Development Trends

There are no specific trends concerning thunderstorms/windstorms in the comprehensive plan. In the future, any number of structures (commercial, industrial, public/institutional, residential), critical facilities, and infrastructure will be vulnerable to thunderstorms/windstorms because they are a non-spatial hazard. The Appling County Joint Comprehensive Plan can be found in Appendix B.

E. Multi-Jurisdictional Concerns

In the incorporated and unincorporated areas of Appling County, the threat of natural non-spatial occurrences including thunderstorms/windstorms is equally applicable. All areas of the county are susceptible to non-spatial threats. The county is located in Wind Zone III as noted on the Wind Map above. However, as mentioned earlier the potential for damage is greater within the municipalities than it is in the unincorporated portions of the county, due to the larger amount of development. Additionally the majority of the county's critical facilities are located within the municipal boundaries.

To address specific critical facilities and infrastructure, each facility was examined on an individual basis, entered into the GEMA database, and located on maps, please see Appendix A, I.

F. Summary

Overall, thunderstorm winds do pose a great threat to Appling County, both to property and residents. Though severe storms do not occur frequently, each one has the ability to inflict a great amount of damage and do so anywhere in the county. Since the creation of the 2008 Hazard Mitigation Plan, very little has changed in regards to the vulnerability of the county to thunderstorms. They have continued to destroy large amounts of property and natural resources throughout the county and its' municipalities. However, through a concerted effort between the local municipalities and the Pre-Disaster Mitigation Planning Committee, measures will be taken to help reduce the impact of a thunderstorm upon the residents and property of Appling County.

II. Natural Hazard Event - Tornado

A. Hazard Identification

A tornado is a violently rotating column of air extending from a thunderstorm to the ground. The most violent tornados are capable of tremendous destruction with wind speeds of 250 mph or more. Damage paths can be in excess of 1 mile wide and 50 miles long. Though Tornadoes can occur in any state they occur most frequently in the Midwest, Southeast and Southwest. Although the Tornado Season is considered to be between March and August, they can occur at any time, which makes them even more unpredictable.

B. Profile Tornado Events

Location

Since Tornados are non-spatial entities they have the potential to occur anywhere within Appling County. Therefore all parts of the county could be subject to a Tornado and there is no specific area that would necessarily be more likely to have one.

Extent

The potential damage to structures resulting from tornadoes can range from minor damage to incredible damage. They also can cause a great deal of damage to agriculture and natural resources. This damage range is classified in the following chart which shows the Enhanced Fujita (EF) Scale:

Enhanced Fujita Scale		
Category	Wind Speed	Potential Damage
EF0	105–137 km/h 65–85 mph	Light damage. Peels surface off roofs; some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; mobile homes pushed off foundations or overturned; sign boards damaged.
EF1	138–179 km/h 86–110 mph	Moderate damage. Roofs torn off frame houses; windows and glass doors broken; moving autos blown off roads; mobile homes demolished; boxcars overturned.
EF2	180–217 km/h 111–135 mph	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	218–266 km/h 136–165 mph	Severe damage. Some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	267–324 km/h 166–200 mph	Devastating damage. Well-constructed houses and whole frame houses completely leveled; structures with weak foundations blown away some distance; trees debarked; cars thrown and small missiles generated.
EF5	>324 km/h >200 mph	Incredible damage. Strong frame houses leveled off foundations and swept away; with strongest winds, brick houses completely wiped off foundations; automobile-sized missiles fly through the air in excess of 100 m (109 yd); cars thrown and large missiles generated; incredible phenomena will occur.

The most severe category of Tornado recorded in Appling county was as EF 2, which has occurred on two occasions. However, there have been additional Tornados in Appling County varying EF0 to EF 1.

History

In Appling County, the occurrence of tornados in the past has posed a moderate to high threat to the community. As pointed out in the NCDC statistics, in the past fifty-nine years, tornadoes were recorded fifteen times. The impact of these events occurring has been minimal in Appling County over the past fifty years. The past recorded events have resulted in \$936,000 in property damage. No lives have been lost due to tornados; however, there have been nine recorded injuries.

On two occasions there have been EF 2 Tornados reported in Appling County. One of these occurred on April 3, 1961 causing 3 thousand dollars of property damage. The second occurred on December 2, 2009 causing no property damage but two injuries. The event was rated as an EF-2 with winds of 135 mph. Three metal building structures were destroyed with one removed from its foundation and blown into a pile of scrap metal. Two middle aged individuals were in the bedroom, preparing for work, when the funnel destroyed the mobile home. Both escaped with only minor cuts despite the fact that the doublewide was completely obliterated and the frames bent. Once again at this location the winds were rated at 135 mph for a strong EF-2 rating.

Additionally, there were 4 injuries recorded in a March 13, 1986 F1 Tornado that occurred in the County. In 1984 and 1986 two Tornados caused a combined \$500,000 in property damage. More recently a EF 0 Tornado caused \$200,000 in damage and two injuries.

Emergency response teams including the sheriff's department, police, fire and rescue, volunteers, property owners, EMS, and EMA have been utilized during these events along with the county road department. Even though the frequency of occurrences is moderate, the impact from one tornado has the potential to destroy numerous properties. In the future, measures suggested in this plan need to be enacted to limit the amount of impact a tornado can have on Appling County. As a result of tornados, trees and power lines fall down, properties destroyed or damaged, roads may become impassible, and at its extreme a tornado can cause a loss of life.

Probability

As stated above, in the last fifty nine years there have been fifteen recorded occurrences of Tornados. The current chance per year that a tornado will occur is .25, as noted in the Hazard Frequency Table (Appendix D, I). Additionally, the annual frequency for the last ten and twenty years are .2 and .4, respectively. Finally, keeping in mind that the older the data the more incomplete it is, we can see that the annual frequency for the last fifty years is .24, with a historical recurrence interval of 3.93 years. Although tornados may not occur on a yearly basis, it is still "Highly Likely" that there will be an occurrence in the next one to ten five years.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	"Highly Likely"
10-25	"Likely"

25-50	“Unlikely”
50 or greater	“Highly Unlikely”

C. Inventory Assets and Potential Losses

Since Tornados are a non-spatial hazard they have the potential to damage 100% of the structures in the county as noted on Worksheet 3A (Appendix D, III). In Appling County, there are 11,024 residential structures, 1,308 commercial structures, 138 total industrial facilities in Appling County, 3,497 agricultural structures, 124 religious/non-profit structures; 186 government facilities, 32 educational facilities, and 17 utility structures. All of these structures are equally exposed to a Hurricane. Please see Appendix A, IV to examine the county. Of the county’s 152 identified critical facilities on the GEMA Wind Hazard Report, 45 received a hazard score of three, 107 received a hazard score of two. Additionally all of the county’s critical facilities are exposed to the threat of a Tornado. With 18,236 residents in Appling County, any number could be affected by a Tornado.

The total built structures of Appling County have an estimated replacement value of \$601,626,940. The total value of all residential structures in Appling County is \$103,123,518. The value of commercial structures in Appling County is \$24,882,392. Industrial facilities in Appling County have a value of \$2,782,882. The value of agricultural structures in Appling County is \$20,648,082. Religious/non-profit structures in Appling County are valued at \$11,003,890. Government facilities in Appling County are valued at \$21,075,625. The educational facilities in Appling County are valued at \$22,000,000. Finally, the value of utility structures in Appling County is \$396,020,551. At this time, there are no known future buildings, infrastructure or critical facilities to be located in the county requiring special mitigation strategies.

Estimating the potential losses caused by a tornado is largely dependent upon where it touches down within the county. A tornado that stays within the unincorporated portions of Appling County, which constitutes the majority of the county, will cause far less property damage than one that occurs in downtown Baxley. If a tornado that occurs within a residential area or touches down at an industrial site the potential property damage and loss of life will be significant.

D. Development Trends

A review of comprehensive plan illustrates that the county currently has no land use or development trends specifically related to tornados. There is little commercial, residential and industrial development in Appling County. In Appling County, future land use maps cannot address the threat of natural non-spatial occurrences such as tornados. Therefore, there is no way to tell whether new development is in a hazard prone area since all areas are equally vulnerable. In the future, any number of structures (commercial, industrial, public/institutional, residential), critical facilities, and infrastructure, in any part of the county, could potentially be damaged by a tornado.

E. Multi-Jurisdictional Concerns

In the incorporated and unincorporated areas of Appling County, the threat of natural non-spatial occurrences including tornados is equally applicable. All areas of the county are susceptible to non-spatial threats. However, the amount of damage caused by a tornado occurring within one of the municipalities would most likely be greater than if one occurred in the unincorporated area, due to the differences in amount of development and population density.

F. Hazard Summary

Through examination of the hazard occurrence data and historical trends the committee has determined that tornados remain a threat to the county. Even though the frequency of occurrences is small, the impact from one tornado has the potential to destroy numerous properties and cause harm to residents. Emergency response teams including the sheriff's department, police, fire and rescue, EMS, and EMA have been utilized during these events along with the county road department. In the future, measures suggested in this plan need to be enacted to limit the amount of impact a tornado can have on Appling County. The committee reviewed previous Tornado mitigation action steps proposed in the approved 2008 plan and made the changes where needed. Continuing to address these issues will be an ongoing task for both county and city officials.

III. Natural Hazard Event- Wildfire

A. Hazard Identification

A wildfire is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures. Wildfires often begin unnoticed and spread quickly and are usually signaled by dense smoke that fills the area for miles. Naturally occurring and non-native species of grasses, brush and trees fuel wildfires.

When talking about a natural occurring wildfire, caused by natural sources such as lightning strike, a combination of available fuel, weather and topography work together to determine when a wildfire will ignite, how quickly it will travel and the intensity of the fire. These factors are also relevant when looking at wildfires that occur as a result of human interaction with the environment, including campfires, cigarettes, debris burning, etc. Additionally, communities with a large amount of wooded or grassy areas are at greater risk. Prolonged drought or periods of Excessive Heat can also increase the likelihood of wildfire.

When looking at wildfire risks for a Community Wildfire Protection Plan, the Georgia Forestry Commission takes into consideration the Wildland-Urban Interface. A wildland-urban interface is an area where structures and other human development meet or intermingles with undeveloped wildland or vegetative fuels.

There are three major categories of wildland-urban interface. First, boundary wildland-urban interface is characterized by areas of development where homes, especially new subdivisions, press against public and private wildlands, such as commercial forests or public parks. Second,

intermix wildland-urban interface occurs in areas where improved property and/or structures are scattered and interspersed in wildland areas. Finally, island wildland-urban interface, also known as occluded interface, is an area of wildland within predominantly urban or suburban areas.

B. Profile Hazard Event

Location

The Georgia Forestry Commission estimates that 68% of Appling County is still woodland. Large tracts of timberland are scattered throughout the county with large industrial holdings in the eastern and northeastern parts. Most of the timberlands consist of industrial pine plantations located in flatwoods areas with a heavy understory fuel loading of heaths, gallberry and palmetto. Due to the large amount of wooded and undeveloped land in Appling County wildfires have the potential to occur almost anywhere in the county outside of the municipalities. Though there is the potential for a wildfire to spread into the city limits, especially in the less developed municipalities of Graham and Surrency, the highest areas of concern fall in the unincorporated portions.

Wildfires have occurred in different locations throughout Appling County. Wildfires occur in the forest areas of the county and reach to where the forest meets the boundaries of the cities. Firebreaks and other local methods of fire protection protect the areas where the forest meets subdivisions throughout the county

Maps depicting areas of fire susceptibility, occurrence, and level of concern throughout the county can be found in Appendix A, III. Additionally, refer to the Georgia Forestry Commission Community Wildfire Protection Plan in Appendix for additional information on the location.

Extent

The most appropriate measurement of the extent of a Wildfire is the total acres burned. This illustrates the amount of area the wildfire encompassed and provides the opportunity to compare one event to another. The Georgia Forestry Commission calculated an 89 average (1959-2009) for acres burned in Appling County. These fires have burned an average of 457 acres annually.

History

The data for this hazard is limited, with the number of actual fires each year unavailable. However, the Georgia Forestry Commission has provided the average number of fires for the last fifty years and twenty years. Over the past fifty years, Appling County has averaged around 89 reported wildfires a year with almost 50% of these occurring during January, February, March and April. These fires have burned an average of 457 acres a year over the same period, though generally there has been some decrease since the advent of burning permits the past 20 years. Still in the year 1999 the county lost over 1900 acres to wildfire.

The leading cause of fires in Appling County has been debris burning accounting for over 50% of the fires and about 46% of the acres lost. The other leading cause of fires were incendiary or

arson, lightning, machinery and smoking each accounting for around 10% of the fires reported and 42% of the acres lost.

Georgia Forestry Commission Wildfire Records show that in the past five years, 2 Homes have been lost or damaged by wildfire in Appling County resulting in estimated losses of \$52,000 along with 14 outbuildings valued at \$49,100. According to reports during this period 15 homes have been directly or indirectly threatened by these fires. Additionally 3 vehicles valued at \$26,500 and 3 pieces of other mechanized equipment suffered damages estimated at \$113,500. This is a substantial loss of non-timber property attributed to wildfires in Appling County.

The steady number of fires perhaps is due to increases of population in the rural areas, while the reduction in average size from four acres per fire to just under three acres per fire could be contributed to better response times and equipment from both the Georgia Forestry Commission and the rural fire departments.

Probability

The frequency of Wildfire occurrence per year is projected at 62.67. Additionally, the annual frequency for the last ten and twenty years are estimated at 37.6 and 18.8, respectively. Finally, keeping in mind that the older the data the more incomplete it is, we can see that the annual frequency for the last fifty years is 7.52, with a historical recurrence interval of .01 years. It is obvious that the probability of wildfire occurrence is “Highly Likely” each year. However as mentioned the data for wildfire occurrences is limited.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	“Highly Likely”
10-25	“Likely”
25-50	“Unlikely”
50 or greater	“Highly Unlikely”

C. Inventory Assets and Potential Losses

Through housing formation obtained from the Appling County 911 office and the County Tax Assessor, the determination was made that 26.1%% (4,259) of all structures in the county are within the wildfire hazard area, as noted on Worksheet 3A (Appendix D, III). Of the structures located in the wildfire zones; there are 3,239 residential (29.4%), 150 commercial (11.5%), 660 Agricultural (18.9%), 185 Government (99%), 6 Education (18.8%) and 17 Utility (100%). There are no known religious/non-profit facilities within wildfire zones. In terms of the number of people residing or working within the wildfire zones, the estimated numbers are as follows; 2,454 residential (25%), 410 commercial (11%), 80 Agricultural (19%), 1,494 Government (99%) and 157 Utility (100%). Please view on Worksheet 3A (Appendix D, III). Of the county’s one hundred fifty-two critical facilities, 53 are within the wildfire hazard area.

The total value of all structures within the wildfire zones is estimated to be \$458,598,676 or 76.2% of the total value of structures in the county. The value of structure within the wildfire hazard area by category are; \$30,318,314 residential, \$2,861,475 commercial, \$3,902,487 Agricultural, \$20,970,246 Government, \$4,136,000 Education and \$396,020,551 Utility.

To address specific critical facilities and infrastructure, each facility was examined on an individual basis, entered into the GEMA database, and located on maps, please view Appendix A, III.

D. Development Trends

The intersection of U.S. Highways 1 & 341 are within Appling County with most of the population residing in Baxley, Surrency and Graham. There are also numerous homes in scattered communities located near the Altamaha River across the northern part of the county. Like most counties in southeast Georgia there are increasing numbers of homes being built out in the country away from traditional population centers.

Appling County is protected by the Appling County Fire Department consisting of 9 rural volunteer fire departments well-spaced throughout the county. The city of Baxley is protected by the Baxley Fire Department with two fire stations located in Baxley. The Georgia Forestry Commission maintains a county protection unit located three miles south of Baxley to respond to wildland fires within the county. The city of Baxley is serviced with a modern pressurized water system with hydrants throughout the city and in the industrial area just east of the city.

There are several development trends that are related to wildfire occurrence and loss vulnerability. Appling County has a great deal of residences located in the unincorporated portions of the county. These structures are often in heavily wooded or grassy areas without fire breaks for protection. There are also a large amount of undeveloped lots in these rural areas that provide a high fuel load. Additionally, there are many unmarked lanes, dead end roads, and roads with little access, making emergency response more difficult.

This continued trend of building homes outside the city limits will increase the likelihood of wildfires damaging property and causing injuries. Other contributing factors identified by the Georgia Forestry Commission include an economy strongly dependent upon agriculture and timber, both of which can lead to fires. While Appling County has a significant agricultural presence, 68% of the county is still woodland. Large tracts of timberland are scattered throughout the county with large industrial holdings in the eastern and northeastern parts. Most of the timberlands consist of industrial pine plantations located in flatwoods areas with a heavy understory fuel loading of heaths, gallberry and palmetto.

In Appling County, future land use maps address the threat of wildfire. The City of Baxley has basic zoning ordinances in place. The unincorporated portions of the county and the Cities of Graham and Surrency have no basic zoning of land use regulations. This could influence the type and extent of all forms of development in those areas. Current land use planning and

development trends in Appling County are discussed in detail in the Comprehensive Plan (Appendix B).

E. Multi-Jurisdictional Concerns

As described earlier there are significant differences between the incorporated and unincorporated portions of Appling County in regards to wildfire vulnerability. Due to large amount of undeveloped forests in the unincorporated parts of the county the opportunity for a wildfire is very present. However, due to the wild land urban interface the municipalities and developed residential communities are not entirely immune to the possibility of a fire spreading into their boundaries.

In the unincorporated areas of Appling County, the fuel load is low to moderate throughout. The higher the fuel load the greater chance for fire. Major fuel types in the county consist of natural pine forest, CRP pine plantations adjacent to agriculture land throughout the region with hardwood bottoms near creeks and branches, and large paper/timber company plantations.

Appling County is protected by 9 organized community/volunteer fire departments located within 10 fire districts for the entire county. These districts include Altamaha Station, Ten Mile, Highway 144, Surrency, 4th District, County Line, Red Oak, Baxley, Appling County and Graham. The Georgia Forestry Commission maintains a county protection unit located about three miles south of Baxley to respond to wildfires throughout the county. The incorporated cities of the county and some adjacent areas of the county are serviced by a pressurized water system with hydrants available. However, much of the unincorporated portions of the county do not have a pressurized system and responders rely upon water tanks and other means of response.

According to the Georgia Mitigation Information System, portions of Appling County have Wildfire Hazard Scores ranging from 0-2. Approximately 74% of the unincorporated part of the county is located in zone one. However, there are areas scattered throughout the county that have scores of zero. Additionally, the area directly outside the city limits of Baxley is largely classified as a two, this is due to the Urban-Wildland interface. Finally before entering into Toombs County traveling north along U.S. 1, there is an area with a GMIS Hazard score of 2. Please see Appendix A, II to examine these areas.

F. Hazard Summary

Due to the large amount of forest and the growing wildland interface in Appling County, wildfire remains a significant threat to the lives and property of its citizens. Given the quick onset and destructive nature of wildfires, the update committee feels that the mitigation strategies included in this plan for reducing the impact of wildfire are extremely critical to the protecting the county. As a result of wildfire, properties are severely damaged or lost, natural resources are destroyed, evacuations are sometimes necessary, residents may become displaced, and at its extreme a wildfire can cause a loss of life. The continued trend of new builders to construct properties in the rural portions of the county increases both the likelihood of wildfires occurring and the likelihood of property damage. However, through future land use regulations and through the

future actions implemented with this plan, the threat of wildfires in the future should continue to decrease.

IV. Excessive Heat

A. Hazard Identification

Excessive Heat Watch - Conditions are favorable for an excessive heat event to meet or exceed local Excessive Heat Warning criteria in the next 24 to 72 hours.

Excessive Heat Warning - Heat Index values are forecast to meet or exceed locally defined warning criteria for at least 2 days (daytime highs=105-110° Fahrenheit).

Heat Advisory - Heat Index values are forecast to meet locally defined advisory criteria for 1 to 2 days (daytime highs=100-105° Fahrenheit).

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

B. Hazard Profile

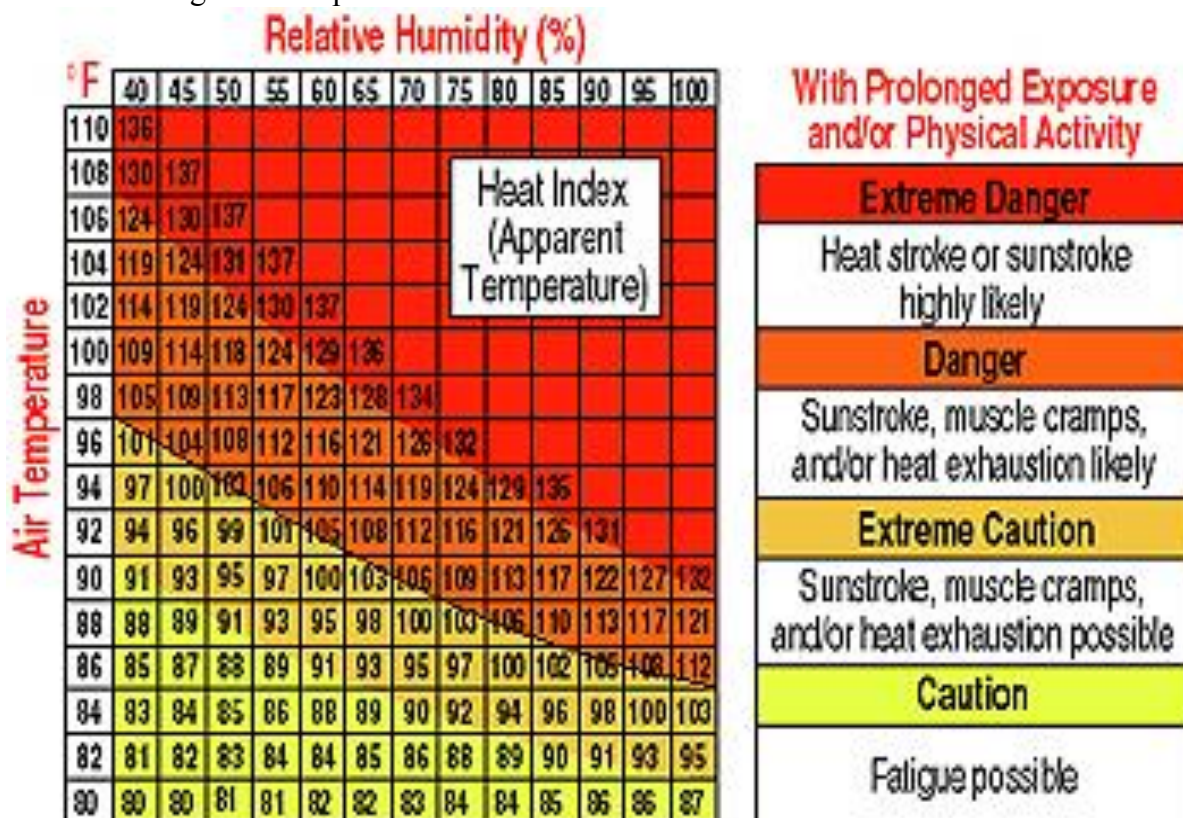
Location

Excessive Heat within the region could potentially affect the entire county equally. Therefore all parts of the county could be potentially subject to this hazard and there is no specific area that it would be more likely to occur.

Extent

In order to measure the extent of Excessive Heat the National Weather Service, uses the Heat Index (HI), a chart that accurately measures the apparent temperature of the air as it increases with the relative humidity. The Heat Index can be used to determine what effects the temperature and humidity can have on the population. To determine the Heat Index, you need the temperature and the relative humidity. Once both values are known, the Heat Index will be the corresponding number with both values. That number provides how it really feels. It is important to know that the Heat Index (HI) values are devised for shady, light wind conditions. Exposure to full sunshine can increase HI values by up to 15 degrees. Also, strong winds, particularly with very hot, dry-air can be extremely hazardous to individuals. (The Heat Index can be found below)

Outside temperatures during the summer months in this region of Georgia often exceed 100 degrees, and combined with high humidity levels, have the potential to pose a “Danger” or “Extreme Danger” to the public.



History

There have been multiple documented periods of Excessive Heat in the Appling County weather zone of impact including the surrounding counties, according to the National Climatic Data Center, local news stations and other sources. Although these events occurred in the last ten years, it is important to keep in mind that data for this hazard has only recently been recorded. Therefore the number of occurrences is assumed to be much higher.

One of the recorded instances of Excessive Heat occurred in September 2002. A strong ridge of high pressure aloft stagnated over the southeastern U.S. for several days during the first 11 days of September. Consequently, temperatures were unseasonably warm during the first part of September. Temperatures soared into the 90s across nearly all of north and central Georgia during this period. The hottest weather was broken into two periods, one from September 3rd to September 6th, and the second from September 9th through September 12th. Additionally, this period of excessive heat coincided with a drought for Appling County and the region.

Five years later in August of 2007 the county experienced another period of excessive heat, while also undergoing a drought. The temperature during this period regularly reached or exceeded 100 degrees Fahrenheit. The other occurrence was in 2010. This record breaking heat

wave started in late June and carried into the beginning of September. This was one of the hottest events in Georgia state history, with multiple all-time heat records tied or broken in the months of July, August and September. Excessive heat warnings were again issued in July of 2011.

A future occurrence of Excessive Heat could cause crops to be damaged or lost, restrictions on water use, the drying up of wells, and a generally negative affect on the county's well-being, in some cases Excessive Heat can even result in a loss of life. In the future, the measures put forth in this plan need to be enacted to limit the amount of impact Excessive Heat can have on Appling County.

Probability

As stated above, in the last fifty five years there have been unofficial recorded occurrences "Excessive Heat." Though there is not a large amount of occurrence it is important to keep in mind these occurrences have occurred in the last fifteen years. Taking this into consideration it should be considered "Highly Likely" that the county will experience another period of Excessive Heat in the next ten years.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	"Highly Likely"
10-25	"Likely"
25-50	"Unlikely"
50 or greater	"Highly Unlikely"

C. Inventory Assets and Potential Losses

The Appling County Joint Hazard Mitigation Plan Update Committee concluded that Excessive Heat, in itself, presents no direct threat to structures or critical facilities. However, Wildfire, and Drought, which can result from conditions of Excessive Heat were considered. Additionally, as a result of Excessive Heat, crops are damaged or loss, water use is restricted, wells become dry, nature is affected by a minimal water supply, and at its extreme, Excessive Heat can cause a loss of life.

Although the entire population of Appling County (18,368) is at risk to the effects of Excessive Heat (see Worksheet 3A in Appendix A), the elderly and very low income populations are most likely to not have air conditioning and be more vulnerable to Excessive Heat and high humidity. According to the 2010 U.S. Census, 2,456 persons (13.5%) in Appling County were aged 65 or higher and 4,230 individuals (23.2%) were living below the poverty line.

D. Development Trends

There are no specific trends concerning Excessive Heat in the county comprehensive plan. Future land use maps cannot address the threat of natural non-spatial occurrences.

E Multi-Jurisdictional Concerns

All of Appling County could potentially be affected by Excessive Heat conditions. All areas of the county are susceptible to non-spatial threats. There is not a specific impact map for this hazard. Please see Appendix A, IV to examine the county land use map.

F. Summary

The multiple recorded occurrences of Excessive Heat demonstrates potential threat this hazard poses to the county. Each occurrence has the potential to affect the county's economy, natural resources and population. Additionally, when an event coincides with a drought it will greatly increase the likelihood of wildfires. The potential devastation of these three hazards when occurring in conjunction illustrates the need for mitigation activities designed to lessen the impact of occurrences.

V. Natural Hazard Event – Drought

A. Hazard Identification

According to the National Oceanic and Atmospheric Administration, drought is a deficiency of moisture that results in adverse impacts on people, animals, or vegetation over a sizeable area.

The 2008 *Georgia Hazard Mitigation Plan Standard and Enhanced* points out that one of the most important characteristics of drought conditions is the length of time that a drought persists. Droughts lasting 1 to 3 months are considered short term, while droughts lasting 4 to 6 months are considered intermediate and droughts lasting longer than 6 months are long term.

Drought is also a key factor in wildfire development, establishing the dry conditions necessary to make natural fuels, such as grass, brush, trees and dead vegetation, more fire-prone.

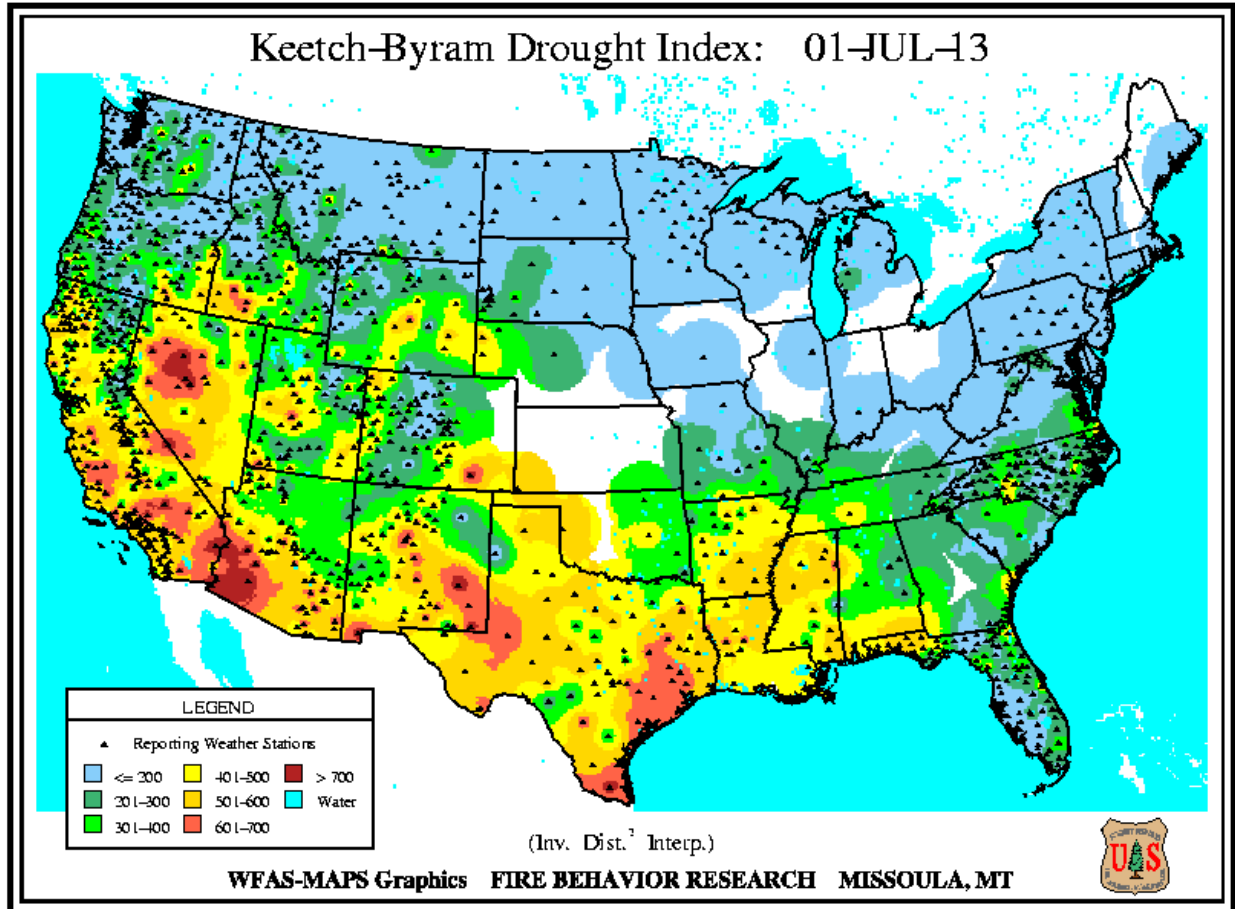
B. Profile Hazard Event

Location

Due to the fact that Drought is a non-spatial hazard and has the potential to effect the entire county it constitutes a significant threat to the prosperity and safety of the residents of Appling County. The presence of a drought affects the county in several different ways, the destruction of agriculture, depleted drinking water supply, and increasing the potential of wildfires. Much of Appling County is made up of forest, agriculture and woodlands which are all directly impacted by drought conditions. The adverse effects of an extended period of drought can affect all portions of the county, including within the municipalities.

Extent

The Keetch and Byram drought index (KBDI) is intended to measure the risk of wildfires occurring in a drought stricken area and in doing so provides a measurement of the extent of a drought. The KBDI attempts to gauge the precipitation needed in order for the soil to return to full moisture capacity. The number represents the net effect of evapotranspiration (the combined amount of evaporation and transpiration) and precipitation in producing cumulative moisture deficiency in upper soil layers. Zero is the point of no moisture deficiency and 800 is the maximum drought that is possible. The higher the number the worse drought and the higher risk of wildfire. Along the scale, the index numbers provide the amount of net rainfall that is required to reduce the index to zero, or saturation conditions. Therefore, Appling County could fall anywhere on the index between 200 and 800 KBDI.



History

The NCDC reports no droughts on record within Appling County. However, the United States Department of Agriculture records do report a federally declared Primary Natural Disaster Area for much of Georgia in 2011, including Appling County.

Since the implementation of the 2008 Appling Hazard Mitigation Plan there has been only one occurrence of drought. According to the NCDC this drought occurred throughout the spring and summer of 2011, with much of Georgia being classified by the United States Department of Agriculture (USDA) as a Primary Natural Disaster Area due to an ongoing drought and excessive heat that has damaged thousands of acres of crops. The drought was determined to have begun on April 15, 2011 and continued into September 2011. Much of the southern half of the state was classified to be in an Extreme Drought, while the northern areas fared slightly better and were only classified as being in a minor to moderate drought. Rainfall deficits by the end of August ranged from 5 to 10 inches below normal throughout many central and north Georgia counties. Ninety-one counties within Georgia, including Appling, were classified in a severe to extreme drought situation by the end of August 2011 (Appendix A, V.) Dozens of counties, mainly across central and South Georgia suffered 30 percent or more crop loss during this time frame. These crops include forage crops, pasture, grain crops, cotton, peanuts, and tobacco. Although there is no reported estimate of the amount of crop damage for Appling County alone, the total estimate for the state was in excess of \$100 million.

See the National Climatic Data Center (NCDC) table in Appendix A, V for additional details regarding past hazard events in Appling County.

Probability

As stated above, in the last six years there has been one recorded occurrences of drought in Appling County. The current chance per year that a drought can occur is .17, as noted in the Hazard Frequency Table (Appendix D, II). Additionally, the annual frequency for the last ten and twenty years are .1 and .05, respectively. Finally, keeping in mind that the older the data the more incomplete it is, we can see that the annual frequency for the last fifty years is .02, with a historical recurrence interval of 6.0 years. Based off the frequency of occurrence of droughts, especially in the last ten years, it is “Highly Likely” that there will be a drought in the next ten years.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	“Highly Likely”
10-25	“Likely”
25-50	“Unlikely”
50 or greater	“Highly Unlikely”

C. Inventory Assets and Potential Losses

The Appling County Joint Hazard Mitigation Plan Update Committee concluded that drought, in itself, presents no direct threat to the critical facilities. However, Wildfire, as a result of drought, was considered, and the Committee determined that in this manner the hazard poses a significant threat to the county.

In addition, it is important to consider that drought impacts residents, public health, and agriculture. A drought reduces the amount of available water in area and since the majority of homes and businesses draw from underground water sources they are dependent upon it's' availability. Therefore all of the residents of Appling County (18,236) are at risk from the impact of a drought. (See Worksheet 3A in Appendix III).

For an estimate of potential losses due to drought it seems most appropriate to focus upon agriculture. To see an estimate of potential losses from a wildfire please refer to Section II of this chapter. In the 2007 Census of Agriculture, Appling County had a total of 494 farms, with 101,566 acres of farm land in use. (Appendix C).The total market value of products sold for 2007 was \$75,144,000.

D. Development Trends

There are no specific trends concerning drought in the county comprehensive plan. Future land use maps cannot address the threat of natural non-spatial occurrences including drought. However, the addition or growth of any new structures that is agricultural related has the potential of being vulnerable to and affected by drought.

E Multi-Jurisdictional Concerns

All of Appling County could potentially be affected by drought conditions, due to its' effect on the water supply and wildfire conditions. However, since most of the county farms and agriculture is located outside the city boundaries there is the greater risk for crop damage and direct economic loss in those areas. Additionally, the potential for wildfires is greater in the unincorporated parts of the county.

Please see Appendix A, V to examine the county.

F. Hazard Summary

Drought has undoubtedly affected Appling County for decades. A single occurrence has the potential to have a tremendous negative impact on the local economy. In addition to the threat to economic interests, droughts can cause increased wildfires, public health issues, and reduce the water quality/supply. The county is largely dependent upon its natural resources and periods of drought pose a great threat. In the future, the update committee and its' partners will make a concerted effort to implement the actions included in this plan in order to lessen the impact of drought on the county's resources and residents.

VI. Natural Hazard Event- Winter Storms

A. Hazard Identification

Winter storms are non-spatial hazards that for Appling County bring the threat of freezing rain and ice storms. A heavy accumulation of ice, especially when accompanied by high winds, devastates trees and power lines, which affect structures, and infrastructures. Direct effects to residences and commercial building can include loss of utilities, roof damage and busted water pipes. Additionally, sidewalks, streets, and highways can become extremely hazardous to pedestrians and motorists, resulting in injury or loss of life.

B. Profile Hazard Event

Location

Since Winter Storms are non-spatial entities they have the potential to occur anywhere within Appling County. Therefore all parts of the county could be potentially subject to Winter Storms and there is no specific area that would necessarily be more likely to have one.

Extent

The extent of winter storms in Appling County is best measured by viewing the amount of ice, snow and sleet accumulation. The NCDC reports only three actual Winter Storms. But due to a limited amount of records it is impossible to completely predict the potential extent of future winter storms.

History

The occurrence of severe winter storms in Appling County in the past ten years has posed a minimal threat to the citizens. As mentioned above, according to NCDC statistics and FEMA records over six years, there has been only three recorded winter storms. It is important to remember that the NCDC has only recently been keeping up with the number of severe winter storms occurrences at the local level, so the true number of severe winter storms that have occurred in the past fifty years is unknown.

One of the most significant winter storms to affect Appling County occurred in March 1993. This event which affected much of the country is often referred to as the “Storm of the Century” or the “Blizzard of 93.” The storm affected at least twenty-six states, causing snow, thunderstorms, and freezing conditions. In Georgia, the storm brought several inches of snow to the northern part of the state and wind damage throughout much of the southern and coastal regions. The storm downed trees and power lines causing power outages lasting several days. On March 15th, 1993, Appling was one of ninety three Georgia counties declared eligible for federal emergency assistance. The exact amount of damage in Appling County is unknown.

Appling County endured a winter storm on February 12th, 2010 when nearly all parts of Georgia reported snowfall. As an upper level short wave trough approached the area from the west, reports of sleet began across portions of southeast Georgia during the late morning hours. By

evening, widespread reports of snowfall were reported with total amounts from 1 to 2 inches in some areas by 2 am on Feb. 13, 2010. Around 8:00 pm, the public reported about a half an inch of snow accumulation on vehicles about 2 miles north of Baxley. By 11:30 pm that evening, county law enforcement reported up to 2 inches of snow across the county. By 2 am on the 13th, a cooperative observer measured 1 inch of snow in Baxley.

The most recent snowstorm to be reported in Appling County occurred on January 1st, 2011. The NCDC reports that “Appling County emergency management reported freezing rain occurring with a glaze forming in the trees and icicles developing. This event continued until around noon [Eastern Standard Time]. The winter storm was a result of a an upper level short wave travelled east along the upper Gulf Coast with surface low pressure developing south of Louisiana and tracking across north Florida. Overrunning ahead of the low pushed Gulf.” This event resulted in snow and ice through much of the state. Although only a small amount of ice was reported in Appling County it was enough to make roads treacherous. There was no reported property damage or injuries.

Probability

Due to the fact that NCDC data shows Appling County only had three winter storms in the last 6 years, the frequency of occurrence per year is projected at .50. Additionally, the annual frequency for the last ten and twenty years are .3 and .15, respectively. Finally, keeping in mind that the older the data the more incomplete it is, we can see that the annual frequency for the last fifty years is .06, with a historical recurrence interval of 16.67 years. If merely basing the probability off of the historical occurrence data the likelihood of future occurrence may seem “Unlikely.” However since we know that the data is incomplete, it seems reasonable to assume that it is “Likely” a winter storm will occur within the next 10-25 years.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	“Highly Likely”
10-25	“Likely”
25-50	“Unlikely”
50 or greater	“Highly Unlikely”

C. Inventory Assets and Potential Losses

The total percentage of the number of structures that are exposed to the non-spatial threat of Winter Storms in Appling County is 100% as noted on Worksheet 3A (Appendix D, III). In Appling County, there are 11,024 residential structures, 1,308 commercial structures, 138 total industrial facilities in Appling County, 3,497 agricultural structures, 124 religious/non-profit structures; 186 government facilities, 32 educational facilities, and 17 utility structures. All of these structures are equally exposed to a Winter Storm. Please see Appendix A, IV to examine

the county. To address specific critical facilities and infrastructure, each facility was examined on an individual basis, entered into the GEMA database, and located on maps, please see Appendix A, VI. Of the county's 152 identified critical facilities on the GEMA Wind Hazard Report, 45 received a hazard score of three, 107 received a hazard score of two. Additionally all of the county's critical facilities are exposed to the threat of a Winter Storm.

The total built structures of Appling County have an estimated replacement value of \$601,626,940. The total value of all residential structures in Appling County is \$103,123,518. The value of commercial structures in Appling County is \$24,882,392. Industrial facilities in Appling County have a value of \$2,782,882. The value of agricultural structures in Appling County is \$20,648,082. Religious/non-profit structures in Appling County are valued at \$11,003,890. Government facilities in Appling County are valued at \$21,075,625. The educational facilities in Appling County are valued at \$22,000,000. Finally, the value of utility structures in Appling County is \$396,020,551. At this time, there are no known future buildings, infrastructure or critical facilities to be located in the county requiring special mitigation strategies.

The potential damage by a winter storm in Appling County is difficult to estimate due to several factors, most importantly the severity and duration of the storm. The characteristics of the event, such as whether it involves a large amount of ice, freezing rain or low temperatures, will influence the extent of damage caused. The county's roads and other forms of infrastructure could also be severely affected by ice as a result of a winter storm. Estimates for these losses are unavailable. Additionally, with 18,236 residents in Appling County, any number could be affected by a winter storm.

D. Development Trends

Appling County currently has no land use or development trends specifically related to winter storms.

E. Multi-Jurisdictional Hazard

In the incorporated and unincorporated areas of Appling County, the threat of natural non-spatial occurrences including severe winter storms is equally applicable. All areas of the county are susceptible to non-spatial threats. However, due to a greater amount of dirt roads in the unincorporated portions of the county there is increased threat outside of the municipal limits. There is not a specific map for this hazard. Therefore, any mitigation steps taken related to winter storms should be applied to the entire county.

F. Summary

Winter storms in Appling County, though low in occurrence, can cause a significant amount of property damage and pose a threat to personal safety. Ice and freezing rain can damage infrastructure, while also making roads hazardous. They have the potential of occurring anytime during the winter months and are equally hazardous for all portions of the county. The amount of damage that they cause is dependent upon the extent and severity of the hazard. The mitigation

action steps that have been included in this document are focused upon reducing the impact that a winter storm would cause to the property and residents of Appling County.

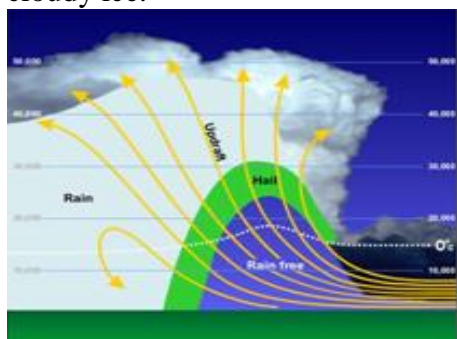
VII. Natural Hazard Event – Hailstorms

A. Hazard Identification

Hail is precipitation that is formed when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere. Hail can damage aircraft, homes and cars, and can be deadly to livestock and people.

Hailstones grow by collision with super cooled water drops. (Super cooled drops are liquid drops surrounded by air that is below freezing which is a common occurrence in thunderstorms.) There are two methods by which the hailstone grows, wet growth and dry growth, and which produce the "layered look" of hail.

In wet growth, the hailstone nucleus (a tiny piece of ice) is in a region where the air temperature is below freezing, but not super cold. Upon colliding with a super cooled drop the water does not immediately freeze around the nucleus. Instead liquid water spreads across tumbling hailstones and slowly freezes. Since the process is slow, air bubbles can escape resulting in a layer of clear ice. With dry growth, the air temperature is well below freezing and the water droplet immediately freezes as it collides with the nucleus. The air bubbles are "frozen" in place, leaving cloudy ice.



B. Hazard Profile

Location

Since Hailstorms are non-spatial entities they have the potential to occur anywhere within Appling County. Therefore all parts of the county could be potentially subject to this hazard and there is no specific area that would necessarily be more likely to have one.

Extent

The extent of a hailstorm is measured by the Hailstorm Intensity Scale (TORRO), which can be viewed below. The scale ranges from H0 to H10 and includes descriptions of the size of the hail, and the extent of the damage it could potentially cause. In the last ten years, hailstorms in Appling County have produced hail ranging in size from .75 in to 1.75in, as recorded by the

NCDC. Using the TORRO we can see that the intensity of the hail in Appling County has ranged between a H2 and an H6.

Hailstorm Intensity Scale (TORRO)				
	Intensity Category	Typical Hail Diameter (mm)*	Probable Kinetic Energy, J-m²	Typical Damage Impacts
H0	Hard Hail	5	0-20	No damage
H1	Potentially Damaging	5-15	>20	Slight general damage to plants, crops
H2	Significant	10-20	>100	Significant damage to fruit, crops, vegetation
H3	Severe	20-30	>300	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	>500	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60		Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-75		Severe roof damage, risk of serious injuries
H8	Destructive	60-90		(Severest recorded in the British Isles) Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

History

The NCDC reports that since 1968 there have been thirty two recorded hailstorms in Appling County, with a total of \$61,000 in property damage and no injuries. However, the actual number of occurrences and the amount of property damage and injuries is likely unknown. Eight of these storms have occurred since the previous plan was adopted. The largest reported hail since the adoption of the original plan was 1.75 inches.

One recent notable storm occurred on January 21st, 2012 when a broken pre-frontal line of thunderstorms moved across inland southeast Georgia during the evening where the air mass was moderately unstable. A short wave upper level trough moved over the low level front. The phasing of these convective ingredient ignited several severe storms across the Altamaha River basin which produced widespread hail. In Appling County, golf ball sized hail of 1.75 inches was reported along Highway 15. Fortunately no injuries or damage occurred as a result of this storm.

Probability

As stated above, in the last fifty years there have been 45 recorded occurrences of Hailstorms. The current chance per year that a hailstorm can occur is .87, as noted in the Hazard Frequency Table (Appendix D, II). Additionally, the annual frequency for the last ten and twenty years are 2.6 and 1.9, respectively. Finally, keeping in mind that the older the data the more incomplete it is, we can see that the annual frequency for the last fifty years is .9, with a historical recurrence interval of 1.16 years. The probability that hailstorms will continue to occur every couple of years is “Highly Likely.”

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	“Highly Likely”
10-25	“Likely”
25-50	“Unlikely”
50 or greater	“Highly Unlikely”

C. Inventory Assets and Potential Losses

The total percentage of the number of structures that are exposed to the non-spatial threat of Hurricanes in Appling County is 100% as noted on Worksheet 3A (Appendix D, III). In Appling County, there are 11,024 residential structures, 1,308 commercial structures, 138 total industrial facilities in Appling County, 3,497 agricultural structures, 124 religious/non-profit structures; 186 government facilities, 32 educational facilities, and 17 utility structures. All of these structures are equally exposed to a Hailstorm. Please see Appendix A, IV to examine the county. All of the county’s 152 identified critical facilities on the GEMA Wind Hazard Report, 45

received a hazard score of three, 107 received a hazard score of two. Additionally all of the county's critical facilities are exposed to the threat of a Hailstorm.

The total built structures of Appling County have an estimated replacement value of \$601,626,940. The total value of all residential structures in Appling County is \$103,123,518. The value of commercial structures in Appling County is \$24,882,392. Industrial facilities in Appling County have a value of \$2,782,882. The value of agricultural structures in Appling County is \$20,648,082. Religious/non-profit structures in Appling County are valued at \$11,003,890. Government facilities in Appling County are valued at \$21,075,625. The educational facilities in Appling County are valued at \$22,000,000. Finally, the value of utility structures in Appling County is \$396,020,551. At this time, there are no known future buildings, infrastructure or critical facilities to be located in the county requiring special mitigation strategies.

Though not necessarily directly life threatening, all of the county's 18,368 residents could potentially be affected by a hailstorm through hazardous road conditions, power outages, and property damage.

In addition to the potential damage to structures, crop damage as a result of hail could have a severe impact upon the county's local economy and food supply. Crop sales totaled \$27,820,000 in 2007.

D. Land Use and Development Trends

Appling County and its municipalities currently have no land use or development trends related to hailstorms. In the future, any number of structures (commercial, industrial, public/institutional, residential), critical facilities, and infrastructure will be vulnerable to hailstorms because they are a non-spatial hazard.

E. Multi-Jurisdictional Concerns

In the incorporated and unincorporated areas of Appling County (including municipalities), the threat of natural non-spatial occurrences including Hailstorms is equally applicable. All areas of the county are susceptible to non-spatial threats. However, due to the greater amount of development and structures within the municipalities, then in the unincorporated portions, there is a higher potential for property damage inside the city limits. There is not a specific map for this hazard.

F. Hazard Summary

Due to their high frequency Hailstorms do pose a threat to the county. However, since there has been a low amount of property damage and no injuries attributed to hailstorms it is difficult to determine the extent of the threat. The mitigation action steps that have been included in this plan

are focused upon reducing the impact that a hailstorm would cause to the property and residents of Appling County.

VIII. Natural Hazard Event – Flooding

A. Floods

A flood is a natural event for rivers and streams. Excess water from rainfall or storm surge accumulates and overflows onto the banks and adjacent floodplains. Floodplains are considered lowlands, adjacent to rivers and oceans that are subject to recurring floods. Adverse impacts may include structural damages, temporary backwater effects in sewers and drainage systems, and unsanitary conditions by deposition of materials during recession.

There are generally considered to be two types of flooding, Coastal and Riverine. Since Appling County does not border an ocean coast it is only susceptible to riverine flooding. Riverine flooding occurs from inland water bodies such as streams and rivers. Riverine flooding is often classified based on rate of onset, and is typically slow to rise, overflow, and recede; which often allows an adequate amount of time to evacuate the area. The likelihood of a stream or river flooding is dependent upon several factors including topography, ground saturation, the intensity and duration of rainfall, soil type, drainage, erosion and vegetation. In recent years, Floods, and the damage they cause have remained a threat to areas of Appling County.

B. Profile Flooding Events

Location

The majority of flooding that occurs within the county is localized and largely caused by periods of prolonged rainfall. Flooding has occurred in different locations throughout Appling County. In addition to the Altamaha River which flows along the northern border of the county, there are many creeks that flow throughout the county that have the potential to flood. All of the county's three municipalities are in areas that have the potential for flooding. Additionally, large parts of the unincorporated portion of the county are also at risk for flooding. Many of these areas contain various agricultural, industrial and commercial resources that can suffer water damage. The Maps of these areas can be found in Appendix A, IV.

There are several flood zones throughout Appling County with the largest area along the Altamaha River running along the entire northern border of the county. The Big Satilla Creek, starting in the southern portion of Jeff Davis County, travels on the south border of Appling County. North of Georgia Highway 15 (Blackshear Highway), Sweetwater Creek empties into the Big Satilla Creek. Sweetwater Creek begins in the vicinity of the City of Baxley and is fed by smaller creeks throughout the southern half of Appling County. Ten Mile Creek begins northeast

of the City of Graham and continues to run throughout the northern portion of Appling County until it empties into the Altamaha River north of the Highway 121/169 Altamaha Bridge. Important tributaries are Little Satilla Creek, Bishop Creek, Colemans Creek, and Five Mile Creek. The entire flood zone area around the Altamaha River has a GMIS System hazard score of 3.

Portions of Baxley, Graham, and Surrency are located in zone one due to their proximity to major creeks or low lying areas, however a majority of the city limits report a hazard score of zero. There is a large portion of Appling County north of Surrency that is a hazard score of one. The other parts of the county with hazard score of one are along major creeks throughout various parts the county. The remainder of the county is located in zone zero.

Extent

In order to provide a measurement of extent for flood events in Appling County HAZUS Software was used to create a flood depth grid for the county. A flood depth grid allows us to estimate the height that flood waters would reach. The flood depth grid was generated based on a 100 year flood scenario. The depths ranged from a Low of approximately 0 ft. to a High of 63.05 ft. The deepest areas were found in the unincorporated portions of the county, especially in the Altamaha River where there is no development. Within the City of Baxley, the highest projected level is 6.3 feet and is located in an area of the city with very few structures. Throughout the rest of the city, depth varies from less than a foot to approximately four feet. Although a flood of this height could cause some structure and property damage, the majority of the city would most likely be unaffected. The cities of Graham and Surrency are projected to have minimal flooding, 0-5 feet, isolated to the southern portion of Graham and northern portion of Surrency (To view the Flood Depth Grid, please see Appendix A, IV).

Historical Occurrence

The occurrence of floods in Appling County in the past years has posed a moderate threat to the communities. Flooding areas in Appling County can be seen in Appendix A. As pointed out in the National Climatic Data Center (NCDC) statistics (Appendix A, IV) in the past twenty years, floods were recorded four times. Because the NCDC has recently been keeping up with the number of flood occurrences at the local level, the true number of floods that have occurred in the past fifty years is unknown.

Appling County has four recorded instances of flooding, all of which occurred between 1998 and 2003. The total amount of property damage for these events is \$1.7 million. There were no injuries or deaths recorded. Since the implementation of the original hazard mitigation plan there have been no recorded floods; historic recurrence interval ratios report a likely occurrence every 13.00 years as reported in the Hazard Frequency Table (Appendix D, I).

One significant flood in Appling County occurred on March 1st, 1998. The NCDC reports that over a two day period parts of Georgia received between 2.5 and 4.5 inches in rain. This rainfall was attributed to an “El Nino” influenced storm system. The area had already received a large

amount of rain prior to this event and therefore the ground was saturated causing large scale flooding over much of south-central Georgia, especially along and near the St Mary's, Altamaha, and Satilla Rivers. More than 200 homes were damaged. The reported damage for Appling County was \$1.5 Million. On March 11th, 1998 a federal disaster was declared for one hundred nineteen counties, including Appling.

Local news sources reported excessive rain beginning April 1st, 2013 and continuing for several months caused the United States Department of Agriculture to declare seventy-nine counties in Georgia as a Primary Natural Disaster Area. The designation on September 25th, 2013, was due to damages and losses caused by the excessive, long periods of rain impacting many farmers and ranchers throughout the seventy-nine county area, including Appling County. The impact of flooding on agriculture could be tremendous considering the 2007 USDA farm census statistic of a total of 494 farms, producing \$75,144,000 in goods in Appling County alone. A disruption or damage to these products would have a severe impact.

Probability

As stated above, in the last fifty years there have been four recorded occurrences of Flooding. The current chance per year that a flood can occur is .08, as noted in the Hazard Frequency Table (Appendix D, I). Additionally, the annual frequency for the last ten and twenty years are .40 and .20, respectively. Finally, keeping in mind that the older the data the more incomplete it is, we can see that the annual frequency for the last fifty years is .08, with a historical recurrence interval of 13.00 years. Based on the historical occurrence data it is "Likely" to assume that a flood will occur within the next ten years.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	"Highly Likely"
10-25	"Likely"
25-50	"Unlikely"
50 or greater	"Highly Unlikely"

C. Inventory Assets and Potential Losses

Through the use of updated FEMA flood maps and housing formation obtained from the Appling County 911 office, the determination was made that 3.9% (644) of all structures in the county are within flood zones, as noted on Worksheet 3A (Appendix D, I). Of the structures in located in the flood zones; there are 487 residential (4.4%), 43 commercial (3.3%), 95 Agricultural (2.7%), 14 Government (7.5%) and 5 Utility (29.4%). There are no known industrial, religious/non-profit or education facilities within flood zones. In terms of the number of people residing or working within the flood zones the estimated numbers are as follows; 802 residential (4.4%), 117 commercial (3.3%), 11 Agricultural (2.7%), 112 Government (7.5%) and 45 Utility (29.4%). Please view on

Worksheet 3A (Appendix D, I). Of the county's one-hundred fifty-two critical facilities, seven are exposed within designated flood zones and are at risk.

The total value of all structures within flood zones is estimated to be \$123,926,762 or 20.6% of the total value of structures in the county. The value of structure within flood zones by category are; \$4,537,434 residential, \$821,118 commercial, \$557,498 Agricultural, \$1,580,671 Government and \$123,926,762 Utility. Appling County has no reported repetitive loss properties according to NFIP guidelines.

Please see Appendix A, IV to examine this map. To address specific critical facilities and infrastructure, each facility was examined on an individual basis, entered into the GEMA database, and located on maps, both which are in Appendix A, IV.

D. Development Trends

There are several community areas of potential development including various types of residential, commercial, industrial, public/institutional, transportation/communications/utilities, park/recreation/conservation, agriculture, and forestry applications. Appling County and Baxley participate in the National Flood Insurance Program. The cities of Graham and Surrency do not participate in the program. None of the municipalities have flood related ordinances in addition to the NFIP regulations. The development and enforcement of ordinances related to flooding is an area that the plan update committee focused heavily upon in the creation of the Goals, Objectives and Actions section.

As far as development in areas potentially affected by a flood, through a review of the Appling County Joint Comprehensive Plan there are several locations of potential future growth that have been identified. A fair quantity of land is available for continued commercial/retail development in and adjacent to Baxley, particularly along the U.S. 341 West Corridor. The ongoing revitalization of downtown Baxley also offers possibilities of growth. Several new merchants have opened establishments in the downtown area within the last 4-5 years, helping to attract more shoppers to the area. Also, the attraction of tourists and visitors would spur existing business.

The City of Baxley has basic zoning ordinances in place. The unincorporated portions of the county and the cities of Surrency and Graham have no basic zoning of land use regulations. This could influence the type and extent of all forms of development in those areas. This also limits the ability to protect the environmental resources in those areas, which could make them more vulnerable to damage from a flood. However, since flooding is a spatial hazard future land use maps can address the threat of flooding in areas and help reduce the exposure of new development. Both the county and the municipalities will utilize the maps in this plan to locate future structures out of localized flood prone areas if possible.

E. Multijurisdictional Concerns

Due to the spatial nature of floods there are some significant differences between jurisdictions in the county. In the incorporated areas of Appling County, the threat of flooding is present within

the city limits of the cities of Baxley, Graham, and Surrency in low-lying areas. As indicated earlier there are portions of each municipality that have a GMIS Hazard score of one or higher. All of the cities have a flood zone within their city limits. This poses a significant threat to residents and property in the event of flooding. To view this map please see Appendix A, IV. Additionally, in the incorporated areas there is a greater chance that a flood could cause damage to residential, commercial and infrastructure.

Outside of the municipalities there are additional flood zones along the rivers and major creeks. Also, outside of the municipalities there tends to be less drainage, more dirt roads and the presence of other conditions that may increase flooding. However, there is little development in the unincorporated areas and few critical facilities. Damage in the unincorporated portions would most likely be agricultural or infrastructure, such as road and bridges. There is less likely to be a significant threat to lives in these areas than there would be if a flood occurred in one of the municipalities. However, the danger of flooding in the unincorporated areas should still be examined and measures taken to lessen the impact of an event.

The current Flood Insurance Rate Map (FIRM) for the county and its municipalities, was adopted on December 17th, 2010. (Please refer to Chapter 3 for additional information) Additionally, a Flood Insurance Study (FIS) of the incorporated and unincorporated areas of the county was conducted by FEMA in 2010. Portions of study were consulted for the purposes of this plan. (Please see Appendix C)

F. Hazard Summary

Through examination of the updated flood related data and maps the committee has determined that the occurrence of floods remain a threat to the county and its' municipalities. Though the potential for property damage is greatest within the incorporated areas of the county, these areas are not as prone to floods as often the unincorporated portions of the county. The committee reviewed previous flood mitigation action steps proposed in the approved 2008 plan. Addressing these issues will be an ongoing task for both county and city officials. Through a concerted effort between the municipalities, county and the Pre-Disaster Mitigation Planning Committee, measures will be taken, when feasible, to ensure that future development is conducted in areas where the threat of flooding is minimal. Through future land use regulations and the implementation of the actions included in this plan overall flood damage should continue to decrease.

IX. Natural Hazard Event- Tropical Storms

A. Hazard Identification

Appling County has experienced a threat from a number of natural non-spatial occurrences including tropical storms. By definition, a tropical storm is a tropical cyclone in which the maximum one-minute sustained surface wind ranges from 39 to 73 mph (34 to 63 kts) inclusive. Tropical storms and hurricanes are powerful systems with the ability to travel far from the initial

strike zone. Once inland, they can continue to bring powerful winds and heavy rains. Appling County is located in Wind Zone III, which is the 200 mph wind zone. Currently, Appling County and the cities of Baxley, Graham, and Surrency do not have any building codes that pertain to wind speeds.

B. Profile Tropical Storm Events

Location

Since Tropical Storms are non-spatial entities, they have the potential to occur anywhere within Appling County. Therefore all parts of the county could be potentially subject to Tropical Storms and there is no specific area that would necessarily be more likely to have one.

Extent

There is no measurement of extent specific to a Tropical Storm. The National Weather Service measures the extent of a hurricane using the Saffir-Simpson Hurricane Wind Scale. The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale also estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. However, a Tropical Storm falls within its' own category and is directly below a Category 1 Hurricane in terms of sustained winds and damage capability.

Saffir-Simpson Hurricane Wind Scale		
Category	Sustained Winds	Types of Damage Due to Hurricane Winds
Tropical Storm	39–73 mph, 63–118 km/h	<ul style="list-style-type: none"> •Wind Damage - high winds, flying debris, etc. •Water Damage - heavy rain, storm surges, large waves and swells, mud slides
1	74-95 mph 64-82 kt 119-153 km/h	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 kt 154-177 km/h	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.

Saffir-Simpson Hurricane Wind Scale		
Category	Sustained Winds	Types of Damage Due to Hurricane Winds
3 (major)	111-129 mph 96-112 kt 178-208 km/h	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 kt 209-251 km/h	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

History

The threat of tropical storms in Appling County is minimal. According to NCDC data over the past fifty-two years, there has been one occurrence in Appling County, as noted in the Hazard Frequency Table (Appendix D, II). The impact of these events occurring has been minimal in Appling County over the past fifty years. The Tropical Storm designated event occurred on June 2nd, 2007. The event resulted in zero dollars in reported property damage. Additionally, there have been no injuries or deaths as a result of tropical storms.

Probability

Based upon the frequency of historical occurrences obtained from the National Climatic Data Center the probability that a tropical storm would occur in Appling County is extremely low. The current chance per year that a Tropical Storm can occur is .17, as noted in the Hazard Frequency Table (Appendix D, I). Additionally, the annual frequency for the last ten and twenty years are .1 and .05, respectively. Finally, keeping in mind that the older the data the more incomplete it is,

we can see that the annual frequency for the last fifty years is .02, with a historical recurrence interval of twenty five years. Based on these figures the decision was made to classify the likelihood as “Unlikely” that an occurrence will occur in the near future. However, due to the fact that occurrence reporting is relatively recent, it is possible that there have been other tropical storms in the last fifty years.

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	“Highly Likely”
10-25	“Likely”
25-50	“Unlikely”
50 or greater	“Highly Unlikely”

C. Inventory Assets and Potential Losses

The total percentage of the number of structures that are exposed to the non-spatial threat of Tropical Storms in Appling County is 100% as noted on Worksheet 3A (Appendix D, III). In Appling County, there are 11,024 residential structures, 1,308 commercial structures, 138 total industrial facilities in Appling County, 3,497 agricultural structures, 124 religious/non-profit structures; 186 government facilities, 32 educational facilities, and 17 utility structures. All of these structures are equally exposed to a Tropical Storm. Please see Appendix A, IV to examine the county. All of the county’s 152 identified critical facilities on the GEMA Wind Hazard Report, 45 received a hazard score of three, 107 received a hazard score of two. Additionally all of the county’s critical facilities are exposed to the threat of a Tropical Storm.

The total built structures of Appling County have an estimated replacement value of \$601,626,940. The total value of all residential structures in Appling County is \$103,123,518. The value of commercial structures in Appling County is \$24,882,392. Industrial facilities in Appling County have a value of \$2,782,882. The value of agricultural structures in Appling County is \$20,648,082. Religious/non-profit structures in Appling County are valued at \$11,003,890. Government facilities in Appling County are valued at \$21,075,625. The educational facilities in Appling County are valued at \$22,000,000. Finally, the value of utility structures in Appling County is \$396,020,551. At this time, there are no known future buildings, infrastructure or critical facilities to be located in the county requiring special mitigation strategies.

D. Development Trends

The county currently has no land use or development trends specifically related to Tropical Storms. The largest concerns during a tropical storm event for Appling County would result from the large amount of rainfall that could cause flooding in the incorporated and unincorporated parts of the county. . Increased enforcement of building codes related to flooding and the continued membership of the National Flood Insurance Program by Appling County and Baxley

will help to lessen this impact. The cities of Graham and Surrency are not members of the National Flood Insurance Program.

E. Multi-Jurisdictional Concerns

Due to the non-spatial nature of a Tropical Storm, any part of Appling County could potentially be affected by its' occurrence. However, in regards to the possible flooding caused by the heavy rains from a Tropical Storm, the most structural damage is likely to occur within the city limits of Baxley, Surrency, or Graham. The unincorporated portions of the county that fall within flood zones are largely undeveloped and in the northern portion of the county along the Altamaha River, therefore there is little possibility of damage occurring.

F. Hazard Summary

Although a Tropical Storm has only been recorded once, the potential damage caused by one storm event could significantly impact the entire county. The possible wind damage and flooding from such a storm poses a threat to the county's residents and their property. Therefore, the update committee found it essential to include this hazard and develop mitigation actions to help lessen the impact.

X. Natural Hazard Event- Hurricanes

A. Hazard Identification

A hurricane is a category of tropical storm of wind speeds greater than 74 or more miles per hour. Hurricanes develop over warm waters and are caused by the atmospheric instability created by the collision of warm air with cooler air originating in the tropical regions of the Atlantic Ocean or Caribbean Sea. They then travel north, northwest, or northeast from its point of origin, and they usually involve heavy rains. Hurricanes are characterized by a large spiral of wind around a calmer center called the eye of the storm, which has the potential to be 20-30 miles wide. When a hurricane hits land, it may cause devastating rains, winds, and flooding. The hurricane season for the Atlantic coast lasts from June to November, but could occur outside of periods. Though each may not be considered significant, on average, five hurricanes strike the United States every year. Because hurricanes are large moving storm systems, they can affect entire states or entire coastlines.

B. Profile Hurricane Events

Location

Since Hurricanes are non-spatial entities they have the potential to occur anywhere within Appling County. Therefore all parts of the county could be potentially subject to Hurricanes and there is no specific area that would necessarily be more likely to have one.

Extent

The extent of a hurricane can range from very mild damage to extreme devastation. The National Weather Service measures the extent of a hurricane using the Saffir-Simpson Hurricane Wind Scale. The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale also estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. However, Category 1 and 2 storms still have the potential to cause a large amount of damage to property and infrastructure.

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

Saffir-Simpson Hurricane Wind Scale		
Category	Sustained Winds	Types of Damage Due to Hurricane Winds
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

History

The threat of hurricanes in Appling County is minimal. According to NCDC data over the past fifty-two years, there have been zero occurrences of hurricanes in Appling County, as noted in the Hazard Frequency Table (Appendix D, II). The impact of these events occurring has been minimal in Appling County over the past fifty years, however in 1894, 1895, 1898, and 1947 hurricanes directly impacted the Georgia Coast or Florida Gulf Coast and tracked inland, remaining at hurricane strength well into Georgia (See Map, Appendix A, X). The past recorded events have resulted in zero dollars in property damage. No lives have been lost due to hurricanes.

Appling County has experienced indirect effects resulting from Hurricanes. This has included receiving large amounts of rain and wind coming from hurricanes along the coasts. Also, Appling County is on a route for evacuees from coastal Georgia to come to in the event of a hurricane. US Highway 341, running east to west, and US Highway 1, running north to south, are utilized as major evacuation routes for the Atlantic Coast of Georgia. For Hurricane Floyd in 1999, U.S. 1 was considered a major corridor for evacuees attempting to escape the hurricane's path. Evacuees were traveling from as far south as Daytona Beach Florida to locations above Macon and Dublin Georgia. This large amount of evacuees, many seeking shelter in the counties along I-16 and above, placed a great deal of strain upon communities that were not prepared to accommodate them. In order to be better prepared for a similar situation in the future the county has included goals and objectives that they feel will help address these issues.

Probability

Based upon the frequency of historical occurrences obtained from the National Climatic Data Center the probability that a hurricane would occur in Appling County is extremely low. There has never been a hurricane in Appling County, therefore it is "Highly Unlikely" that a Hurricane will occur in the future.

Occurrence Probability in Years	Likelihood of Future Occurrence
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1-10	“Highly Likely”
10-25	“Likely”
25-50	“Unlikely”
50 or greater	“Highly Unlikely”

C. Inventory Assets and Potential Losses

The total percentage of the number of structures that are exposed to the non-spatial threat of Hurricanes in Appling County is 100% as noted on Worksheet 3A (Appendix D, III). In Appling County, there are 11,024 residential structures, 1,308 commercial structures, 138 total industrial facilities in Appling County, 3,497 agricultural structures, 124 religious/non-profit structures; 186 government facilities, 32 educational facilities, and 17 utility structures. All of these structures are equally exposed to a Hurricane. Please see Appendix A, IV to examine the county. Of the county’s 152 identified critical facilities on the GEMA Wind Hazard Report, 45 received a hazard score of three, 107 received a hazard score of two. Additionally all of the county’s critical facilities are exposed to the threat of a Hurricane.

The total built structures of Appling County have an estimated replacement value of \$601,626,940. The total value of all residential structures in Appling County is \$103,123,518. The value of commercial structures in Appling County is \$24,882,392. Industrial facilities in Appling County have a value of \$2,782,882. The value of agricultural structures in Appling County is \$20,648,082. Religious/non-profit structures in Appling County are valued at \$11,003,890. Government facilities in Appling County are valued at \$21,075,625. The educational facilities in Appling County are valued at \$22,000,000. Finally, the value of utility structures in Appling County is \$396,020,551. At this time, there are no known future buildings, infrastructure or critical facilities to be located in the county requiring special mitigation strategies.

D. Development Trends

The county currently has no land use or development trends specifically related to Hurricanes. The largest concerns during a hurricane event for Appling County would result from the large amount of rainfall that could cause flooding in the incorporated and unincorporated parts of the county. Increased enforcement of building codes related to flooding and the continued membership of the National Flood Insurance Program by Appling County and Baxley will help to lessen this impact. The cities of Graham and Surrency are not members of the National Flood Insurance Program.

E. Multi-Jurisdictional Concerns

Due to the non-spatial nature of a hurricane, any part of Appling County could potentially be affected by its’ occurrence. However, in regards to the possible flooding caused by the heavy rains from a hurricane, the most structural damage is likely to occur within the city limits of

Baxley, Graham, or Surrency. The unincorporated portions of the county that fall within flood zones are largely undeveloped, therefore there is little possibility of damage occurring.

F. Hazard Summary

As pointed out in the NCDC statistics, in the past fifty years no hurricanes have been recorded in Appling County. This is largely due to the county's inland location and distance from the coast. The past recorded events have resulted in zero dollars in property damage. Additionally, no lives have been lost due to hurricanes.

However, the hazard mitigation plan update committee made the decision to include hurricanes in their list of hazards because of the severe direct and indirect effects that an occurrence could have. This includes localized flooding, fallen trees, utility damage, and destruction of property. Additionally, the occurrence of a hurricane in a different part of the state has the potential to affect the county, due the presence of a major evacuation route along US-1 and US-341. The measures put into place by this plan are intended to decrease or eliminate these negative effects.

All areas of the county are susceptible to non-spatial threats. In the incorporated and unincorporated areas of Appling County (including Baxley, Graham, and Surrency), the threat of natural non-spatial occurrences including hurricanes is equally applicable. Therefore, any mitigation steps taken related to hurricanes should be applied to the entire county and each municipality.

XI. Dam Failure

A. Hazard Identification

By definition, a dam is a barrier used to prevent the flow of a liquid; esp., a bank of earth, or wall of any kind, as of masonry or wood, built across a water source, to confine and keep back flowing water. In the event of failure, a dam could release tremendous amounts of water, engulfing and destroying structures that lie in the flow zone area.

B. Hazard Profile

Location

The US Army Corps of Engineers reports that there are thirteen total dams in Appling County. (A list of these can be found in (Appendix XI) Four dams are owned by local government entities, two are owned by the State of Georgia, and seven are owned by private landowners for either recreation, irrigation or flood control measures.

One of these, the Tara Lake/Dunns Lake Dam, is located 3.5 miles north of Baxley near a residential area and is the only dam that is classified as posing a threat in the event of a dam failure. The dam measures 26.3 feet in height. The area that could be affected by a potential dam failure includes; behind the road fills for Dunns Lake Road and the adjacent road, 10 Mile Road. Because

dam failure is a spatial threat, potential losses are restricted to the houses located on Red Fox Road, Caney Creek Road, and 10 Mile Road. The Tara Lake Dam, previously classified by FEMA as a High Risk Dam, remains a class I dam according to the Georgia Safe Dams Database.

The remaining dams are located in the unincorporated portions of the county and have not been classified as having a hazard potential of failure.

Extent

To measure the possible extent of a dam failure the FEMA Hazard Potential Classification System for Dams is used. This system assigns a risk level to each dam based on the probable loss of human life and the potential for economic losses, environmental damage, and/or disruption to lifelines caused by failure of mis-operation of the dam or its appurtenances. The system takes into account the potential effects of a failure or mis-operation during both normal and flood flow conditions.

There are three possible levels of hazard classification; Low, Significant and High.

1. LOW HAZARD POTENTIAL

Dams assigned the low hazard potential classification are those where failure or improper operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

2. SIGNIFICANT HAZARD POTENTIAL

Dams assigned the significant hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

3. HIGH HAZARD POTENTIAL

Dams assigned the high hazard potential classification are those where failure or mis-operation will probably cause loss of human life.

Hazard Potential Classification	Loss of Human Life	Economic, Environmental, Lifeline
Low	None Expected	Low and generally limited to owner
Significant	None Expected	Yes

High	Probable, One or More Expected	Yes (but not necessary for this classification
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History

There have been no recorded instances of Dam Failure in Appling County. However, as earlier mentioned the Tara/Dunns Lake Dam is classified as a Category One or High Risk.

Probability

Due to the lack of dams classified as having the potential to fail and there being no past recorded occurrences, the likelihood of such an occurrence is low. However, it remains a possibility due to the presence of the Tara Lake Dam, which is classified as having High hazard potential, therefore the committee felt it necessary to consider the future occurrence as “Unlikely”, instead of “Highly Unlikely.”

Occurrence Probability in Years	Likelihood of Future Occurrence
1-10	“Highly Likely”
10-25	“Likely”
25-50	“Unlikely”
50 or greater	“Highly Unlikely”

C. Inventory Assets and Potential Losses

Because dam failure is a spatial threat, potential losses are restricted to the areas surrounding the dams that have the potential to fail. The only dam currently identified as a potential hazard is the Tara Lake Dam, which is located near a residential area 3.5 miles northeast of Baxley. The area that could be affected by a potential dam failure includes; behind the road fills for Dunns Lake Road and the adjacent road, 10 Mile Road. Because dam failure is a spatial threat, potential losses are restricted to the houses located on Red Fox Road, Caney Creek Road, and 10 Mile Road. Of the 11,024 residential structures located within Appling County, only 14 or .127% are located in the hazard area. With regards to dam failure, there are no threats to any commercial, industrial, agricultural, religious/non-profit, government, educational, or utility structures. Only 0.086% of the total 16,320 structures within the county are susceptible to damage due to the potential failure of the Tara Lake Dam. There are no critical facilities in the hazard area. All structure information came from the Appling County Board of Assessors.

As stated above, there are 14 total structures within the hazard area associated with the Tara Lake Dam. In the event of a failure at this dam these 14 structures, which are all private residences, would be at risk for damage. The total estimated value of these structures is \$976,827. The

estimates were derived using information from the Appling County Tax Assessor and entered into GEMA Worksheet 3A (Appendix III).

D. Development Trends

There are no specific trends in the county comprehensive plan concerning dam failure. The land-use and development ordinances of Appling County and its municipalities do currently not address dam failure. There are no known existing land use or development trends that would be affected by dam failure. However, future property owners and developers will be notified of their proximity to the dam and of the hazard potential associated with a failure.

E Multi-Jurisdictional Concerns

The only Dam currently reported as a Category I or High Hazard Dam in Appling County is the Tara Lake/Dunn's Lake Dam. Since this dam is located outside of any city, there is a lower risk of damage to structures and less of a threat to residents within the city limits than in the unincorporated portions of the county. Locations of Dams reported by the Army Corps of Engineers and the Georgia Safe Dam Database can be found in Appendix A, XI.

F. Hazard Summary

Generally, due to the lack of development and flat topography in the areas surrounding the majority of the dams in Appling County, the only dam identified as having hazard potential is the Tara Lake Dam. Although this Dam is located in the unincorporated area, it has a potential for damage. However, the overall potential for a Dam Failure to occur in Appling County is relatively low.

Chapter 3 - Local Natural Hazard, Risk and Vulnerability (HRV).

Chapter 3 Section	Updates to Section
I. Introduction to Mitigation Strategy	<ul style="list-style-type: none"> • Priorities Altered, Capability Assessment updated.
II. Thunderstorms/Windstorms	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
III. Tornado	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
IV. Wildfire	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
V. Excessive Heat	<ul style="list-style-type: none"> • New Hazard
VI. Drought	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
VII. Winter Storm	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
VIII. Hailstorm	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
IX. Flood	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
X. Tropical Storm	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
XI. Hurricane	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks, and actions steps to meet recommendations of committee
XII. Dam Failure	<ul style="list-style-type: none"> • Goal text revised, content unchanged from previous plan. Revision of objectives, tasks,

	and actions steps to meet recommendations of committee
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I. Introduction to Mitigation Strategy

A. Priority Changes

Goals and objective statements have been updated from the 2008 Plan to reflect the progress that Appling County has made, as well as to reflect any new developments related to mitigation actions. The county has taken steps to implement many of the previously identified mitigation strategies, achieving successes in several of the objective areas. The update committee believed that the majority of the actions steps remain relevant from the previously approved plan and remain the same. Financial difficulties experienced by the county, similar to those felt throughout the entire nation, limited Appling County's ability to achieve more of their goals and objectives. Overall there have not been any major developments that have altered the prioritization of objectives or goals. However, in reviewing each of the action steps the committee made decisions to change the assigned priority level of certain actions based upon a variety of factors. Changes in priority levels have been noted next to each action. A more detailed description of the process used to determine prioritization can be found in Section C, IV.

B. Capability Assessment

The Appling County Emergency Management Agency (EMA) Director will coordinate with the appropriate city agency personnel in order to execute any and all multi-jurisdictional steps. The EMA Director will function as the coordinator of the Hazard Mitigation action plan implementation efforts. The director will work with the appropriate county and municipality officials, boards and committees on the various aspects of the plan.

Appling County and its municipalities currently utilizes a mixture of comprehensive land use planning and building codes to guide and control development. Current land use regulations and building codes will provide the basis for additions and revisions that are related to hazard mitigation. Baxley has basic zoning ordinances in place. The unincorporated portions of the county and the Cities of Surrency and Graham have no basic zoning or land use regulations. Additionally, only the City of Baxley has a designated building inspector. In the future the county and municipalities will explore the possibility of adding building codes and a building inspector.

The Baxley municipal fire department and Appling County volunteer fire departments provide an excellent resource for achieving many of the outline hazard mitigation actions. Coordination between the departments will provide a unified approach to mitigation initiatives. Members of all departments are continuously obtaining additional training and certifications in order to increase the overall safety of the county. These departments are also regularly applying for and receiving grants to increase their capabilities and effectiveness.

County officials regularly coordinate and cooperate with the efforts of the local offices of both the Georgia Forestry Commission and the UGA Cooperative Extension Agency. Their input was

valuable to the creation of this section of the plan. Both of these organizations provide excellent partners for implementing many of the Hazard Mitigation Actions related to drought and wildfire.

The Appling County Hazard Mitigation Plan will be presented to the committees and persons responsible for updating Comprehensive Plans and Capitol Improvement plans, for their use in incorporating the Hazard Mitigation goals and objectives. A copy will also be given to the Appling County Community Wildfire Protection Plan Committee, who works with the Georgia Forestry Commission to update the Community Wildfire Protection Plan. This provides an additional resource for Wildfire mitigation actions. Resources and personnel that are already in place will be utilized for these efforts.

Other officials and organizations to be involved in the implementation of the mitigation actions include; Baxley police department, municipal fire departments, municipal public works departments, county volunteer fire departments, the Appling County Sheriff's Department, Appling County Road Department, Appling County Schools, Appling County Health Department, City Councils, and the Appling County Commission.

C. Community Mitigation Goals

In order to develop the mitigation goals the Update Committee analyzed the updated risk assessment data, and reviewed the implementation status of the 2008 goals. From this they were able to determine the relevancy and importance of each goal. After open discussion and deliberation a decision was made to maintain the goals included in the original plan. Additionally, no new goals were added.

The goals are listed below. The order in which they placed reflect the overall perceived threat that each hazard poses to Appling County, as decided by the update committee.

Goal 1: Reduce damage caused by severe storms and high winds that result from windstorms in Appling County.

Goal 2: Reduce damage caused by severe storms and high winds in Appling County.

Goal 3: Prevent damage caused by wildfire in Appling County.

Goal 4: Minimize the impact of Extreme Heat on the citizens of Appling County.

Goal 5: Reduce the economic impact of drought in Appling County.

Goal 6: Reduce damage resulting from ice, sleet, and snow during severe winter storms in Appling County.

Goal 7: Reduce damage caused by ice during hailstorms in Appling County.

Goal 8: Reduce flood damage in Appling County.

Goal 9: Reduce damage caused by the high winds that occur during tropical storms in Appling County.

Goal 10: Reduce damage caused by dams that result from breakage in Appling County.

Goal 11: Reduce damage caused by the high winds that occur during hurricanes in Appling County. Objective

D. Identification & Analysis of Range of Mitigation Options

1. Structural and Non-Structural Mitigation

The committee identified structural and non-structural mitigation measures to ensure that the community addresses issues related to this hazard. A variety of mitigation options were discussed, with the committee deciding upon which opens best fit the community and its' goals. Structural goals include retrofitting critical facilities, adopting/enforcing building codes, notifying new builders if they are in a floodplain, adding additional storm drainage, repairing existing irrigation ponds and development of community safe shelter. The non-structural measures include acquiring additional firefighting equipment, joining the National Flood Insurance Program, increasing citizen preparedness, and regular training of emergency response members.

2. Existing Policies, Regulations, Ordinances and Land Use

The land use policies, regulations and building ordinances were reviewed. The committee made the recommendation to continue seeking the inclusion of more thorough policies to address appropriate hazards. Existing FEMA Firm maps have been recently updated. Appling County and Baxley participate in the National Flood Insurance Program. The cities of Graham and Surrency do not participate in the program but will consider joining in the future. None of the municipalities have flood related ordinances in addition to the NFIP regulations. Going forward, the county and municipalities will continue to adopt and implement policies, regulations and ordinances related to hazard mitigation.

3. Community values, historic & special considerations

The STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) was used to evaluate the mitigation actions effects upon community values, historic and special considerations. The mitigation strategies pose no known threat to historical properties or any facility that requires special consideration. Community values are reflected in the proposed measures, as reflected in concerns expressed in the Appling County Joint Comprehensive Plan. In order to help ensure that the values and priorities of the county's citizens were included the planning committee sought the input of representatives from a variety of groups and organizations. Additionally, relevant portions of the Appling County comprehensive plan were consulted. The strategies will preserve the rural/agrarian culture and community

values of Appling County, protecting the hometown feel of each jurisdiction while increasing each municipality's preparedness for this type of event.

4. Prioritization of Actions

To evaluate action step priorities, committee members used the STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) criteria provided by FEMA as a guide. Each mitigation strategy step was evaluated using STAPLEE criteria to identify those steps most relevant to Appling County. (Appendix D III) Based on these considerations, steps were ranked as high priority, medium priority, or low priority. Past occurrences of disasters, other planning documents and local expertise aided committee members in assigning priorities. The priority level of each step is listed under the appropriate section for that strategy.

II. Thunderstorms/Windstorms

I. Goal 1: Reduce damage caused by severe storms and high winds that result from windstorms in Appling County.

Objective 1.1: Protect life, health and property of residents from high winds from windstorms.

- **Action 1.1** Seek funding to retrofit buildings to reinforce windows, roofs and doors – H

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	1-2 Years
Cost	\$50,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA/FEMA

- **Action 1.2** Seek funding to purchase equipment to keep access and critical roads open (i.e., debris removal equipment) – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$20,000.00 (Materials)
Funding Source(s)	General Fund/GEMA

- **Action 1.3** Increase public awareness of emergency topics by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools (i.e., NOAA Weather Radio Systems, Local Emergency Shelters, individual safe rooms, National Weather Service Operations, Local Emergency Plans, and the Local Emergency Management Agency, etc.) – M

Responsible Org.(s)	Appling County (Co. Adm.)
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Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 1.4** Seek funding to purchase generators (i.e., schools, backup for the City of Baxley Wastewater Treatment Plant and Sewer Lift Stations) – **L**

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA/FEMA

II. Future Building and Infrastructure

The update committee discussed development trends and the impact that thunderstorm/windstorm occurrence could have upon future structures. The mitigation steps included above are intended to apply to both new and existing structures. All new buildings and infrastructure will be required to comply, where applicable. New buildings may be impacted through the public awareness initiative to select roofing material with a high wind resistance. This could improve the quality of future buildings.

III. Existing Buildings and Infrastructure

The mitigation steps included above are intended to apply to both new and existing structures. Existing buildings and infrastructure will be included in recommendations to retrofit to withstand wind and storm conditions. This could improve the quality of existing buildings. Additionally, retrofitting existing government buildings will make them more resistant to high winds.

IV. Special Multi-Jurisdictional Strategy and Considerations

Thunderstorms have the potential to affect the entire county. Due to the fact that this is a non-spatial hazard, the threat is present in both the incorporated and un-incorporated parts of Appling County. The occurrence of this event is unpredictable; therefore, all considerations and strategies apply equally to each jurisdiction.

V. Completed and deleted action steps from original plan.

Completed: None

Deleted: None

VI. Unchanged action steps:

All action steps for mitigation of thunderstorm/wind storm effects remain unchanged from the previous plan. The Appling County Hazard Mitigation Update Committee reviewed the STAPLEE criteria for this hazard and feels that these action steps are pertinent for preparing the community for possible disaster situations. Public awareness is important to all hazard mitigation actions and is essential to lessening the impact of thunderstorms. Many of these action steps are viewed as an ongoing process and will remain action steps well into the future.

VII. New Action Step:

- None

III. Tornadoes

I. Goal 2: Reduce damage caused by severe storms and high winds in Appling County.

Objective 2.1: Protect life, health and property of residents from force of tornadoes.

- **Action 2.1** Seek funding for the construction of a Community Safe Shelter that could also jointly or separately serve as a local emergency operations center – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$100,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 2.2** Seek funding to expand current warning systems – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$50,000.00 (Staff Time/System Materials)
Funding Source(s)	General Fund/GEMA

- **Action 2.3** Seek funding to increase public awareness of emergency topics by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools (i.e., Emergency Public Audible Warning System, NOAA Weather Radio Systems, Local Emergency Shelters, individual safe rooms, National Weather Service Operations, Local Emergency Plans, and the Local Emergency Management Agency, etc.) – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)

Funding Source(s)	General Fund/GEMA
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- **Action 2.4** Seek funding to retrofit public buildings to reinforce windows, roofs and doors – H

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	3-4 Years
Cost	\$50,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 2.5** Continue to update all Emergency Response Plans – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	5 Years
Cost	\$2,000.00 (Staff Time)
Funding Source(s)	General Fund

- **Action 2.6** Encourage citizens to develop and have an emergency plan and survival kit – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 2.7** Seek funding to enhance E-911 System capabilities and improve on the ability of locating cellular phones throughout the County utilizing GPS technology (Phase II) – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County (Co. Adm.)
Timeline	3-4 Years
Cost	\$75,000.00 (Staff Time/System Materials)
Funding Source(s)	General Fund/GEMA

- **Action 2.8** Seek funding to purchase equipment to keep access and critical roads open (i.e., debris removal equipment) – H

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$20,000.00 (Materials)
Funding Source(s)	General Fund/GEMA

- **Action 2.9** Seek funding to purchase generators (i.e., schools backup for the City of Baxley Wastewater Treatment Plant) – L

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$50,000.00 (Materials)
Funding Source(s)	General Fund/GEMA

II. Future Building and Infrastructure-

The update committee discussed development trends and the impact that a tornado occurrence could have upon structures. The mitigation steps included above are intended to apply to both new and existing structures. All new buildings and infrastructure will be required to comply to new codes and ordinances, where applicable. New buildings may be impacted through the public awareness initiative to select roofing material that is high wind resistant. This could improve the quality of future buildings.

III. Existing Buildings and Infrastructure

The mitigation steps included above are intended to apply to both new and existing structures. Existing buildings and infrastructure will be subject to any changes in building, fire and safety codes. Existing buildings may be impacted through the public awareness initiative to select roofing material that is high wind resistant. This could improve the quality of existing buildings. Additionally retrofitting existing government buildings will make them more resistant to high winds. The existing building designated as shelters will be maintained and improved upon when needed.

IV. Special Multi-Jurisdictional Strategy and Considerations

All structures and facilities within Appling County could be damaged by a tornado. The update committee stressed the need for cooperation and inter-coordination between the municipalities and County in mitigation and response efforts.

V. Completed and deleted action steps from original plan.

- **Completed: 1. Action 2.10** Seek funding to purchase NOAA weather alert to place in homes- **This action was completed due to the county's recent implementation of the Code Red System, which allows the county to alert residents in specific areas or the entire county.**

- Deleted: NONE

VI. Unchanged action steps:

The Appling County Hazard Mitigation Update Committee reviewed the STAPLEE criteria for this hazard and feels that each action step between and including actions 1.1 to 1.9 remain pertinent for preparing the community for possible disaster situations. Many of the actions are considered ongoing efforts including those related to public awareness, seeking funding and updating Emergency Response Plans.

Through the use of the STAPLEE worksheet and group discussion the decision was made to made to lower the priority level from high to low for Action 2.9.

VII. New Action Steps: NONE

IV. Wildfire

I. Goal 3: Prevent damage caused by wildfire in Appling County.

Objective 3.1: Prevent destruction of forests and structures.

- **Action 3.1** Seek state and federal grants to acquire better fire-fighting equipment – H

Responsible Org.(s)	Appling County (Co. Adm.)/ Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs
Timeline	1-2 Years
Cost	\$600,000.00 (Staff Time/Vehicles, etc.)
Funding Source(s)	General Fund/FEMA/GEMA

- **Action 3.2** Improve wild fire training at the local fire department level – M

Responsible Org.(s)	Appling County (Co. Adm.) Georgia Forestry Commission
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs, City Fire Departments, Georgia Forestry Commission
Timeline	3-4 Years
Cost	\$5,000.00 (Materials)
Funding Source(s)	General Fund/FEMA

- **Action 3.3** Improve public awareness of wildfire techniques such as putting out small fires with garden hose and the importance of fire buffers around the home by publishing articles in the local newspaper,

holding town hall meetings, radio announcements and providing bulletins to local churches and schools – M

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor) Georgia Forestry Commission
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs
Timeline	5 Years
Cost	\$5,000.00 (Materials/ News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/FEMA

- **Action 3.4** Support Georgia Forestry Commission Public Outreach efforts – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs, Forestry Commission
Timeline	3-4 Years
Cost	\$0.00
Funding Source(s)	N/A

- **Action 3.5** Seek funds from EPD in increase public awareness about current disposal method of tires and continue current method of disposal for tires – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs
Timeline	3-4 Years
Cost	\$50,000.00 (Materials)
Funding Source(s)	General Fund/FEMA/EPD

- **Action 3.6** Establish/Enforce building, fire and safety codes throughout Appling County, including municipalities – M

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund

- **Action 3.7** Investigate methods to provide landowners an incentive to prescribe burn timberland thereby minimizing heavy fuel loads – L

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs
Timeline	3-4 Years
Cost	\$10,000.00 (Staff Time)
Funding Source(s)	General Fund/GEMA

Objective 3.2: Reduce threat of wildfire occurrence during periods of drought.

- **Action 3.8** Designate water resources that are available for fire protection (Dry Hydrants) – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs
Timeline	3-4 Years
Cost	\$10,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/FEMA

- **Action 3.9** Seek funding to acquire more fire tankers (2000 to 3000 gallons) and floater pumps for local fire departments – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs
Timeline	1-2 Years
Cost	\$600,000.00 (Staff Time/Vehicles, etc.)
Funding Source(s)	General Fund/FEMA

- **Action 3.10** Increase public awareness of wildfire dangers around the home and community, such as lighted matches, cigarettes, trash, and the process for obtaining burn permits by publishing articles in the local newspaper, holding town hall meetings, radio announcements and providing bulletins to local churches and schools – M

Responsible Org.(s)	Appling County (Co. Adm.) Georgia Forestry Commission
Coordinating Org.(s)	Appling County-Volunteer Fire Depts./Chiefs
Timeline	3-4 Years
Cost	\$5,000.00 (Materials/ News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/FEMA

- **Action 3.11** Seek funding to locate wet and dry hydrants throughout the County – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director & Volunteer Fire Depts./Chiefs
Timeline	3-4 Years
Cost	\$10,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/FEMA

Objective 3.3: Protect life and health of residents from threat of wildfire.

- **Action 3.12** Seek grants to train firefighters on wildfire tactics and equipment – H

Responsible Org.(s)	Appling County (Co. Adm.) Georgia Forestry Commission
Coordinating Org.(s)	Appling County-EMA Director & Volunteer Fire Depts./Chiefs
Timeline	1-2 Years
Cost	\$10,000.00 (Materials)
Funding Source(s)	General Fund/FEMA

- **Action 3.13** Seek state and federal grants to acquire better firefighting equipment – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director & Volunteer Fire Depts./Chiefs
Timeline	1-2 Years
Cost	\$600,000.00 (Staff Time/Vehicles, etc.)
Funding Source(s)	General Fund/FEMA

- **Action 3.14** Increase public awareness of wild land fire interface issues – M

Responsible Org.(s)	Appling County (Co. Adm.) Georgia Forestry Commission
Coordinating Org.(s)	Appling County-EMA Director & Volunteer Fire Depts./Chiefs Georgia Forestry Commission
Timeline	3-4 Years
Cost	\$2,000.00 (News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 3.15** Seek funding for additional storage space for local fire departments – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director & Volunteer Fire Depts./Chiefs
Timeline	1-2 Years
Cost	\$50,000.00 (News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 3.16** Seek funding to train and supply fire personnel with Haz Mat fire equipment at stations throughout Appling County – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director & Volunteer Fire Depts./Chiefs
Timeline	1-2 Years
Cost	\$25,000.00 (News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA/ State Haz-MAT Funds

- **Action 3.17** Seek funding for Emergency responders (Cross Training) – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director & Volunteer Fire Depts./Chiefs
Timeline	3-4 Years
Cost	\$2,000.00 (News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

II. Future Building and Infrastructure

The update committee discussed development trends and the impact that wildfire occurrence could have upon future structures. The mitigation steps included above are intended to apply to

both new and existing structures. All new buildings and infrastructure will be required to comply to new building codes and ordinances, where applicable. The construction of new buildings and development was specifically examined in regards to developing and implementing building, fire and safety codes, as well as addressing growing urban interface issues.

III. Existing Buildings and Infrastructure

The mitigation steps included above are intended to apply to both new and existing structures. Existing buildings and infrastructure will be subject to any changes in building, fire and safety codes.

IV. Special Multi-Jurisdictional Strategy and Considerations

In the incorporated areas of Appling County, the threat of wildfires is low to moderate due to the relatively low fuel load that is present within the Baxley, Surrency, and Graham city limits. However, in the unincorporated areas of Appling County, the threat of wildfires is much higher due to the moderate to high fuel loads that exist in the more rural locations. These fuel load areas significantly increase the threat of wildfires, especially during drought conditions when all of the existing vegetation is drier. While the unincorporated areas are at greater risk, wind direction and fuel loads can quickly push a fire toward Baxley, Surrency, or Graham. As such, the mitigation measures should be applied across each jurisdiction within Appling County. The update committee stressed the need for cooperation and inter-coordination between the Cities and the County, as well as with local Georgia Forestry Commission efforts. Detailed jurisdictional information and mitigation efforts are addressed in the Appling County Community Wildfire Protection Plan, which was consulted by the update committee in the development of the Hazard Mitigation Plan.

V. Completed and deleted action steps from original plan.

Completed: NONE

Deleted: NONE

VI. Unchanged action steps:

All of the action steps, except 3.7 and 3.15, remain unchanged. The Appling County Hazard Mitigation Update Committee reviewed the STAPLEE criteria for this hazard and feels that these action steps remain pertinent for preparing the community for possible disaster situations. Actions 3.7 and 3.15 were lowered from a High priority to a Medium priority. Many of the actions are considered ongoing efforts including those related to public awareness, firefighter training and enforcing related codes. These actions have allowed for progress to be made in mitigating wildfire occurrence and will be continued as necessary.

VII. New Action Step:

NONE

V. Excessive Heat

I. Goal 4: Minimize the impact of Extreme Heat on the citizens of Appling County.

Objective 4.1: Ensure the citizens of Appling County are warned of conditions of extreme heat.

- **Action 4.1** Increase public awareness of emergency topics by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools (i.e., Code Red System, NOAA Weather Radio Systems, Local Emergency Shelters, individual safe rooms, National Weather Service Operations, Local Emergency Plans, and the Local Emergency Management Agency. Etc.)-**H**

Responsible Org.(s)	Appling County (Chairman) Appling County (Co. Adm.) County Schools, County Health Department, Recreation Department, Extension Office
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA/FEMA

- **Action 4.2** Educate citizens on proper procedures and preventative measures to help alleviate heat related issues in and outside of the home – **M**

Responsible Org.(s)	Appling County (Co. Adm.) Appling County (Co. Adm.) County Schools, County Health Department, Recreation Department, Extension Office
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 4.3** Seek funding for supplies to assist in cooling the inside of a home (i.e., fans, air condition window units) – **M**

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$20,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA/FEMA

- **Action 4.4** Compile contact list of Senior Citizens in county that would be at risk during periods of extreme heat. (Individuals without Air Conditioning Disabled, Power Loss etc.) -**H**

Responsible Org.(s)	Appling County (Co. Adm.), Nursing Homes, Senior Citizen Homes, Community Service Center
Coordinating Org.(s)	Appling County-EMA Director

Timeline	1-2 Years
Cost	\$2,000(Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 4.5** Continue to coordinate with churches, schools and municipalities to designate air conditioned buildings (Gyms, Recreation Building, Churches etc.) that could be used for residents without Air Condition or in times of Power Loss- **H**

Responsible Org.(s)	Appling Davis County (Co. Adm.), Nursing Homes, Senior Citizen Homes, Community Service Center, Appling County Schools.
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$2,000 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

II. Future Building and Infrastructure-

The update committee discussed development trends and the impact that excessive heat occurrence could have upon future structures. The mitigation steps included above are intended to apply to both new and existing structures. All new buildings and infrastructure will be required to comply to new building codes and ordinances, where applicable. The construction of new buildings and development was specifically examined in regards to developing and implementing building, fire and safety codes.

III. Existing Buildings and Infrastructure

The mitigation steps included above are intended to apply to both new and existing structures. Existing buildings and infrastructure will be subject to any changes in building, fire and safety codes.

IV. Special Multi-Jurisdictional Strategy and Considerations

The non-spatial nature of an excessive heat event would likely effect everyone in Appling County. These mitigation actions steps were designed for all citizens of the county regardless of municipality. The update committee stressed the need for cooperation and interagency-coordination between the Cities and County when determining the proper actions in an excessive heat event. With these steps identified, each jurisdiction can apply them equally to the population and work together to alleviate the effects of an excessive heat event.

V. Completed and deleted action steps from original plan.

Completed: New Hazard

Deleted: New Hazard

VI. Unchanged action steps: New Hazard

V. New Action Step:

- **Action 4.1-** Increase public awareness of emergency topics by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools
- **Action 4.2-** Educate citizens on proper procedures and preventative measures to help alleviate heat related issues in and outside of the home
- **Action 4.3-** Seek funding for supplies to assist in cooling the inside of a home (i.e., fans, air condition window units)
- **Action 4.4-** Compile contact list of Senior Citizens in county that would be at risk during periods of extreme heat. (Individuals without Air Conditioning Disabled, Power Loss etc.)
- **Action 4.5-** Continue to coordinate with churches, schools and municipalities to designate Air Conditioned buildings (Gyms, Recreation Building, Churches etc.) that could be used for residents without Air Condition or in times of Power Loss

VI. Drought

Goal 5: Reduce the economic impact of drought in Appling County.

Objective 5.1: Minimize economic impact of drought.

- **Action 5.1** Promote more efficient use of surface irrigation – L

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Extension Service Agent
Timeline	5 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/USDA

- **Action 5.2** Encourage the use of farm ponds for irrigation – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Extension Service Agent
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/USDA

- **Action 5.3** Seek funds to repair existing ponds – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Extension Service Agent
Timeline	3-4 Years
Cost	\$50,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/USDA

- **Action 5.4** Implement a support system through FFA and USDA – L

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Extension Service Agent
Timeline	5 Years
Cost	\$0.00
Funding Source(s)	N/A

- **Action 5.5** Locate unused irrigation wells for nonpotable water use during times of drought – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-Extension Service Agent
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/USDA

II. **Future Building and Infrastructure**

New buildings and infrastructure will not be impacted by these proposed measures.

III. **Existing Buildings and Infrastructure**

Existing buildings and infrastructure will not be impacted by these proposed measures.

IV. **Special Multi-Jurisdictional Strategy and Considerations**

Drought has the potential to affect the entire county. The agricultural damage and reduction in drinking water will impact both the incorporated and unincorporated portions of the county. However, the committee's greatest concern is potential for the threat of wildfire resulting from extreme drought. As addressed earlier with the action plans for Wildfire occurrence, though the potential for a wildfire is greater in the unincorporated portions of the county it could easily spread to the city limits. Detailed jurisdictional information and mitigation efforts are addressed in the Community Wildfire Protection Plan, which was consulted by the update committee in the development of the Hazard Mitigation Plan.

V. **Completed and deleted action steps from original plan.**

Completed: NONE

Deleted: NONE

VI. **Unchanged action steps:**

The action steps for drought mitigation remain unchanged. The Appling County Hazard Mitigation Update Committee reviewed the STAPLEE criteria for this hazard and feels that these action steps remain pertinent for preparing the community for possible disaster situations. The

majority of the ongoing actions are related to public awareness or outreach and therefore are seen as continuing efforts.

VII. New Action Step: None

VII. Winter Storm

I. Goal 6: Reduce damage resulting from ice, sleet, and snow during severe winter storms in Appling County.

Objective 6.1: Protect life, health and property of residents from the elements of severe winter storms.

- **Action 6.1** Seek funding to purchase generators (i.e., schools & other public buildings, backup for the City of Baxley Wastewater Lift Stations) – **L**

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA/ FEMA

- **Action 6.2** Seek funding to retrofit buildings to install generators in critical buildings – **H**

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$30,000.00 (Materials)
Funding Source(s)	General Fund/GEMA

- **Action 6.3** Seek funding to purchase equipment to keep access and critical roads open (i.e., debris removal equipment) – **M**

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$500,000 (Materials)
Funding Source(s)	General Fund/GEMA/FEMA

II. Future Building and Infrastructure

The update committee discussed development trends and the impact that a Winter Storm event could have upon structures. The mitigation steps included above are intended to apply to both new and existing structures. New buildings may be impacted through the public awareness initiatives to select roofing material that is highly wind resistant or other information pertaining to winter weather.

III. Existing Buildings and Infrastructure

All existing buildings and infrastructure will be required to comply with any building codes or ordinances, where applicable. Existing buildings may be impacted through the public awareness initiative to select building material that has greater insulation value or other qualities to guard against winter storm damage. This could improve the quality of existing buildings. Additionally retrofitting existing government buildings will make them more resistant to winter weather effects.

IV. Special Multi-Jurisdictional Strategy and Considerations

Winter Storms have the potential to equally affect the entire county, including the Cities of Baxley, Surrency, and Graham. The occurrence of this event is unpredictable; therefore, all considerations and strategies apply equally to each jurisdiction.

V. Completed and deleted action steps from original plan.

Completed: None

Deleted: None

VI. Unchanged action steps:

Action steps 6.1 and 6.2 remain unchanged from the 2008 mitigation plan. Action 6.3 was lowered from a High priority to a Medium priority. The Appling County Hazard Mitigation Update Committee reviewed the STAPLEE criteria for this hazard and feels that this action step remain pertinent for preparing the community for possible disaster situations.

VII. New Action Step: None

VIII. Hailstorm

Goal 7: Reduce damage caused by ice during hailstorms in Appling County.

Objective 7.1: Protect life, health and property of residents from damage and high winds from hail.

- **Action 7.1** Seek funding to retrofit buildings to reinforce windows, roofs and doors – H

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	1-2 Years

Cost	\$50,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA/FEMA

- **Action 7.2** Increase public awareness of emergency topics by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools (i.e., Emergency Public Audible Warning System, NOAA Weather Radio Systems, Local Emergency Shelters, individual safe rooms, National Weather Service Operations, Local Emergency Plans, and the Local Emergency Management Agency, etc.) – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 7.3** Seek funding to purchase generators (i.e., nursing home at hospital, backup for the City of Baxley Wastewater Treatment Plant) – L

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA/FEMA

II. Future Building and Infrastructure

The update committee discussed development trends and the impact that Hail storm occurrence could have upon future structures. The mitigation steps included above are intended to apply to both new and existing structures. New buildings may be impacted through the public awareness initiative to select roofing material that is high in wind resistance. This may improve the quality of future buildings and reduce damage from hail storms.

III. Existing Buildings and Infrastructure

All existing buildings and infrastructure will be required to comply with future building codes or ordinances, where applicable. Existing buildings may be impacted through the public awareness initiative to select roofing material that could better withstand hailstorms. This could improve the quality of existing buildings.

IV. Special Multi-Jurisdictional Strategy and Considerations

Hail Storms have the potential to equally affect the entire county. The occurrence of this event is unpredictable; therefore, all considerations and strategies apply equally to each jurisdiction.

V. Completed and deleted action steps from original plan.

Completed: None

Deleted: None

VI. Unchanged action steps:

Action steps 7.1 and 7.2 have remained unchanged since the previous mitigation plan of 2008. The Appling County Hazard Mitigation Update Committee reviewed the STAPLEE criteria for this hazard and feels that these action steps remain pertinent for preparing the community for possible disaster situations. Both of the above action steps are ongoing efforts. Action 7.3, is largely dependent upon available funding and will be pursued when possible. The update committee determined to lower action step 7.3 from a High priority to a Low level priority.

VII. **New Action Step:** None

IX. Flood

Goal 8: Reduce flood damage in Appling County.

Objective 8.1: Minimize losses to existing and future structures, especially critical facilities, due to flooding.

- **Action 8.1** Seek funding to assess storm water run-off, watershed plans and effectiveness of present drainage ditching, culverts, storm water and sanitation network – M

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	3-4 Years
Cost	\$10,000.00 (Staff Time)
Funding Source(s)	General Fund, CDBG

- **Action 8.2** Maintain updated local FEMA Firm Maps – M

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time)
Funding Source(s)	General Fund

- **Action 8.3** Improve enforcement floodplain, zoning and building regulations in the City of Baxley – M

Responsible Org.(s)	City of Baxley (Mayor)
Coordinating Org.(s)	City of Baxley (Mayor)
Timeline	3-4 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund

- **Action 8.4** Develop floodplain, zoning and building regulations in the City of Graham – H

Responsible Org.(s)	City of Graham (Mayor)
Coordinating Org.(s)	City of Graham (Mayor)
Timeline	1-2 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund

- **Action 8.5** Develop floodplain, zoning and building regulations in the City of Surrency – H

Responsible Org.(s)	City of Surrency (Mayor)
Coordinating Org.(s)	City of Surrency (Mayor)
Timeline	1-2 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund

- **Action 8.6** Improve floodplain, land use, and building regulations in the unincorporated areas of Appling County – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County (Co. Adm.)
Timeline	1-2 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund

- **Action 8.7** Notify residents that reside in a flood plain when building structures in the future – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County (Co. Adm.)
Timeline	1-2 Years
Cost	\$0.00
Funding Source(s)	N/A

- **Action 8.8** Seek funding for adequate storm drainage where practical – H

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), City of Surrency
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency

Timeline	1-2 Years
Cost	\$100,000.00 (Staff Time/Drainage Materials)
Funding Source(s)	General Fund/GEMA/CDBG

- **Action 8.9** Support a more aggressive floodplain management program – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County (Co. Adm.)
Timeline	3-4 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 8.10** Have additional building inspectors knowledgeable on flood plain management in the unincorporated areas of Appling County once funding is available – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County (Co. Adm.)
Timeline	3-4 Years
Cost	\$60,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

II. Future Building and Infrastructure

The update committee discussed development trends and the impact that flood occurrence could have upon future structures. The mitigation steps included above are intended to apply to both new and existing structures. The update committee discussed in detail the need to ensure that future property owners and builders are made aware if they are in a floodplain. All new buildings and infrastructure will be required to comply with any flood related building codes or ordinances, where applicable.

III. Existing Buildings and Infrastructure

Existing buildings and infrastructure located in or adjacent to floodplains will be impacted by changes to floodplain management, storm water run-off and drainage improvements. These measures are designed to improve conditions and prevent relief from flooding issues. Property owners located in a floodplain area will be notified. All existing buildings and infrastructure will be required to comply with any flood related building codes or ordinances, where applicable.

IV. Special Multi-Jurisdictional Strategy and Considerations

In the unincorporated areas of Appling County, more areas are prone to flooding because of the lack of drainage, bodies of water, and other measures that increase the possibility of flooding. The Altamaha River area and property adjacent to the Big Satilla Creek is classified as flood zone three.

In the incorporated area of Appling County, the threat of flooding is still present within the city limits of the Baxley, Surrency and Graham in low-lying areas. Additionally, in the incorporated

areas there is a greater chance that a flood could cause damage to residential, commercial and infrastructure. Baxley, Surrency and Graham are primarily located in zone zero but do have low lying areas with a hazard score of 1.

Appling County and Baxley do not have any floodplain ordinances in place beyond NFIP regulations, but remain in compliance with the NFIP regulations. The current Flood Insurance Rate Map (FIRM) for the county and its municipalities, was adopted on December 17th, 2010. (Please refer to Chapter 3 for additional information) Additionally, a Flood Insurance Study (FIS) of the incorporated and unincorporated areas of the county was conducted by FEMA in 2010. Portions of study were consulted for the purposes of this plan (Please see Appendix C). Portions of study were consulted for the purposes of this plan. (Appendix A, IV) In the future the county will continue to improve and maintain their flood maps. They will also continue to comply with all NFIP requirements and find areas where feasible to exceed requirements, in an effort to increase the overall wellbeing of the citizens of the county. The cities of Graham and Surrency do not participate in the program. None of the municipalities located in Appling County have flood related ordinances in addition to the NFIP regulations.

V. Completed and deleted action steps from original plan.

Completed: None

Deleted: None

VI. Unchanged action steps:

All of the action steps remain unchanged. The Appling County Hazard Mitigation Update Committee reviewed the STAPLEE criteria for this hazard and feels that these action steps remain pertinent for preparing the community for possible disaster situations. Many of the hazards are considered ongoing, and are part of continued mitigation efforts.

VII. New Action Step:

New: None

X. Tropical Storm

I. Goal 9: Reduce damage caused by the high winds that occur during tropical storms in Appling County.

Objective 9.1: Protect life, health and property of residents from high winds from tropical storms.

- **Action 9.1** Seek funding to purchase generators (i.e., schools, backup for the City of Baxley Wastewater Treatment Plant and lift stations) – L

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 9.2** Seek funding to retrofit buildings to install generators in critical buildings – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$30,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 9.3** Increase public awareness of evacuation routes and existing shelters to support Coastal Regions – M

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 9.4** Seek funding to purchase portable lighting – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$6,000.00 (Materials)
Funding Source(s)	General Fund/GEMA/FEMA

- **Action 9.5** Seek funding to purchase equipment to keep access and critical roads open (i.e., debris removal equipment) – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$20,000.00 (Materials)
Funding Source(s)	General Fund/GEMA

- **Action 9.6** Increase public awareness of emergency topics by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools (i.e., Code Red System, NOAA Weather Radio Systems, Local Emergency Shelters, individual safe rooms, National Weather Service Operations, Local Emergency Plans, and the Local Emergency Management Agency, etc.) – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA/FEMA

- **Action 9.7** Seek funding to retrofit buildings to reinforce windows, roofs and doors – H

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	3-4 Years
Cost	\$50,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 9.8** Seek funding to purchase wiring for traffic lights in the City of Baxley to enable them to be operated by a generator – H

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 9.9** Seek funding to purchase proper emergency signage for the County and its municipalities – M

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA/FEMA

II. Future Building and Infrastructure-

The update committee discussed development trends and the impact that a Tropical Storm occurrence could have upon future structures. The mitigation steps included above are intended to apply to both new and existing structures. The update committee also discussed in detail the need to ensure that future property owners and builders are made aware if they are in a floodplain. All new buildings and infrastructure will be required to comply with any flood related building codes or ordinances, where applicable.

III. Existing Buildings and Infrastructure

Existing buildings and infrastructure located in or adjacent to floodplains will be impacted by changes to floodplain management, storm water run-off and drainage improvements. These measures are designed to improve conditions and prevent relief from potential flooding issues caused by a tropical storm. Property owners located in a floodplain area will be notified. All existing buildings and infrastructure will be required to comply with any flood related building codes or ordinances, where applicable.

IV. **Special Multi-Jurisdictional Strategy and Considerations**

The effect of a Tropical Storm occurring along the Georgia coast has the potential to affect the entire county. The resulting flooding and strong winds could impact low lying incorporated portions and the unincorporated portions of the county. Also a Tropical Storm has the potential to create a large amount traffic as a result of evacuees. An event causing a mass evacuation of the Georgia Coastal and Florida Atlantic counties would likely result in many people traveling on U.S. Highways 341 and U.S. 1. Therefore, the city and county will coordinate together to address mitigation actions related to tropical storms.

V. **Completed and deleted action steps from original plan.**

Completed: None

Deleted: None

VI. **Unchanged action steps:**

The only changes that have occurred to the actions from the original plan was the decision to update the priority level of a couple. This decision was made through the use of the STAPLEE criteria and general discussion.

Action 9.1 Seek funding to purchase generators (i.e., schools, backup for the City of Baxley Wastewater Treatment Plant and lift stations) – **L**

This action was lowered from a High priority to a Low priority primarily due to several target locations have been able to purchase generators. However, the action remains relevant due to the need of upgrading and some building are without a backup source of electricity.

Action 9.5 Seek funding to purchase equipment to keep access and critical roads open (i.e., debris removal equipment) – **M**

This action was lowered from a High Priority to a Medium Priority due to public works departments already in possession of some pieces of equipment which could be used to satisfy this action. This action remains relevant and is an ongoing effort to keep county equipment up to date.

The remainder of the actions are viewed as ongoing efforts and essential to tropical storm mitigation.

VII. **New Action Steps:** None

XI. Dam Failure

I. Goal 10: Reduce damage caused by dams that result from breakage in Appling County.

Objective 10.1: Protect life, health and property of residents from dams.

- **Action 10.1** Seek funding to repair pond dams endangering public roads (i.e., lake dams) – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County (Co. Adm.)
Timeline	3-4 Years
Cost	\$1,000,000(Construction/ Material)
Funding Source(s)	General Fund/USDA

- **Action 10.2** Educate citizens who are located in areas threatened by dam breakage – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County (Co. Adm.)
Timeline	3-4 Years
Cost	\$40,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/USDA

- **Action 10.3** Seek funding to maintain dams according to GA EPD regulations – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County (Co. Adm.)
Timeline	1-2 Years
Cost	\$40,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/USDA

II. Future Building and Infrastructure-

The update committee discussed development trends and the impact that a Dam Failure occurrence could have upon future structures that are within the hazard area. The committee discussed notifying new builders and property owners of their vicinity to a dam and the risks associated with its' possible failure. The mitigation steps included above are intended to apply to both new and existing structures.

III. Existing Buildings and Infrastructure

Existing buildings and infrastructure located in or adjacent to the high hazard dam failure area will be impacted by repairs to dams, any changes to floodplain management, storm water run-off and drainage improvements. In addition, repair efforts on existing pond dams should lessen the probability and impact of a dam failure. These measures are designed to improve conditions and prevent loss of life or property damage caused by dam issues. Property owners located in a high hazard area will be notified. All existing buildings and infrastructure will be required to comply with any flood related building codes or ordinances, where applicable.

IV. Special Multi-Jurisdictional Strategy and Considerations

The potential impact of a dam failure in Appling County will most likely affect the unincorporated portions of the county. Dam locations can be viewed in Appendix A, X. In the event of a dam failure, it would most likely require a coordinated, multi-jurisdictional response and therefore each municipality is aware of the hazard. These mitigation action efforts will be involve the county and state agencies.

V. Completed and deleted action steps from original plan.

Completed: None

Deleted: None

VI. Unchanged action steps:

The only changes that have occurred to the actions from the original plan was the decision to update the priority level of a two steps. This decision was made through the use of the STAPLEE criteria and general discussion.

Action 10.1 Seek funding to repair pond dams endangering public roads (i.e., lake dams) – H

This action was raised from a Medium Priority to a High Priority due to one dam in the county receiving a high hazard score and in need of repair efforts.

Action 10.2 Have a building inspector knowledgeable on flood plain management. – H

This action was raised from a Medium Priority to a High Priority due the potential dangers caused by a dam failure in Appling County. A failure has the possibility to effect multiple families and structures, this action is viewed as an imperative step to save lives.

Action 10.3 is viewed as an ongoing effort and will remain an action step until the objective is satisfied.

VII. New Action Steps: None

XII. Hurricane

I. Goal 11: Reduce damage caused by the high winds that occur during hurricanes in Appling County. Objective

11.1: Protect life, health and property of residents from high winds from hurricanes.

- **Action 11.1** Seek funding to purchase generators (i.e., schools, backup for the City of Baxley Wastewater Treatment Plant and lift stations) – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$20,000.00 (Materials)
Funding Source(s)	General Fund/GEMA

- **Action 11.2** Seek funding to retrofit buildings to install generators in critical buildings – H

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	3-4 Years
Cost	\$100,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 11.3** Increase public awareness of evacuation routes and existing shelters to support Coastal Regions – M

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 11.4** Seek funding to purchase portable lighting – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$6,000.00 (Materials)
Funding Source(s)	General Fund/GEMA

- **Action 11.5** Seek funding to purchase equipment to keep access and critical roads open (i.e., debris removal equipment) – H

Responsible Org.(s)	Appling County (Co. Adm.)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$20,000.00 (Materials)
Funding Source(s)	General Fund/GEMA

- **Action 11.6** Increase public awareness of emergency topics by publishing articles in the local newspaper, holding town hall meetings, and providing bulletins to local churches and the schools (i.e. Code Red System, NOAA Weather Radio Systems, Local Emergency Shelters, individual safe rooms, National Weather Service Operations, Local Emergency Plans, and the Local Emergency Management Agency, etc.) – M

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 11.7** Seek funding to retrofit buildings to reinforce windows, roofs and doors – H

Responsible Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County (Co. Adm.), Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Timeline	1-2 Years
Cost	\$50,000.00 (Staff Time/Materials)
Funding Source(s)	General Fund/GEMA

- **Action 11.8** Seek funding to purchase wiring for traffic lights in the City of Baxley to enable them to be operated by a generator – H

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-EMA Director
Timeline	1-2 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

- **Action 11.9** Seek funding to purchase proper emergency signage for the County and its municipalities – M

Responsible Org.(s)	Appling County (Co. Adm.) Cities of Baxley (Mayor), Graham (Mayor), Surrency (Mayor)
Coordinating Org.(s)	Appling County-EMA Director

Timeline	3-4 Years
Cost	\$2,000.00 (Staff Time/News Articles/Town Hall Meetings)
Funding Source(s)	General Fund/GEMA

II. **Future Building and Infrastructure-**

The update committee discussed development trends and the impact that a Hurricane occurrence could have upon future structures. The mitigation steps included above are intended to apply to both new and existing structures. The update committee also discussed in detail the need to ensure that future property owners and builders are made aware if they are in a floodplain. All new buildings and infrastructure will be required to comply with any flood related building codes or ordinances, where applicable.

III. **Existing Buildings and Infrastructure**

Existing buildings and infrastructure located in or adjacent to floodplains will be impacted by changes to floodplain management, storm water run-off and drainage improvements. These measures are designed to improve conditions and prevent relief from potential flooding issues caused by a hurricane. Property owners located in a floodplain area will be notified. All existing buildings and infrastructure will be required to comply with any flood related building codes or ordinances, where applicable.

IV. **Special Multi-Jurisdictional Strategy and Considerations**

The effect of a Hurricane occurring along the Georgia coast has the potential to affect the entire county. The resulting flooding and strong winds could impact low lying incorporated and the unincorporated portions of the county. Also a Hurricane has the potential to create a large amount traffic as a result of evacuees. An event causing a mass evacuation of the Georgia Coastal and Florida Atlantic counties would likely result in many people traveling on U.S. Highways 341 and U.S. 1. Therefore, the city and county will coordinate together and with the state to address mitigation actions related to Hurricanes.

V. **Completed and deleted action steps from original plan.**

Completed: None

Deleted: None

VI. **Unchanged action steps:**

The only changes that have occurred to the actions from the original plan was the decision to update the priority level of action 11.4. This decision was made through the use of the STAPLEE criteria and general discussion.

Action 11.4 Seek Funding to purchase portable lighting –**H**

This action was raised from a Medium Priority to a High Priority due to the need for portable lighting and the flexible uses of this equipment. In the event of a Hurricane, incident command and staging areas have a critical need for portable lighting among other places such as intersections and other critical locations.

The remainder of the actions are viewed as ongoing efforts and essential to Hurricane Mitigation efforts.

VII. New Action Steps: None

Chapter 4 - Local Natural Hazard, Risk and Vulnerability (HRV).

Chapter Four	Updates to Section
I. Integration into Local Planning Mechanisms	Section Revised and reduced
II. Monitoring, Evaluation, Updating	Section Revised and reduced. Additional description of Monitoring, Evaluation and Updating process.
III. Conclusion	Section Revised and Reduced
IV. References	Section Revised

I. Integration into Local Planning Mechanisms

A. Incorporation into Future Local Planning Mechanisms

This plan will be presented to the county commissioners and city councils to ensure its inclusion in their planning documents, as well as any other ordinances, capital improvement projects etc., that they may undertake in regards to hazard mitigation. The Appling County EMA Director will serve as a facilitator to help incorporate appropriate portions of the plan into other documents.

The plan will also be presented to the committee(s) responsible for updating the comprehensive plan. The Appling County Comprehensive Plan was previously updated in 2008. The comprehensive plan provides an excellent tool for guiding the growth of Appling County, and its municipalities. The continued incorporation of portions of the Hazard Mitigation Plan into the comprehensive planning process will ensure the inclusion of importation mitigation issues. Though the entire Hazard Mitigation plan will be made available to the comprehensive plan committee, the “Risk Assessment and “Mitigation Strategy” will specifically be focused upon. These two sections are the most directly tied to future development, since they highlight key risks and strategies that will need to be considered by the committee.

Some key areas of overlap between the two plans include; the need for additional zoning regulations and building codes, increasing public safety, street/drainage improvements, and future residential development in the unincorporated portions of the county. These issues among others will be addressed in the comprehensive plans’ “Community Issues and Opportunities Section” and “Implementation Program” section. An evaluation and assessment of mitigation actions will also be included the Comprehensive Plan and the Short Term Work Program upon their revision.

In addition, the County Commission and Municipal Authorities will ensure that the local authorities responsible for the Local Emergency Operations Plan (LEOP) and other plans, including the development of goals established in the local comprehensive plan, utilizing them as

they relate to the Pre-disaster Mitigation Plan. A copy will also be given to the Georgia Forestry Commission and incorporated into their Community Wildfire Protection Plan updates.

B. Previous Plan Incorporation into Local Planning Mechanisms

The original Appling County Hazard Mitigation Plan was regularly incorporated into other planning mechanisms in the five years since it's' adoption. The plan has been made available to key individuals and groups involved in the development of these other planning documents. The Appling County Joint Comprehensive Plan was updated in 2008. Many of the mitigation strategies from the original Hazard Mitigation Plan were incorporated into the comprehensive plan update. These included building code improvements, seeking additional equipment and training for emergency response personnel, and adding additional fire stations in the county.

The development of the Local Emergency Operations Plan has also included portions of the original Hazard Mitigation plan. The data and maps included in the Hazard mitigation plan have provided additional tools in the development of other documents. Incorporation efforts have also included also included the county commission and municipal governing bodies using the plan as a guide in related capital improvement plans and general decision making in regards to hazard mitigation activities.

II. Monitoring, Evaluation, Updating

A. Original Plan Monitoring, Evaluation, Updating

The original Appling County Hazard Mitigation Plan included a detailed process for monitoring, evaluating and updating the plan in a five year period. This plan was largely dependent upon the coordination of the overall process by the county EMA Director. The implementation process was envisioned as being directed and initiated by the EMA office, with appropriate organizations and entities being responsible for specific mitigation actions. The municipalities delegated responsibility for implementation of actions to the appropriate city department or employee. For example, the city Fire Chief and his staff were tasked with seeking funding for additional fire equipment. Similarly, county departments and staff were given duties based upon the mitigation actions that were applicable. For actions that involved city and county cooperation, the EMA director was the primary coordinator. The EMA director was also in charge of monitoring progress and obtaining updates from the other city and county departments involved in implementation.

The original plan also outlined an evaluation strategy of holding a hazard mitigation review committee meeting in January of every odd numbered year. It was envisioned that at these meetings that representatives from all of the implementation departments and agencies would reconvene to discuss progress, obstacles and changes. This would also be an opportunity to make any needed changes to the mitigation action plan and to develop solutions to any problems. A report was to be developed from this meeting and presented at a county commissioners meeting and a city council meeting, which would allow the opportunity for public comment. Unfortunately, these formal evaluation meetings did not occur. This could be attributed to several causes, including changes in key city and county leadership positions. Instead, evaluation

was less structured and more pragmatic, with city and county employees reporting progress to their respective elected officials. Additionally, the EMA director kept informed on progress and changes made through discussion with stakeholders.

A strategy for updating the original plan was also outlined. This included incorporating in to the plan the changes discussed at the meetings held in January of each odd numbered year. However, formal changes made to the plan did not occur until the Heart of Georgia Altamaha Regional Commission was contracted to facilitate the mandatory five year update process. This process was described in more detail in Chapter One, Section II-III.

Due to issues with the feasibility and effectiveness of the original Monitoring, Evaluation and Update strategy the decision was made by the update committee to make a couple important adjustments. These changes include altering the time line for the review committee meeting that was originally scheduled for January of every odd numbered year. The review committee will now reconvene in October of each year. The update committee felt that by meeting annually enable to more efficiently update and evaluate the progress being made with the mitigation actions. Additionally, by holding the meeting in the fall of the year, the committee feels that attendance may be higher, as opposed to conflicting with the holiday season.

This meeting will be advertised to the public in advance and a report will be made to the municipal councils and Appling County Commissioners. This will provide an additional opportunity for public input on changes made. Any changes made to the Hazard Mitigation Plan at the committee meetings will be incorporated into the next mandatory five year update. A more detailed description of the Monitoring, Evaluations, and Update strategy can be found in sections B, C and D.

B. Monitoring Strategy

i. Method:

The primary method used to monitor the implementation of the update will be to observe the progress made towards achieving specific mitigation actions. City employees and officials directly involved in implementing the actions will be responsible for providing the mayor and council with regular updates, who will inform the County EMA Director. Likewise, county employees and officials will report to the EMA Director about progress made. By monitoring the status of the mitigation action plan as it is being implemented, the EMA Director will be able to remain informed and involved.

ii. Responsibility

The Appling County Emergency Management Agency Director is the primary individual responsible for the monitoring of the plan. It is his/her responsibility to coordinate with the city and county departments' responsibility for implementing the different portions of the plan. Through regular discussions and personal involvement, the EMA director will be able to properly monitor the progress. The EMA Director will also actively seek public comment and involvement.

For the municipalities, responsibility falls upon the mayor, council and administrative personnel for municipally implemented portions of the plan and to provide updates to the EMA director. Furthermore, all department heads, as well as any officials, that are involved in the implementation process, will have the responsibility to help monitor and provide updates to the EMA Director.

iii. Timeframe

The monitoring process will be ongoing throughout the five years that the plan is valid. The annual meeting of the update committee will convene in November of each year. This meeting will provide an additional opportunity for the EMA director to stay up to date on progress being made.

C. Evaluation Strategy

i. Method:

In order to properly evaluate the plan and implementation of its' action strategy two major factors will be considered. The first being whether or not the mitigation action has actually been implemented, taking into consideration that some actions are ongoing. Secondly, whether or not the action appears to be successful in helping to reach the overall objective it is intended to. This will include utilizing a checklist to determine what mitigation actions have been undertaken or accomplished, the completion date (if applicable), the cost associated with each completed action, and whether actions are deemed successful.

ii. Responsibility

The Hazard Mitigation Plan review committee will hold the primary duty of evaluating the success of the plan. The committee will be able to properly evaluate the plan through their involvement in its implementation. The EMA Director and city mayors will be tasked with presenting a summary of the evaluation at the county commission and city council meetings, respectively. Additionally public input will also be sought for the evaluation of strategies. The public provides an excellent source for measuring the successfulness of mitigation actions.

iii. Timeframe

The formal evaluation of the mitigation action plan will occur at the committee meeting each October. At this time the mitigation strategy should be reviewed with status reports given by the members of the committee upon whether each action has been implemented and whether or not it has been successful. The checklist used for this evaluation will then be developed into a summary to be presented for the County Commission and City Councils once the plan has been evaluated. This summary will be given at the November commission and council meetings. Both the county commission and city council meetings are publicly advertised, providing an opportunity for public comment on the plan evaluation and any changes made.

D. Updating

i. Method

Due to the requirements set forth in the Disaster Mitigation Act of 2000, Appling County is required to formally update and revise the plan every five years. The EMA Director, as well as any organization or individual contracted to help facilitate the update process, will reconvene the review committee on a monthly basis prior to the expiration date of the current plan. The EMA Director will ensure that the committee consists of representatives from the appropriate organizations and if needed invite new members. Efforts will also be made to again obtain the involvement of the public in the update process.

In the update process the committee will review the mitigation goals, objectives and action items to determine their relevance to changing situations in the county, as well as changes in State or Federal policy, and to ensure they are addressing current and expected conditions. The committee will also review the risk assessment portion of the plan to determine if this information should be updated or modified, given any new available data. The list of critical facilities for the county should also be reexamined for accuracy and modified as needed.

Through the use of the monitoring and evaluation strategies outlined in sections II B and II C, the committee should already have an up to date record of the implementation and success of the plan. This record will greatly aid the review committee in their preparation of the 2018 Hazard Mitigation Plan.

The plan update will be submitted to Georgia Emergency Management Agency and the Federal Emergency Management Agency for their review and approval.

Updates of the plan will be presented to the Appling County Commission, as well as the city councils for approval.

ii. Responsibility

The Appling County Emergency Management Agency Director is responsible for the ensuring that the Pre-Disaster Hazard Mitigation Plan is updated. He/she will coordinate the process and reconvene the review committee. If an individual or organization is contracted to aide in the update process then they will share in the responsibility for the update process with the EMA Director. All city and county employees/officials are responsible for aiding in the update process as determined by the EMA Director.

iii. Timeframe

In order to update the plan in the five-year period the EMA director will reconvene the review committee at least one year in advance of the plan expiration date. They will meet on a monthly basis, or as decided by the committee, and continue until the update of the plan has been completed. These meetings will be in addition to the annual October meeting.

No later than the conclusion of the five-year period following initial approval of the plan, the EMA Director shall submit a revised Hazard Mitigation Plan to the Georgia Emergency Management Agency and the Federal Emergency Management Agency for their review and coordination.

E. Public Involvement

Appling County is dedicated to involving the public directly in the continual monitoring, evaluating and updating of the Hazard Mitigation Plan. In order to help ensure public participation during the monitoring and evaluation process the annual meeting will be announced at a city council and county commissioner meeting prior to the date. Additionally the EMA Director and mayors will make reports to the county commission and city councils after each annual meeting, allowing for additional input. This will give the public an opportunity to comment and ask questions about the ongoing implementation of the mitigation actions. Moreover, many of the mitigation actions taken by the city or the county will be discussed at their monthly meetings, such as capital projects, grant awards etc.

Public Involvement will also be sought during the five year update process. Public notice of at least two of the update meetings will be published in the local newspaper. Although the Plan Review Committee will represent the public to some extent, the public will be invited to participate with the plan review committee to directly comment on and provide feedback about the Plan. In addition regular reports will be made at cities council and Appling County Commissioners' Meetings. All city and county officials, as well as any employees, will be encouraged to notify citizens of meetings and any changes being made.

An updated copy of the plan will be available at the Appling County EMA office, all municipal city halls and the County Commissioner's Office. The existence and location of these copies will be publicized in the local newspaper. All comments and questions will be directed to the local EMA office for follow-up. The Heart of Georgia Altamaha Regional Commission will also maintain a copy that can be viewed upon request.

Conclusion

I. Conclusion Summary

With the time and effort put into the hazard mitigation update process, Appling County officials and employees have obtained a great deal of information and knowledge regarding the County's disaster history, the presence of natural hazards, the likelihood of each of these hazards occurring within the county, and the potential impacts and challenges these hazards present to the community.

The mission of the Appling County Hazard Mitigation Update Committee is: To make the citizens, businesses, communities and local governments of Appling County less vulnerable to the effects of natural hazards through the effective study of hazard mitigation, hazard risk

assessments, wise flood plain management, and a coordinated approach to mitigation policy through federal, state, regional, and local planning activities.

The Committee feels that this plan, when implemented, will help to make all of Appling County a safer place to live and work for all of its citizens.

IV. References

A. Publications

FEMA Pre-Disaster Mitigation How-to Guides #1, 2, 3, 4, 5, 6, 7, 8, 9 (FEMA)

GEMA Supplements to FEMA Pre-Disaster Mitigation How-to Guides (GEMA)

2008 Georgia Hazard Mitigation Strategy Standard and Enhanced

2007 Appling County Comprehensive Plan Update

The Georgia County Guide 2009

USGS Droughts in Georgia

2010 U.S. Census

Appling County 2010 Fire Protection Plan

2007 USDA Appling County Census of Agriculture

B. Web Sites

FEMA (www.fema.gov)

GEMA (www.gema.state.ga.us)

National Climatic Data Center (www.ncdc.noaa.gov)

US Army Corps of Engineers (www.geo.usace.army.mil)

National Storm Damage Center
<http://stormdamagecenter.org/>

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

C. Other

American Red Cross

Appling County Tax Assessor

Forest Inventory and Analysis

Georgia Department of Natural Resources

Georgia Forestry Commission

United States Department of Agriculture

United States Geological Survey