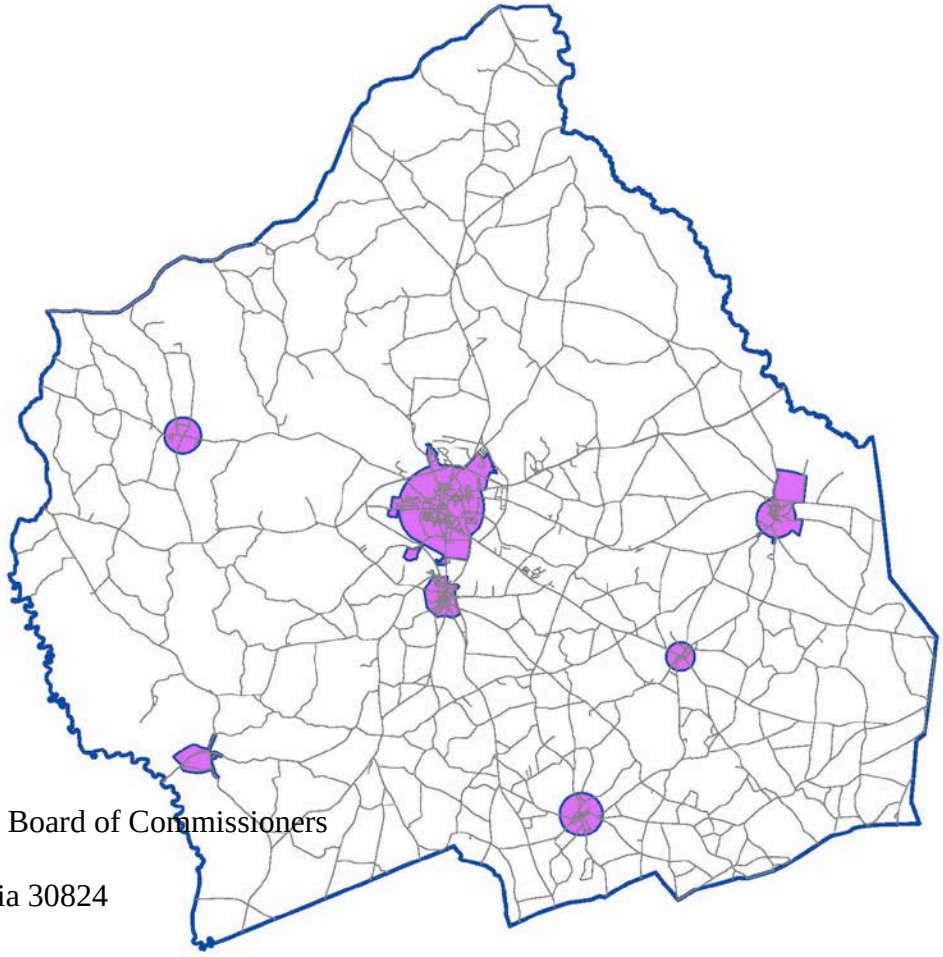
Washington County, Georgia
Multi-Hazard Pre-Disaster Mitigation Plan
Original Plan Approval: 12/12/2007
Update Plan Approval: 10/14/2013
2018 Update Plan Approval: 00/00/2018



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CHAPTER I. INTRODUCTION TO THE PLANNING PROCESS

Table 1.1 provides a brief description of each chapter section and a summary of the changes made.

Table 1.1

Chapter I. Section		Updates to Section
I.	Purpose and need of the plan, authority & statement of problem	Updated text of this section.
II.	Local methodology, brief description of plan update process, Participants in update process	Updated the participants, planning process and how data collection was performed
III.	Description of how each section of the original plan was reviewed and analyzed and whether it was revised	Since there have been numerous changes to the GEMA-PDM planning template since the 2012 approval all sections of the original plan were analyzed and revised.
IV.	Organization of the plan	Organized updated by GEMA local planning template Local Hazard Mitigation Plan Update Template 5-23-12 and includes a timeline.
V.	Local Hazard, Risk, and Vulnerability (HRV) summary, local mitigation goals and objectives	Added new information to summary, new purpose for plan.
VI.	Multi-Jurisdictional special considerations (HRV, goals, special needs)	Added new information regarding multijurisdictional concerns.
VII.	Adoption, implementation, monitoring and evaluation	Evaluated the chapter, added additional text clearly delineating the task for implementation, and monitoring. Adopted after GEMA and FEMA reviewed and approved the update.
VIII.	Community Data (demographics, census, commerce, history, etc.)	Updated demographic and added additional information by jurisdiction.

SECTION I. PURPOSE AND NEED OF THE PLAN, AUTHORITY AND STATEMENT OF PROBLEM

The Washington County 2018 Update is a review and improvement of our Multi-Hazard Pre-Disaster Mitigation Plan Update approved on October 14, 2013. The plan fulfills the requirements of the Federal Disaster Mitigation Act of 2000 (DMA2K). The Georgia Emergency Management Agency (GEMA) and the Federal Emergency Management Agency (FEMA) administer the Act. The act provides federal assistance to state and local emergency management and other disaster response organizations in an effort to reduce damage from disasters. The plan has involved many community partners including elected officials along with city and county, fire, emergency management, and law enforcement personnel. The plan's ultimate goal is to identify natural disasters that threaten our community and develop strategies to reduce or lessen the impact of these hazard events.

The 2018 update is written to comply with Section 409 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act Title 44 CFR as amended by Section 102 of the Disaster Mitigation Act of 2000. The act gives state and local governments the framework to evaluate and mitigate all hazards as a condition of receiving federal disaster funds. The 2018 update covers all of Washington County to include Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille. The plan will identify all natural disasters that threaten the lives and properties of our community. The scope of the update includes both short and long-term mitigation strategies, implementation policies and possible sources of project funding. It also identifies mitigation strategies implemented since the 2013 plan update.

The plan also contains the following information on:

- The vision of mitigation in our community;
- The profile of Washington County, its geography, history, physical features and other community indicators;
- The planning process and the involvement of all municipal, state and federal governments, the public, industry and other community players;
- Washington County's past and predicted exposure to natural hazards and the potential risks that include the impacts on critical infrastructure with anticipated losses was documented;
- An overview of Washington County's capabilities to implement hazard mitigation goals and objectives, and policies that will effectively mitigate risks to our community;
- Procedures for maintaining an effective, long range hazard mitigation plan and strategy to implement;
- An assessment of Washington County's current policies, goals and regulations that pertain to hazard mitigation;
- Documentation of the planning process;
- Updated hazard events that occurred since 2013;
- Updated critical facilities added since 2013;
- Documented current mitigation strategies implemented since 2013; and
- Examined and updated mitigation strategy goals, objectives and action steps.

The update is the product of the combined efforts of Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille. Realizing that identifying the community's risks and working collectively toward the prevention of disasters in the community is in the county's best interest, the Washington County Emergency Management Agency (EMA) took the lead role in the update. Under the agency's leadership, there has been an endorsement and a commitment by Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille.

Continued mitigation planning is imperative to lessen the impacts of disasters in Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille. This plan serves as an excellent method to organize and document current and ongoing mitigation strategies; however, the implementation of the plan and its components is vital to achieve a community that is resistant to the impact of a disaster. The objective is implementation of this plan will result in a reduction of the loss of life and property, while allowing the county to prosper with minimal disruption of services to the community.

SECTION II. LOCAL METHODOLOGY, PLAN UPDATE PROCESS AND PARTICIPANTS

The Washington County Board of Commissioners contracted with the Central Savannah River Area Regional Commission (RC) to assist in the update to the 2013 plan update. The RC has assisted eleven counties in the completion and update of their Pre-Disaster Mitigation Plans. The RC is currently assisting nine counties with their second update. The RC was tasked to review the current plan and to identify new information that needs to be incorporated into the update. The RC in conjunction with the EMA Director, supervised the project, organized the data, set meeting dates, documented in-kind services, and worked with GEMA to complete the update.

EMA Director Russell Riner assembled the Hazard Mitigation Planning Committee. Table 1.2 identifies the 2013:

Table 1.2

Name	Agency	Jurisdiction
Russell Riner	Washington County EMA	Washington County
Chris Hutchings	County Administrator	Washington County
Lyle Pittman	Fire Chief	City of Oconee
Regina Freeman	City Clerk	City of Oconee
Dorenda Smith	City Clerk	Town of Deepstep
Darrell Lanier	Fire Chief	Town of Deepstep
Michael Phillips	Fire Chief	Ohoopee Community
Alfred Brantley	Fire Chief	Warthen Community
Benjamin Avant	Fire Departments	Sandersville/ Deepstep
Greg Frazier	Thiele Kaolin Company	Washington County
Michael Baus	Town of Harrison Police Dept.	Town of Harrison
Marvin Osborne	Fire Chief	Town of Harrison
Adam Martin	City Coordinator	City of Tennille
Lee Strickland	Fire Chief	City of Tennille
Ken Westbrook	Mayor	Town of Riddleville
David Frost	Fire Chief	Town of Riddleville
Larry Mathis	Board of Commissioners	Washington County
Kevin Morris	Washington Electric Membership	Washington County
William Alligood	Public Works & Fire Chief	City of Davisboro
Melvin Williams	Board of Education	Washington County
Willie Coneway	Board of Education	Washington County
Seth Rhodes	Building Inspector/ Code	City of Sandersville
Judy McCorkle	City Administrator	City of Sandersville
William Thomas	DFCS	Washington County
Wayne Poole	Electrical Department	City of Sandersville
Robert Eubanks	Public Works Director	City of Sandersville
Victor Culyer	Police Chief	City of Sandersville
Mark McGraw	Washington County Sheriff Office	Washington County
Shannon Brinson	WCRMC & WACO EMS	Washington County
Charles Price	Washington County Reg. Medical Center	Washington County

Dean Davis	Public Works Director	Washington County

The 2013 planning committee members still employed by their respective jurisdictions received an invitation to participate in the update. The 2018 committee are identified in Table 1.3 by their respective organizations and political subdivisions.

Table 1.3

Name	Agency/Title	Jurisdiction
Russell Riner	Washington County EMA Director	Washington County
Dustin Peebles	County Administrator	Washington County
Regina Freeman	City Clerk	City of Oconee
Richard Gunn	Fire Chief	City of Oconee
Dorenda Smith	City Clerk	Town of Deepstep
Darrell Lanier	Fire Chief	Town of Deepstep
Marlene Garrad	City Council	City of Tennille
Joel Cochran	Police Chief	City of Tennille
Dwayne McDonald	Fire Chief Warthen	Washington County
Ken Westbrook	Mayor	Town of Riddleville
Craig Walker	Fire Chief	Town of Riddleville
Lee Strickland	Fire Chief	City of Tennille
Jason Boatright	Volunteer Fire Fighter	City of Tennille
William Alligood	Public Works & Fire Chief	City of Davisboro
Melvin Williams	Board of Education Assistant Superintendent	Washington County
Dave Larson	Building Inspector/ Code	City of Sandersville
Judy McCorkle	City Administrator	City of Sandersville
Wayne Poole	Electrical Director	City of Sandersville
Robert Eubanks	Public Works Director	City of Sandersville
Victor Culyer	Police Chief	City of Sandersville
Judy McCorkle	City Administrator	City of Sandersville
Mark McGraw	Deputy-Washington County Sheriff's Office	Washington County
Sarah Anderson	City Clerk	Town of Harrison
Marvin Osborne	Fire Chief	Town of Harrison
Dianne Law	Road Department Office Manager	Washington County
Alexandria Orr	Road Department Dispatcher	Washington County
Cherry Bowen	Director Recreation Dept./Senior Center	Washington County
Elaine Walk	City Council Member	City of Tennille

The 2018 committee was responsible for the organization, data collection and completion of the plan. It is the responsibility of the committee to include all pertinent departments within their respective governments and to request information needed for plan completion. The following agencies/departments/organizations provided specific information and support for the original plan and provided any new information for the update:

- Washington County Board of Education was responsible for providing structural replacement and content values for all schools as well as square footage and occupancy limits.
- Sandersville and Tennille Police Departments provided staff support to the PDM

planning effort and were responsible for providing structural replacement and content values for all critical facilities located in their respective cities as well as square footage and occupancy limits.

- Washington County Sheriff's Office provided staff support to the PDM planning effort.
- Washington County Health Department identified vulnerable populations. They also provided replacement value estimates for their properties.
- All Fire Departments provided staff support to the PDM planning effort and assisted with identifying occupancy limits for some of the critical structures and replacement value estimates.
- City officials from Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille provided information relative to their jurisdiction and provided replacement value estimates for their critical facilities.
- Georgia Forestry Commission provided data on wildfire events and assisted with the formulation of mitigation measures.
- Washington County Chamber of Commerce assisted in identifying major businesses.
- Washington County Administrator provided information about county government buildings including their respective replacement and content values and square footages.
- Washington County Tax Assessor's Office provided most of the aggregate values for the critical structures. The valuations were converted to full values since they values are calculated at 40%. This information, combined with demographic data, is located on GEMA Worksheet #3a in Appendix D for all jurisdictions.
- The RC's Geographical Information System (GIS) Department produced several of the maps contained in the update. Maps are located in Appendix A.
- GEMA provided the HAZ-US report for Washington County and provided guidance for the plans completion as needed.

Several resources were consulted to facilitate the development of the update. Data was collected from numerous sources, including the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI)), Spatial Hazard Events and Losses Database for the United States (SHELDUS™), National Weather Service, US Geological Survey (USGS), Southeast Regional Climate Center (SERCC), US Census Bureau, Georgia Department of Natural Resources (DNR), Georgia Forestry Commission (GFC), Georgia Tornado History Project Database, Georgia Department of Community Affairs (DCA), US Department of Agriculture (USDA), local and regional newspaper articles, as well as personal interviews. Table 1.4 provides a list of existing planning documents used during the update.

Table 1.4

Existing planning mechanisms	Reviewed? (Yes/No)	Method of use in Hazard Mitigation Plan
Washington County Unified Comprehensive Plan 2012026	Yes	Development trends, capability assessment, mitigation strategies
Local Emergency Operations Plan	Yes	Identifying hazards; Assessing vulnerabilities; Capability assessment
Georgia Emergency Operations Plan	Yes	Identifying hazards; Assessing vulnerabilities;
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, determine assets added to disaster relief and response.
State Hazard Mitigation Plan	Yes	Risk assessment, review of recommended strategies
Land Use Maps	Yes	Assessing vulnerabilities; Development trends; Future growth
Critical Facilities Maps	Yes	Locations
Community Wildfire Protection Plan	Yes	The plan is being updated and the GFC could not find me a copy of the old plan.
Soil Survey for Washington and Wilkinson Counties	Yes	Physical Characteristics of the County
Flood Insurance Study	Yes	Review for historical Data and Information
Hazard Risk Analyses Supplement to the Washington County Joint Hazard Mitigation Plan Provided by The Polis Center	Yes	Assessing vulnerabilities; Mitigation strategies, risk assessment
CSRA Regional Plan 2026	Yes	Development trends; Future growth, regional concerns and data
Flood Mitigation Assistance Plan	No	The county does not have a Flood Mitigation Assistance Plan and is listed as a mitigation action in Chapter III

The committee held six meetings over a 20-month period to guide the development of the plan. Individual jurisdictions and/or agencies were contacted, as information was needed. The committee was responsible for developing the mission statement, as well as the goals, objectives, and action steps identified in the plan. The committee researched previous hazard information in the areas of earthquakes, flooding, wildfires, tornados, winter storms, hurricanes, high winds, dam failure, lightning, hail, and drought. However, some hazards were eliminated due to their low level of risk. Committee members collected critical facilities information based on their area of expertise or jurisdiction. The RC was responsible for assessing vulnerability and estimating potential losses from the information collected. Potential losses include people, structures/properties, infrastructure, and other important community assets.

Table 1.5 provides the dates and synopsis of committee meetings. All meetings were open to the public and meeting notices posted at all governmental offices. Of the eight meetings, three were advertised in *The Sandersville Progress,* the County's legal organ. This is the most efficient

means to disseminate information to residents and organizations located in the county. In order to meet the requirement to afford an opportunity for neighboring communities, local and regional agencies, businesses, academia and other private and non-profit interests to be involved in the planning process, invitations were extended by email. Invitations were extended to the following counties: Burke, Columbia, Glascock, Hancock, Jefferson, Jenkins, Lincoln, McDuffie, Richmond, Taliaferro, Warren, and Wilkes including all municipalities located within the counties. It is noted that no public comments or feedback was provided by the public. Copies of correspondence, emails and advertisements are in Appendix E.

Table 1.5

Meeting Date	Purpose of Meeting
August 10, 2016	Advertisement ran in *The Sandersville Progress* for public meeting on August 19, 2016.
August 19, 2016	Kickoff meeting Shelby Meyers, from GEMA provided a presentation about the purpose and need of the plan along with changes to the process since the 2013
August 25, 2017	This meeting was to ensure all data collected to date was correct for critical facilities and to reviewed mitigation strategies and action steps
December 13, 2017	This meeting was a continuation of the August 25, 2017meeting. Ensured all data collected was correct for critical facilities. It also covered in detail the devastation and after effects of the ice storm. The discussion of lessons learned continued.
January 30, 2018	Reviewed plan, mitigation strategies and HASUZ information.
February 2, 2018	All fire departments meet to review the plan and HASUZ report
February 13, 2018	Final over view of plan to ensure all jurisdictional information was correct and review final mitigation strategies.
March 21, 2018	An advertisement ran in *The Sandersville Progress* advertising the public meeting on March 29, 2018 for public input before submission of plan.
May 29, 2018	This meeting was to ensure the committee and public had a final opportunity to provide input before submission to GEMA for review.
TBD *(will add date once approved by FEMA)*	Advertisement ran in *The Sandersville Progress* for public review period and the final meeting.
TBD *(will add date once approved by FEMA)*	Held final meeting after FEMA Approved Pending Adoption (APA), The final meeting was held after the review period to ensure that the public was afforded the opportunity provide input.

SECTION III. ORIGINAL PLAN REVIEW AND REVISION

The Federal Disaster Mitigation Act of 2000 requires an update to the Pre-Disaster Mitigation Plan every five years. The EMA Director was responsible to meet this requirement. The committee, with the assistance of the RC, was involved in the planning process to ensure thorough data collection. All members of the committee were responsible for the evaluation of 2013 plan. During the review process, the committee noted mitigation accomplishments, updated and prioritized mitigation projects, added additional hazard information, developed new goals and objectives, solicited input from the public and made any needed or required revisions. The

evaluation included analyzing any changes in the needs and/or capabilities of Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille.

SECTION IV. ORGANIZATION OF THE PLAN

The estimated time to complete the plan update was approximately 20 months. Plan completion was identified by adoption of resolution by all jurisdictions. The update contains a Hazard, Risk, and Vulnerability (HRV) Assessment describing the natural hazards typically occurring within the county, as well as a review of all mitigation goals, objectives, and related courses of action. In addition, plan implementation and maintenance were reviewed, which includes methods to provide opportunities for public involvement.

The hazards included in this plan are considered to have the highest probability of occurrence, vulnerability, potential loss/damages, and highest frequency of occurrence. The plan also identifies and prioritizes hazard mitigation opportunities in each vulnerable area based on the input from the committee members, relevant government agencies, local businesses, and Washington County citizens.

SECTION V. LOCAL HAZARD RISK AND VULNERABILITY, SUMMARY LOCAL MITIGATION PLANNING GOALS OBJECTIVES

The committee, early in the update process, established a set of goals and objectives to ensure the effectiveness of this plan. These goals and objectives established the paradigm for the planning process and proved very successful by the many accomplishments of the 2013 plan update. These goals and objectives are as follow:

- To actively involve and gain support from Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille and unincorporated Washington County for the reduction of disasters in our community.
- Prioritize identified mitigation projects.
- Seek and implement any grant funding for the reduction of disasters in Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille.
- Monitor, evaluate, and update the progress of the plan as needed.
- To form partnerships among local, state, and federal agencies to make Washington County more resistant to the effects of disasters.
- Strengthen our communities against the impacts of disasters through the development of new mitigation strategies and strict enforcement of current regulations that have proven effective.
- Reduce and where possible eliminate repetitive damage, loss of life and property from disasters.
- Bring greater awareness throughout the community about potential hazards and the need for community preparedness.
- To further enhance common mitigation projects and goals between Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille.

An HRV assessment was accomplished by compiling and reviewing historical data on the location of specific hazards, the value of existing structures/properties in hazard locations, and analyzing the risk to life, property and the environment that could potentially result from future hazard events. The committee accomplished the HRV goals and objectives by completing the following steps:

Inventory of Critical Facilities: Critical facilities are crucial for providing essential services necessary for preserving the safety and quality of life of its residents. In addition, these facilities fulfill important public safety, emergency response, and/or disaster recovery functions. All critical facilities were added to the Georgia Mitigation Information System (GMIS). Critical facilities for Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille were identified, updated, mapped, and illustrated in Appendix A.

Hazard Identification: Maps and historical data sources were studied and reviewed to identify the geographic extent, intensity, and probability of occurrence for various hazard events. The 2013 committee identified five major hazards that have the potential to affect Washington County: flooding, drought, wildfire, severe weather (tornados, tropical storms, thunderstorms) and winter storms. The update committee reviewed current hazard data and added hail to the already identified hazard. Appendix D provides an updated comprehensive hazard.

Profiling Hazard Events: The committee analyzed the causes and characteristics of each hazard, and its effect on Washington County in the past to determine what segment of the population and infrastructure has historically been vulnerable to each specific hazard. A discussion of each hazard's updated profile is in Chapter 2.

Vulnerability Assessment: This step was accomplished by comparing each previously identified hazard with the inventory of affected critical facilities and population exposed to each hazard. An updated Worksheet #3a is provided in Appendix D.

Estimating Losses: Using the best available data, tax digest data, parcel maps and GMIS reports and maps for critical facilities allowed the committee to estimate damages and financial losses that might occur in a geographic area. 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. All information in this section has been updated *(Appendix A and Appendix D).*

Mitigation Goals and Objectives: 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 Washington 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.

SECTION VI. MULTI-JURISDICTIONAL SPECIAL CONSIDERATIONS

Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille provided active participants in the planning process and identified mitigation goals, objectives and action items specific to their jurisdiction. The governing bodies for Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille have formally adopted the Multi-Hazard Pre-Disaster Mitigation Plan.

Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille were notified in June of 2016 of the requirement concerning the 2018 update to the 2013 plan. Representatives from Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille have worked collectively over the past months to gather data that included researching old records, newspaper articles, databases, historical data, past and present flood plain data, and technical information for the plan. Collected data was forwarded to the RC for review and plan development. The committee held subsequent meetings to ensure that all information was correct and that all agencies and organizations input was included.

The Acting EMA Director led activities for mitigation planning countywide. The committee goals are to work in partnership with municipal partners toward a common mitigation strategy that significantly reduces vulnerability of natural disasters. Most natural threats overlap jurisdictions and are all susceptible to their affects. Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille share the same passion and desire for protecting and reducing risk through the mitigation projects. Specific risks and areas were identified through working relationships and data collection from all areas of the county and are identified in this plan.

SECTION VII. ADOPTION, IMPLEMENTATION AND MONITORING AND EVALUATION

Adoption Date

Table 1.6

Jurisdiction	Adoption Date
Washington County	*(will add after FEMA Approves)*
City of Davisboro	*(will add after FEMA Approves)*
Town of Deepstep	*(will add after FEMA Approves)*
Town of Harrison	*(will add after FEMA Approves)*
Town of Oconee	*(will add after FEMA Approves)*
Town of Riddleville	*(will add after FEMA Approves)*
City of Sandersville	*(will add after FEMA Approves)*
City of Tennille	*(will add after FEMA Approves)*

The plan was submitted to GEMA for review and then to FEMA for approval. Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille served as active participants in the planning process. Their respective governing bodies have formally

adopted the 2018 update after GEMA and FEMA approval. The plan is intended to be implemented into policy and to enhance state and federal recommendations for the mitigation of natural hazards in the following ways:

- Substantially reduce the risk of life, injuries, and hardship from the destruction of natural disasters.
- Create awareness to the public about the need for individual preparedness and about building safer, disaster resistant communities.
- Develop strategies for long-term community sustainability during community disasters.
- Develop governmental and business continuity plans that will continue essential private sector and governmental activities during disasters.

FEMA publishes many guidance documents for local governments for mitigating natural disasters. The plan fully recognizes, adopts, incorporates, and endorses the following principals.

- Develop a strategic mitigation plan for Washington County.
- Enforce current building codes.
- Develop incentives to promote mitigation.
- Incorporate mitigation of natural hazards into land use plans.
- Promote awareness of mitigation opportunities throughout Washington County community on a continual basis.
- Identify potential funding sources for mitigation projects.

The private sector is often an overlooked segment of the community during disasters. It is vital that this sector of a community is included in mitigation efforts that are consistent with state and federal recommendations as such:

- Develop mitigation incentives with insurance agencies and lending institutions.
- Encourage the creation of a business continuity plan for the continuance of commerce during disasters.
- Collaborate with businesses in effort to communicate with customers about the community hazards and possible solutions.

Individual citizens must be and educated on how to protect themselves and their property and made aware of the hazards they face. They must be shown mitigation is an important part of reducing loss of life and property in their community. The publics support is critical to the success of any mitigation effort. The Washington County Plan supports the following FEMA recommendations regarding individual citizens:

- Become educated on the hazards that your community and you may face.
- Become part of the process by supporting and encouraging mitigation programs that reduce vulnerability to disasters.
- That individual responsibility for safeguarding you and your family prior to a disaster is essential.

Chapter IV. Plan Integration and Maintenance details the formal process that will ensure that the plan remains an active and relevant document. The plan maintenance process includes monitoring and evaluating the plan annually, and producing a plan revision every five years. Additionally, Washington County will develop steps to ensure public participation throughout the plan maintenance process. Finally, this section describes how Washington County will

incorporate the mitigation strategies identified in this plan into other relevant planning documents such as the Washington County Joint Comprehensive Plan, Short-Term Work program (STWP) and Local Emergency Operations Plan (LEOP).

SECTION VIII. COMMUNITY DATA

Political Boundaries - Washington County

Washington County

GA Department of Community Affairs Region 7

Georgia

History: Washington County was an original county obtained from the cession of Creek Indian lands in 1783 and was the tenth county created in Georgia, formed on February 25, 1784. It was the first county in the nation to be named for President George Washington. Washington County is a rural county covering 684 square miles in eastern Georgia and is located 53 miles west of Augusta and 139 miles east of Atlanta. Washington County is one of 13 counties that comprise the Central Savannah River Area (CSRA). There are seven incorporated cities in Washington County: Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille.

Government: Washington County operates under a commission-based system of government in which five commissioners are elected to four-year terms. Other county officials are the County Attorney, Clerk of Superior Court, Probate Judge, Coroner, Magistrate Judge, Sheriff, and Tax Commissioner.

The Town of Davisboro, which operates a Mayor and Town Council-based system of government with five elected council members. Other officials charged with presiding over activities within the city are the City Clerk, Attorney, Police Chief, Fire Chief, City Engineer, and Wastewater Superintendent.

The Town of Deepstep, which operates a Mayor and Town Council-based system of government with five elected council members. Other officials charged with presiding over activities within the city are the City Clerk, Attorney, Fire Chief, and Water Superintendent.

The Town of Harrison, which operates a Mayor and Town Council-based system of government with five elected council members. Other officials charged with presiding over activities within

the city are the City Clerk, Attorney, Police Chief, Fire Chief, City Engineer, Water Superintendent, and Wastewater Superintendent.

The Town of Oconee, which operates a Mayor and Town Council-based system of government with five elected council members. Other officials charged with presiding over activities within the city are the City Clerk, Attorney, Police Chief, Fire Chief, City Engineer, and Water Superintendent.

The Town of Riddleville, which operates a Mayor and Town Council-based system of government with five elected council members. Other officials charged with presiding over activities within the city are the City Clerk, Attorney, Fire Chief, Water Superintendent, Code Enforcement Municipal Court Judge, and Municipal Court Clerk.

The City of Sandersville, which operates a Mayor and Town Council-based system of government with five elected council members. Other officials charged with presiding over activities within the city are the City Clerk, City Administrator, Attorney, Police Chief, Fire Chief, Water Superintendent, Wastewater Superintendent, Code Enforcement, Municipal Court Judge, and Municipal Court Clerk.

The City of Tennille, which operates a Mayor and Town Council-based system of government with six elected council members. Other officials charged with presiding over activities within the city are the City Clerk, City Administrator, Attorney, Police Chief, Fire Chief, Public Works Director, Municipal Court Judge, and Municipal Court Clerk.

Demographics: Presently, Washington County has a population of 21,187 persons. The two tables below provide a comparison of the jurisdictions and a historical prospective of the population trends within the county.

Table 1.7

Category	Washington County	Davisboro	Deepstep	Harrison	Oconee	Riddleville	Sandersville	Tennille
Population	21,187	2,010	131	489	252	96	5,912	1,539
Number of Households	7,547	168	51	161	82	40	2,339	625
Average Household Size	2.56	2.71	2.57	3.04	2.49	2.40	2.42	2.46
Race - White	45.0%	36.4%	99.2%	23.5%	65.5%	17.7%	36.6%	33.8%
Race - Black	52.7%	61.5%	0%	72.6%	33.7%	81.3%	60.7%	63.2%
Race - Hispanic	1.9%	7.0%	0%	2.5%	1.6%	0%	1.4%	1.2%
Race - Other	0.4%	0%	0.8%	1.4%	0%	1.0%	1.3%	1.8%
Median HH Income	$33,545	$32,203	$62,535	$36,479	$45,699	$24,853	$23,913	$21,647

Source: 2010 -US Census Bureau

Table 1.8

Community	Population				Growth (%)		
	1980	1990	2000	2010	1980-1990	1990-2000	2000-2010
Washington County	18,546	20,119	21,231	21,187	8.49%	5.53%	3.04%
Davisboro	539	547	441	549	1.49%	-19.38%	24.49%
Deepstep	7,001	6,852	6,828	6,778	-2.13%	-0.35%	-0.74%
Harrison	456	414	509	489	-9.20%	22.90%	-3.90%
Oconee	306	234	280	252	-23.50%	19.70%	-10.00%
Riddleville	154	79	124	96	-48.70%	57.00%	-22.60%
Sandersville	6,137	6,290	6,144	5,912	2.50%	-2.30%	-3.80%
Tennille	1,709	1,552	1,505	1,539	-9.20%	-3.00%	2.30%

Source: US Census Bureau

Economy: In the year 2016, the average weekly wage for employment sectors in Washington County was $675, compared to the statewide average of $961. The county's per capita personal income was $18,662. The current unemployment rate is 5.7 percent as of November 2017.

In 2016, the total labor force in Washington County was 7,203. Of the total work force, 68.7 percent were employed in the private service followed by 31.3 percent in the government sector. In 2016, 26.9 percent of the people were living below poverty level.

The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. The table below provides a list of jobs, number of establishments and jobs along with average weekly wages per job for 2016 in Washington County.

Table1.9

Annual Industry Distribution of Jobs and Average Wage in 2013 (NAICS)	Establishments	Jobs	Weekly Average Wage Per Job
Total Covered Employment and Wages	**377**	**6,737**	**675**
Total Private Sector	**329**	**4,629**	**716**
Total Government	**48**	**2,109**	**586**
Agriculture, forestry, fishing, hunting	8	73	900
Mining	6	201	1,023
Construction	21	300	714
Manufacturing	17	578	903
Wholesale trade	15	78	848
Retail trade	63	725	432
Transportation, warehousing	15	578	868
Utilities	1	*	*
Information	4	17	657

Annual Industry Distribution of Jobs and Average Wage in 2013 (NAICS)	Establishments	Jobs	Weekly Average Wage Per Job
Finance and Insurance	20	171	1,003
Real Estate, rental, leasing	9	22	568
Professional, Scientific, and Technical Services	16	139	947
Mgmt. of companies, enterprises	13	253	413
Management and Remediation Services	14	146	556
Educational services	2	*	*
Health care, social assistance	34	421	498
Arts, entertainment, recreation	2	*	*
Accommodation and food services	25	444	235
Other services, except public administration	41	105	480
Unclassified-Industry not assigned	13	11	845

Source: Georgia Department of Labor ** Industry group does not meet criteria for disclosure*

Climate: According to the National Weather Service, Central Georgia where Washington County is located experiences all four seasons. Washington County, GA, gets 47.3 inches of rain per year. The US average is 37. Snowfall is 0.8 inches. The average US city gets 25 inches of snow per year. The number of days with any measurable precipitation is 101. On average, there are 218 sunny days per year. The July high is around 90 degrees. The January low is 34. Our comfort index, which is based on humidity during the hot months, is a 30 out of 100, where higher is more comfortable. The US average on the comfort index is 44.

Physical Features: Washington County's consist of 680 square miles with 5.9 of these miles being water. The county is comprised of 435,200 acres with 398,761 (91.6 percent) acres dedicated to agricultural and forestry. Numerous wetlands, both small and large, dot the landscape of Washington County and the Oconee, Ohoopee, and the Ogeechee Rivers flow through the county. Slopes in Washington County range from nearly level to 17 %. The steepest slopes are along streambeds in the hilly area, which run south to north through the western side of the County.

Washington County straddles two geological regions – the Piedmont and the Coastal Plain. These regions are separated by the Fall Line, a geological boundary running parallel with the Appalachian Mountains from Alabama to New York and historically representing the end of navigable portions of rivers emptying into the Atlantic Ocean. Large deposits of kaolin, which have made the County famous, lie along the Fall Line. This natural resource has had an immeasurable impact on the history and the economy of the County. Below is a brief description of the land types in Washington County:

Southern Piedmont - Characterized by steep to gently rolling thin and well drained red soil with sandy loam surface layers over sandy clay to clay sub-soils. This area has fair to good suitability for building foundations and fair to poor suitability for septic tanks.

Southern Coastal Plain - Characterized by gently sloping well-drained sandy loam to sandy soils over friable and sandy clay loam to clay sub-soils that are sticky when wet. This area has fair to good suitability for residential development and commercial industry uses. A map of the soil types, wetlands and flood plains are located in Appendix A.
A survey of Washington County soil associations was conducted and approved by the Soil Conservation Service in 1985 and can be found at the following URL: https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/georgia/GA654/0/washingtonwilkinson.pdf A map of the soil types, wetlands and flood plains are located in Appendix A.

Transportation

Vehicle Traffic: Most streets in Washington County are classified as rural local roads. State highways 15, 24, 68, 88, 102, 231, 242, and 272 are major transportation routes in Washington County. Currently Washington County has no mass transit system.

Table 1.10

Mileage by Route and Road System Report 445 for 20146			
	Total Road Mileage (2016)	Lane Mileage	Vehicle Miles Traveled (VMT)
State Route	165.35	378	323,824
County Road	720.79	1,442	179,695
City Street	90.86	183	62,646
Total	**977**	**2,003**	**566,165**

Source: Georgia Department of Transportation, Office of Transportation Data, "445 Series Reports."

Public Transportation: Public transportation is available to County residents through the Section 18 Program and is not a widespread system found in urban areas. This federally funded program apportions transit assistance funds to rural areas and places having fewer than 50,000 residents, administered by the county and the Georgia Department of Transportation (GDOT). Public buses are to assist the elderly, providing transportation to senior citizens centers for congregate meals and to deliver meals. No public transportation system services county residents.

Rail Traffic: Rail companies provide crucial cargo transport for industries in Washington County. Many items and materials are too bulky or heavy to be shipped by truck and are moved by rail. Washington County is served by the Norfolk Southern and the Sandersville Railroad Company. Norfolk Southern is a class one railroad with over 14,000 miles of track operating in 20 states and Canada. The Sandersville Railroad Company, a heavy-duty freight railroad, began operations in 1893. The company offers competitive rates and customer oriented service and has choice industrial sites for economic development. Currently Washington County is not served by passenger rail.

Air Service: Washington County has its own local airport with a 5,000-foot lighted runway. The airport, which is located adjacent to the county industrial park, offers a full range of services. Airports located in Dublin and Milledgeville provide small craft aviation services. The nearest commercial air service is in Augusta, 70 miles away. Atlanta-Hartsfield International Airport, located in Atlanta approximately 128 miles from Sandersville, provides major commercial airline service.

Utilities

Electricity: Georgia Power, Washington EMC, and the City of Sandersville, provides electricity to the county.

Natural gas: Washington County is served by Southern Natural Gas pipeline with local industries served by Atlanta Gas Light.

Water and Sewer: Currently, in Washington County, there are several municipal water systems serving the cities and the surrounding areas, but no county-owned distribution system. Residents of the county depend on individual wells for water supply.

Sewer: No countywide sewerage system is available to residents. Due to rural settlement patterns and low-density development, most homes rely on septic tanks for sewage treatment.

Solid Waste: Waste collection is operated by the County, which maintains approximately 250 green boxes and several compactor trucks that pick up trash at green box locations on a regular basis. The county operates a landfill. Davisboro, Deepstep, Harrison, Oconee, and Riddleville contract with Washington County for solid waste collection from green boxes maintained by the county. Sandersville and Tennille contract with private haulers for curbside pickup. Once collected, the solid waste is transported to a transfer collection site in Milledgeville, Georgia and then taken to a landfill from there.

Communications: Washington County's landline phone service-provider is AT&T or Northland Cable Company. Washington County has many media outlets that consist of print, radio, and television. Local print media consists of *The Sandersville Progress* (which serves as the legal organ of the county) and *The Union Recorder* of Milledgeville. Washington County is served by 13 AM radio stations and 13 FM radio stations. All metro Macon television stations broadcast in Washington County. These are WGXA, WMAZ, and WAGT.

Fire and Emergency Services

Response: Enhanced 911 Service (E-911) is available 24-hours a day throughout the county and is operated and coordinated by the Washington County EMA. CodeRED® is a new County service by which County officials can notify residents by telephone about emergencies or critical community alerts. The system is capable of sending messages only to people affected or in the case of a widespread emergency like a tornado, to the County's entire population.

Fire and Rescue: Washington County is protected by organized fire departments within the cities of Sandersville and Tennille and eight widely spaced volunteer fire departments in the remainder of the county, Riddleville, Harrison, Oconee, Deepstep, Warthen, Davisboro and Ohoopee. The Georgia Forestry Commission maintains a county protection unit located about two miles west of Sandersville on Hwy 68 to respond to wildfires throughout the county. Emergency Medical Service is provided county-wide by the Washington County EMS.

Municipality/ Community	Fire Department	Pumper	Tanker	Brush	Ladder
Deepstep	13 volunteer firefighters, and 1 station	2	1	1	
Warthen	15 volunteer firefighters, and 1 station	2	1	1	
Davisboro	20 volunteer firefighters, and 1 station	2	2	1	1
Riddleville	19 volunteer firefighters, and 1 station	1	1	2	
Deepstep	13 volunteer firefighters, and 1 station	1	2	1	
Harrison	11 volunteer firefighters, and 1 station	1	1	1	
Ohoopee	8 volunteer firefighters, and 2 stations	1	2	1	
Oconee	16 volunteer firefighters, and 1 station	2	2		
Sandersville	1 full-time chief, 6 full time Firefighters, 24 volunteer firefighters, and 1 station	3	1	1	1
Tennille	19 volunteer firefighters, and 1 station	1	1	1	1

Law Enforcement: The Washington County Sheriff's Office is currently staffed with 21 uniformed officers, 5 investigators and 4 administrative personnel. The Sheriff's Office is located in Sandersville and contains three holding cells. The County Jail is 5,000 square feet. The county is also served by regional offices of the Georgia Bureau of Investigation and The Georgia State Patrol. Four of the municipal governments in the county have a police department as well.

Municipality	Police Department	
Davisboro	1 full-time chief of police, 8 part-time officers	3 vehicles
Sandersville	15 full-time and 4 part-time police officers, 1 full-time chief	16 vehicles
Tennille	1 part-time chief and 4 full-time officers	6 vehicles

CHAPTER II. NATURAL HAZARD, RISK AND VULNERABILITY (HRV)

The committee identified all natural hazards that could potentially affect the entirety Washington County, utilizing FEMA Worksheet #1 (Appendix D). Task A of Worksheet #1 instructed committee members to research newspapers and other historical records, existing community plans and reports, as well as internet websites to determine which hazards might occur in Washington County. Task B then narrowed the list to only hazards most likely to impact the county by reviewing hazard websites to determine if Washington County is located in a high-risk area.

Initially, the committee found that droughts, earthquakes, hurricanes, extreme heat, severe winter storms, tornados, wildfire, dam failure and windstorms might affect Washington County. However, the committee later concluded that some of these hazards did not pose a significant threat. Because of the planning process, the committee determined that five natural hazards pose a direct, measurable threat: flooding, drought, wildfire, severe weather (to include tornados, tropical storms, thunderstorm winds, lightning and hail), and winter storms. The committee profiled each of these hazards using FEMA worksheet #2 and #3a, which included obtaining a base map and recording hazard-event profile information. Of the five hazards mentioned, the entire County is exposed to four: severe weather, winter storms, wildfire and drought while flooding is isolated to select areas. Each of these potential hazards is addressed with relevant supporting data.

Chapter II. Section	Updates to Section
I. Natural Hazard Flood	Updated events, added critical facilities to GMIS, updated tax information. Recalculated hazard frequency data. Added information from Hazus-MH analyses
II. Dam Failure	Updated events, added critical facilities to GMIS, updated tax information. Recalculated hazard frequency data.
III. Natural Hazard Drought	Updated events, added critical facilities to GMIS, updated tax information. Recalculated hazard frequency data.
IV. Natural Hazard Wildfire	Updated events, added critical facilities to GMIS, updated tax information. Recalculated hazard frequency data.
V. Natural Hazard Severe Weather	Updated events, added critical facilities to GMIS, updated tax information. Hail was added to hazards. Recalculated hazard frequency data. Added information from Hazus-MH analyses.
VI. Natural Hazard Winter Storms	Updated events, added critical facilities to GMIS, updated tax information. Recalculated hazard frequency data.

SECTION I. FLOODING

A. Hazard Identification: Flood plains are relatively flat lands that border streams and rivers that are normally dry, but are covered with water during floods. The susceptibility of a stream to flooding is dependent upon several different variables. Among these are topography, ground saturation, rainfall intensity and duration, soil types, drainage, drainage patterns of streams, and vegetative cover. A large amount of rainfall over a short time period

can result in flash flood conditions. A small amount of rain can also result in floods where the soil is saturated from a previous wet period or if rain is concentrated in an area of impermeable surfaces such as large parking lots, paved roadways, etc. Topography and ground cover are contributing factors for floods where water runoff is greater in areas with steep slopes and little or no vegetation. The severity of a flood is usually measured in terms of depth of flooding.

Flooding occurs when the volume of water exceeds the ability of a water body (stream, river, or lake) to contain it within its normal banks. Floodplains serve three major purposes: Natural water storage and conveyance, water quality maintenance, and groundwater recharge. These three purposes are greatly inhibited when floodplains are misused or abused through improper and unsuitable land development. For example, if floodplains are filled to construct a building, valuable water storage and recharge areas are lost. This causes unnecessary flooding in previously dry areas and can damage buildings and other structures. Washington County, Davisboro, Deepstep, Oconee, Sandersville and Tennille participate and will continue to participate in the NFIP. Harrison and Riddleville do not participate in the NFIP but are studying the possibility of participation. Currently the cities of Harrison and Riddleville do not have building or code enforcement. They do not issue building permits. Until they can enforce the floodplain ordinance, they have opted not to participate. They are working with the County and the EMA Director to find a solution to the situation. The following table provides information about each jurisdictions participation level.

Jurisdication	Init FHBM Identified	Init. FIRM Identified	Curr. Eff. Map Date	Reg-Emer Date	Sanction Date
Washington County	None	07/22/10	07/22/10	05/22/2014	
Davisboro	None	07/22/10	07/22/10	08/02/2013	
Deepstep	None	07/22/10	07/22/10	09/07/2016	
Harrison	None	07/22/10	07/22/10		07/22/2011
Oconee	06/03/77	06/03/86	07/22/10(M)	06/03/86	
Riddleville	None	07/22/10	07/22/10		07/22/2011
Sandersville	08/09/74	09/01/86	07/22/10(M)	09/01/86	
Tennille	04/11/75	07/17/86	07/22/10(M)	07/17/86	

Source: FEMA Community Status Book

B. Hazard Profile: Severe flooding within Washington County is a relatively infrequent event. The county has 83 streams/rivers, 63 reservoirs and 10 lakes which makes the potential for flooding significant. Countywide, slopes range from level to 17 percent. The committee examined historical data from the NCEI, USGS, SHELDUS™, past newspaper articles and conducted interviews on the effects of past flooding events. In the last 67 years 12 flooding events were recorded, where two occurred in the unincorporated area of the County, and 10 were countywide. The table below is a result of information gathered from interviews, newspaper articles, and the NCEI and SHELDUS™ databases.

Date	Fatality	Inj	PrD	CrD	Event Narrative
10/01/1989	0	0	5.00K	0.00K	Flash Flood
10/12/1990	0	0	50.00K	0.00K	Flash Flooding
08/01/1992	0	0	8.5k		Flooding
08/17/1994	0	0	14.29K	0.00K	Flood
10/4/1995	0	0	0.00K	0.00K	Flood conditions were reported beginning at 1:00 a.m. and ending at 7:00 p.m., resulting in 18 hours of flash flooding.
02/04/1998	0	0	20.00K	0.00K	Another in a series of "El Nino" influenced storm systems moved from the southwest U.S. into the Gulf of Mexico. Rivers and creeks rose as much as 20 feet during the event, flooding homes and businesses near them
12/13/2008	0	0	0.00K	0.00K	Minor flooding of low land agricultural areas near the river occurs. Damage was limited to minor debris cleanup. Heavy rain of three to six inches rainfall resulted in several creeks and streams overflowing their banks and/or exceeding flood stage. Stream and river flooding continued for several days after the rain ended.
03/02/2009	0	0	0.50K	0.00K	Flooding was observed along the Oconee River at Oconee for several days. Damage was confined to minor debris removal.
04/03/2009	0	0	1.00K	0.00K	Flood
04/03/2009	0	0	1.00K	0.00K	The USGS gage on William Swamp Creek at Davisboro reached its flood stage of 10.0 feet. Minor flooding of woodland and fields along the creek were observed. Damage was confined to minor debris removal.
08/23/2013			2.0K	0.00K	Flash Flooding
07/08/2017			20.0K	0.00K	Flash Flooding

Source: NCEI, SHELDUS and The Sandersville Progress

Most flood events resulted in flash flooding which washed out several roads and wooden bridges. Data pinpointing the depth of floodwaters and exact locations of all washed out roads and bridges is limited. No data was available for the Cities of Deepstep, Harrison, Oconee, Riddleville, Sandersville, or Tennille. The table above provides the best available data.

While severe flooding within the county is a very infrequent event, there is a potential for flooding. Flash flooding is the most prominent flooding event as riverbanks overflow due to

rainfall. The GMIS flood hazard map a flood zone rating of three where floodplains are known and a flood zone rating of zero for area outside of the flood zones.

The magnitude of a major flood event could have approximately 20 percent of the county experiencing some damage from flooding. While data was collected looking at 67 years of data, frequency rate was calculated using a 20-year hazard cycle per guidance from GEMA. Based on a 20-year hazard cycle the chance of an annual flooding event occurring is:

- Washington County has a 35% annual chance of a flooding event.
- Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille have a 25% annual chance of a flooding event and
- The unincorporated parts of Washington County have a 35% annual chance of a flooding event. (*See Appendix A for Historical Event Tables, Critical Facilities Reports, and Flood Maps and Appendix D for Worksheet 3A and Hazard Frequency Tables).*

C. Assets Exposed to Hazard and Estimates of Potential Loss: For determination of assets exposed to risk, maps created from FEMA data and available parcel data were used. Based on FIRM, tax digests, and FEMA Worksheet #3a, it was determined that all or a portion of 1,624 structures/properties valued at $116,074,077 and a population of 1,513 are located in known flood prone areas within the County.

All 1,624 structures/properties have been identified by federal floodplain maps and/or parcel maps and not all structures/properties will experience damage from floods. The extent of each flood varies according to the amount of rainfall in a given area. If a complete loss of the 1,624 structures/properties located would result in $116,074,077 in damages assuming 100 percent loss, a 75 percent loss would represent $87,055,557, a 50 percent loss would represent $58,037,038, and a 25 percent loss would represent $29,018,519.

The table below shows the hazard scores assigned by the GMIS to critical facilities with replacement values content values and daily occupancy.

Jurisdiction	Flood Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Washington County	0	16	$57,824,593.00	$13,827,122.00	2,150	1,265
Washington County	1	12	$48,934,625.00	$12,705,000.00	5,826	1,882
Washington County	3	1	$297,000.00	$50,000.00	55	0
Davisboro	0	10	$8,818,000.00	$820,000.00	4	0
Davisboro	1	2	$225,000.00	$550,000.00	2	1
Davisboro	3	1	$500,000.00	$0.00	0	0
Deepstep	0	3	$422,143.00	$138,500.00	0	0
Deepstep	1	6	$1,058,944.00	$907,000.00	2	0
Harrison	0	4	$1,270,000.00	$0.00	0	0

Jurisdiction	Flood Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Harrison	1	3	$1,110,000.00	$310,000.00	3	0
Oconee	0	7	$4,861,792.00	$1,876,200.00	87	65
Riddleville	1	3	$1,030,000.00	$430,000.00	1	0
Sandersville	0	31	$14,416,134.00	$3,937,000.00	922	80
Sandersville	1	3	$2,772,600.00	$1,401,000.00	5	0
Sandersville	3	3	$56,000.00	$65,000.00	0	0
Tennille	0	10	$3,203,400.00	$355,000.00	13	4
Tennille	3	2	$6,250,000.00	$400,000.00	1	0
TOTAL		117	$153,050,231.00	$37,771,822.00	9,071	3,297

The GMIS has no repetitive flooding NFIP properties and one NFIP mitigated property. There are no estimate for future structures since future development will be limited in known floodplains. *(See Appendix A and Appendix D).*

FEMA Hazus-MH Version 2.2 SP1 was used to analyze a probabilistic risk assessment of a 1% annual chance riverine flood event (100-Year Flood) for the County. A copy of the report can be found in Appendix C. Land area covered by floodwaters of the base flood is identified as a Special Flood Hazard Area (SFHA). The flood risk assessment analyzed at risk structures in the SFHA. The results of the Riverine 1% Flood Scenario revealed that buildings are vulnerable to flooding from events equivalent to the 1% riverine flood. The economic and social impacts from a flood of this magnitude can be significant. The analysis generated information to building loss, essential facility loss, food and shelter requirements and debris. The results of this scenario are as follows:

Washington County Riverine 1% Building Losses

Occupancy	Total Buildings in the Jurisdiction	Total Buildings Damaged in the Jurisdiction	Total Building Exposure in the Jurisdiction	Total Losses to Buildings in the Jurisdiction	Loss Ratio of Exposed Buildings to Damaged Buildings in the Jurisdiction
Davisboro					
Residential	217	12	$21,170,900	$380,096	1.80%
Oconee					
Residential	97	1	$13,092,350	$10,816	0.08%
Sandersville					
Residential	2,190	132	$371,495,760	$3,217,056	0.87%
Industrial	203	16	$195,257,230	$293,830	0.15%
Commercial	366	30	$364,142,253	$1,043,632	0.29%
Tennille					
Industrial	19	3	$19,317,231	$66,942	0.35%
Commercial	61	10	$24,015,502	$182,565	0.76%
Government	1	1	$98,490	$4,959	5.03%
Residential	737	17	$103,972,806	$333,623	0.32%
Unincorporated					

Residential	5,658	33	$593,232,761	$864,486	0.15%
Commercial	84	2	$42,876,948	$129,651	0.30%
Industrial	56	5	$27,187,096	$216,535	0.80%
County Total					
	9,689	262	$1,775,859,327	$6,744,191	

- **Essential Facility Losses:** The analysis identified the Tennille Police Station being subject to damage and may no longer be able to serve the community.
- **Flood Shelter Requirements:** The scenario estimates 335 households are subject to displacement. Displaced households represent 1,005 individuals, of which 422 may require short-term publicly provided shelter.
- **Flood Debris:** Hazus-MH estimates that an approximate total of 4,259 tons of debris might be generated by the flood. The model breaks debris into three general categories:
    - Finishes (dry wall, insulation, etc.) – 1,686 tons generated;
    - Structural (wood, brick, etc.) – 967 tons generated; and
    - Foundations (concrete slab, concrete block, rebar, etc.) – 1,606 tons generated.

D. Land Use and Development Trends: The Joint County-City Comprehensive Plan 2016-2026 present future development scenarios for Washington County and its municipalities is in the form of "character areas". Characters areas not only identify existing and future land uses that may be appropriate for a particular area, they can highlight a variety of other factors such as the form, function and style of new development; existing features that should be incorporated into future development scenarios; and, relationships to adjacent development. The conservation character areas of protected open space include wetlands, floodplains, groundwater recharge areas, small water supply watersheds, and steep slopes. The environmentally sensitive nature lands located within this character area are unsuitable for most development. These areas include water supply watersheds, protected river corridors, wildlife management areas, and other environmentally sensitive areas. The plan recommends that these lands could be best-utilized in the future as open space and in conjunction with other character areas to create a network of trails or greenways that provide residents with recreation and transportation options.

- Promote preservation of watershed areas' natural features
- Require buffer areas of streams and floodplains while retaining native vegetation
- Purchase of properties and or easements in the Usry Pond watershed
- Limit residential density in Usry Pond watershed
- Promote passive activity & development along stream and corridors (trails, benches, picnic tables, outdoor classrooms, etc.)
- Develop bicycle and pedestrian "greenway" corridors while creating linkages to and between adjacent development and properties. *(See Appendix B).*

E. Multi-Jurisdictional Concerns: During a natural hazard, it is imperative that all emergency personal can communicate with each other throughout the entire planning area. The county and its jurisdictions have numerous dead spots throughout the area due to topography and lack of adequate communication equipment. The county and its emergency personnel are dependent on the private sector for towers to use for signals. If these towers are ever

removed, the county will be without any adequate means to transmit signals. The county and all jurisdictions are aware of the need to develop communication capabilities that will serve their county.

Since flooding has the potential to affect all of Washington County, any mitigation steps taken related to flooding should be undertaken on a countywide basis and include all incorporated jurisdictions.

F. Hazard Summary: In the last 67 years 12 flooding events were recorded, where two occurred in the unincorporated area of the County, and 10 were countywide. These flooding events were the result of heavy rains. The rainfall resulted in flash flooding, washed out several roads and downed trees and power lines.

The hazard frequency table calculates a 35 percent chance of an annual flooding event countywide. Hazard frequency tables can be found in Appendix D. Severe flooding, although relatively rare in occurrence, has the potential to inflict significant damage in Washington County. Mitigation of flood damage requires the community to know where flood-prone areas are, what roads and bridges may be affected, and which facilities fall below anticipated flood levels. The committee recognized the potential for losses caused by flooding and identified it as a hazard requiring mitigation measures.

Based on tax data, parcel and flood maps, all or a portion of 1,624 known structures/properties valued at approximately $116 million and a population of 1,513 are located in known floodplains. The committee identified specific mitigation goals, objectives and action items related to flooding, which can be found in Chapter III, Section I.

SECTION II. DAM FAILURE

A. Hazard Identification: Dam failures and incidents involve unintended release or surges of impounded water. They can destroy property and cause injury and death downstream. While they may involve the total collapse of a dam, that is not always the case. Damaged spillways, overtopping of a dam or other problems may result in a hazardous situation. Dam failures may be caused by structural deficiencies in the dam itself. Dam failures may also come from other factors including but not limited to debris blocking spillways, flooding, earthquakes, improper operation and vandalism. Dam failures are potentially the worst flood events. When a dam fails, a large quantity of water is suddenly released downstream, destroying anything in its path and posing a threat to life and property.

Dams are classified into three categories:

- High Hazard – Dams where failure or disoperation will probably cause loss of human life.
- Significant Hazard – Dams where failure or disoperation will probably not result in loss of life, but can cause economic loss, environmental damage, and disruption of lifeline facilities or other concerns.
- Low Hazard – Dams where failure or disoperation will probably not result in loss of life and cause only low economic and/or environmental loss.

B. Hazard Profile: A review of the 2013 National Inventory of Dams shows that Washington County has 55 dams with 54 classified as low hazard and one classified as high hazard. A high hazard classification is based upon the finding that a probable loss of life would occur in the event of a dam failure. While there has never been a reported dam failure event in to date, the committee felt that it was important to address the issue. If the high hazard dam fails, there is the potential for loss of life and property and economic losses. The remaining 53 dams are low hazard were potential losses are limited to minimal property damage. Based on the map of the dams found in Appendix A there are 49 dams located in the unincorporated area of the county, three in Sandersville, one in Deepstep and one in Harrison. A complete table of the dams can be found in Appendix A by classification and jurisdiction.

Based on interviews and best available data a dam failure has not occurred within the last 62 years therefore the estimated annual probability of a future event is less than one percent. Due to the lack of available data, a precise calculation to determine the probability of an annual dam failure event cannot be determined without further study (*See Appendix A Section II and Appendix D).*

C. Assets Exposed to Hazard and Estimate of Potential Losses: The number of dams posing potential loss of life hazards to Washington County residents and the number of residents living downstream from these potentially hazardous dams is unknown at this time. Based on best available data, the cities of Tennille, Davisboro, Oconee and Riddleville appear not to be at risk due to dam failure. The data is not available at this time for the committee to determine what assets are exposed to risk due to dam failure in the unincorporated areas of Washington County, Harrison and Deepstep. A review of the high hazard dam along with parcel data for the City of Sandersville has the potential to affect around 30 residential properties valued at approximately $780,395 with an estimated population of 72.

Projected changes in land use based on the county's multi-jurisdictional comprehensive plan, has minimal or no change to land use within the incorporated jurisdictions. The greatest change in land use and future development has a decrease in forestland that will be converted to residential. Because it is impossible to determine where future residents will move in the unincorporated areas of the county, vulnerability in terms of future buildings, infrastructure and critical facilities is not known at this time. It can be surmised that this will bring an increase in population and efforts must be made to ensure that new homes are not built downstream of where a dam break may occur. Land use tables and projections can be found in Appendix B. A dam break analysis study is recommended in Chapter III, Section II to determine the exact assets exposed to risk as a result of a dam failure.

The potential losses due to dam failure flooding are unknown and cannot be estimated at this time. Using the GMIS critical facilities reports have all critical facilities with a replacement value of $153,050,231. There is slightly more than $1.9 billion worth of assets with potential loss countywide (*See Appendix A and Appendix D).*

D. Land Use and Development Trends: Currently the county has no guidelines that address development in areas surrounding dams.

E. Multi-Jurisdictional Concerns: All of Washington County can potentially be affected by dam failure event. Any mitigation steps taken related to dam failure should be undertaken on a countywide basis and include all incorporated jurisdictions.
During a natural hazard, it is imperative that all emergency personal can communicate with each other throughout the entire planning area. The county and its jurisdictions have numerous dead spots throughout the area due to topography and lack of adequate communication equipment. The county and its emergency personnel are dependent on the private sector for towers to use for signals. If these towers are ever removed, the county will be without any adequate means to transmit signals. The county and all jurisdictions are aware of the need to develop communication capabilities that will serve their county.

Another concern is the lack of available data for the county and individual jurisdictions on hazard events. A database needs to be created and maintained that provides information on flooding events that occur. This database should include information such as location (road names, neighborhoods, GPS coordinates, etc.), damages reported, power outages, road closures, county and city personal that are dispatched to the area, etc.

F. Hazard Summary: Dam failures and incidents involve unintended release or surges of impounded water. They can destroy property and cause injury and death downstream. While they may involve total collapse of a dam, that is not always the case. While there has never been a reported dam failure event in Washington County to date, the committee felt it was important to address the issue because of the 55 dams and one is classified high hazard. This high hazard dam located in the City of Sandersville has the potential to affect around 30 residential properties valued at approximately $780,395 with an estimated population of 72. The committee recognized the potential for losses caused by dam failure and identified it as a hazard requiring mitigation measures. To summarize, there are approximately 46,840 structures/properties in the county totaling more than $1.9 billion with a population of 21,187. The committee identified specific mitigation goals, objectives and action items related to dam failure, which can be found in Chapter III, Section II.

SECTION III. DROUGHT

A. Hazard Identification: The committee reviewed historical data from the Palmer Drought Index, NCEI, DNR, USDA and GFC in researching drought conditions. Drought conditions are identified by a prolonged period of moisture deficiency. Climatologists and hydrologists use five indicators of drought: rainfall, soil moisture, stream flows, lake levels and groundwater level. Drought conditions affect the cultivation of crops as well as water availability and water quality. Drought is also a key factor in wildfire development. Wildfire will be addressed in a separate HRV.

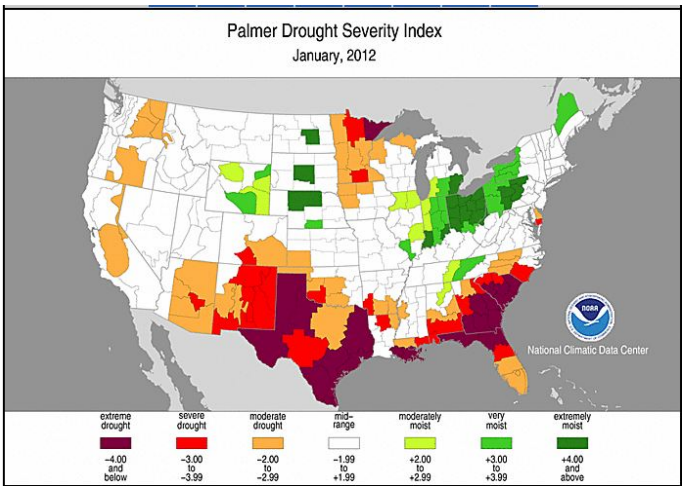
B. Hazard Profile: Drought is not spatially defined and has the potential to affect the entire planning area equally. Washington County's consist of 680 square miles with 5.9 of these miles being water. The county is comprised of 435,200 acres with 398,761 (91.6 percent) acres dedicated to agricultural and forestry. According to the USDA 2012 Census of Agriculture 9,011 heads of livestock. Agricultural losses due to drought are the primary

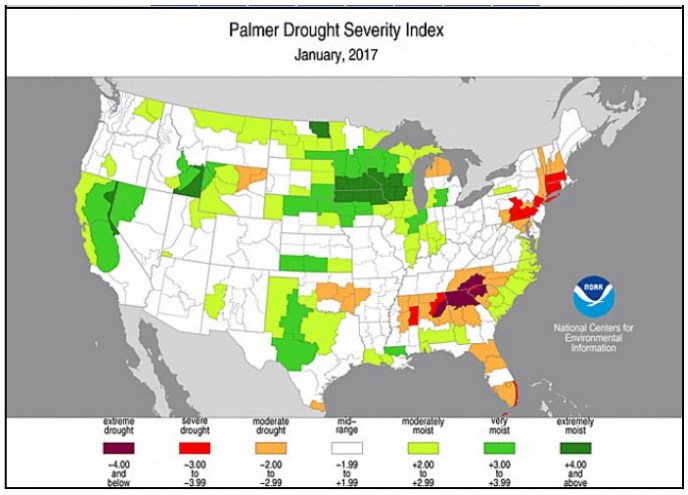
losses. No critical facilities have sustained any damage or functional downtime due to dry weather conditions.

According to the NCEI and SHELDUS, there have been 30 reported drought events in Washington County in the last 67 years. The Palmer Index is most effective in determining long-term drought, a matter of several months, and is not as good with short-term forecasts (a matter of weeks). The Palmer Index uses a zero abnormally dry, and drought is shown in terms of minus numbers; for example, minus two is severe drought, minus three is extreme drought, and minus four is exceptional drought.

NCEI data for surrounding counties and a review of The Palmer Index (from https://www.NCEI.noaa.gov/temp-and-precip/drought/historical-palmers/) reveals there have been 30 drought events since 1997. One of the longest running droughts in recent history began in January 2012 and ended in January 2013. The County was in severe drought conditions from January to July of 2012 and in extreme drought conditions from Augusta 2012 to January 2013. The latest drought event occurred from August 2016 to December 2016. The drought of 2016 the county ranged between a -3.00 (severe drought) and a -4.00 (extreme drought) on the Palmer Index. The average based on historical data is a -3.00 on the Palmer Index.

The maps below show drought conditions for January 2012 and January 2017.



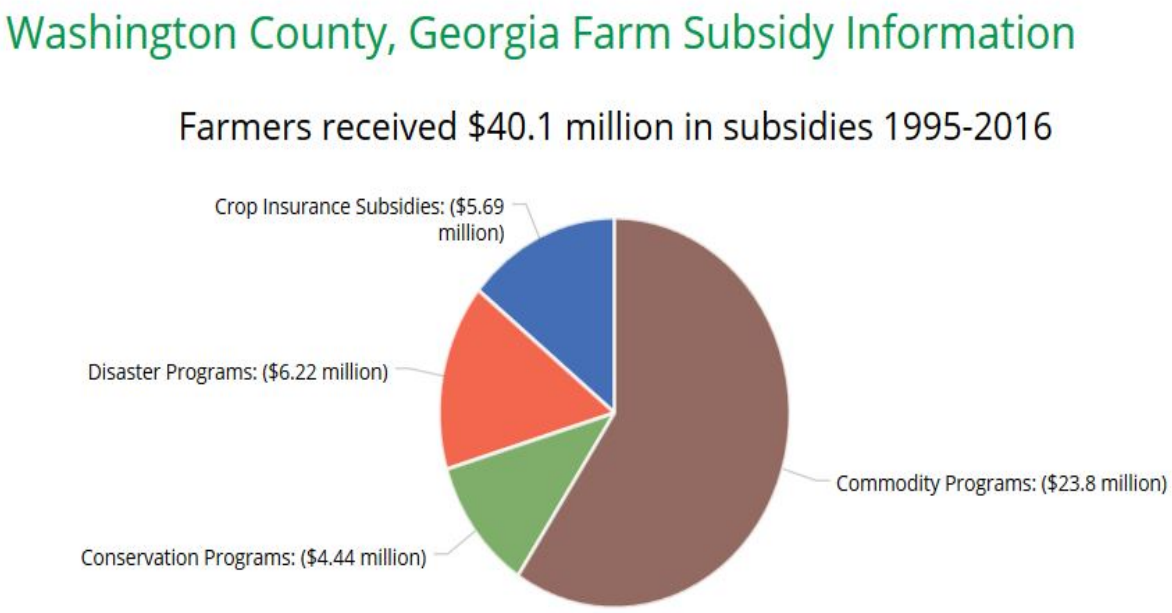


Based on the weekly data from the US Drought Monitor (http://droughtmonitor.unl.edu/MapsAndData/MapsandDataServices/StatisticalData.aspx) from January 2000 to December 2017 the county has experienced the following drought conditions:

- 176 weeks where all or a portion of the county has experienced of D0 - Abnormally Dry;
- 164 weeks where all or a portion of the county has experienced of D1 - Moderate Drought;
- 91 weeks where all or a portion of the county has experienced levels of D2 - Severe Drought;

- 95 weeks where all or a portion of the county has experienced levels of D3 - Extreme Drought; and
- 54 weeks where all or a portion of the county has experienced levels of D4 - Exceptional Drought. (US Drought Monitor and Extent Tables can be found in Appendix A.)

According to the USDA Farm Subsidies Database, there has been a total of $ $40.1 million in disaster assistance from 1995-2016. The pie chart below depicts amounts and type of payments.



https://farm.ewg.org/progdetail.php?fips=13189&progcode=total_dis

Historical data is only for the county as a whole. A severe, prolonged drought would mainly affect the 90 percent of the county that makes up the timber and agriculture business. This could result in loss of crops, livestock and create the conditions for a major wildfire event. This would also have an impact on the incorporated cities, as water restrictions would be enforced. Based on a 20-year hazard cycle history there is a 150 percent chance of an annual drought event for the county and all six jurisdictions *(See Appendix D for Hazard Frequency Tables.).*

C. Assets Exposed to Hazard and Estimate of Potential Losses: Drought conditions typically pose little or no threat to structures; however, fires can occur because of dry weather. The greatest threat to assets in the county is to forestry and agricultural properties and livestock. No damage to critical facilities is anticipated because of drought conditions. Crop damage cannot be accurately quantified due to several unknown variables: duration of the drought, temperatures during the drought, severity of the drought, different crops require different

amounts of rainfall, and different growing seasons. Based on FEMA Worksheet #3a the potential loss in agricultural and forestry properties for each jurisdiction is:

- Sandersville has 49 agricultural properties valued at approximately $4.8 million with estimated population of 16;
- Tennille has eight agricultural/forestry properties valued at $555,800 with an estimated population of four;
- Oconee has 18 agricultural/forestry properties valued at approximately $ 1.7 with an estimated population of 5;
- Davisboro has 23 agricultural/forestry properties valued at $796,317 with an estimated population of nine;
- Deepstep has 75 agricultural/forestry properties valued at approximately $1.5 million with an estimated population of 15;
- Harrison has 20 agricultural/forestry properties valued at $764,158 with an estimated population of seven;
- Riddleville has 57 agricultural/forestry properties valued at approximately $ 1.5 with an estimated population of 16;
- Unincorporated Washington County has 9,277 agricultural/forestry properties valued at approximately $480 million with an estimated population of 285.

There are 9,527 agricultural/forestry properties in Washington County with a value of approximately $492 million and a population of 357 that are at the greatest risk due to a drought event *(See Appendix A for Historical Event Tables, Drought Extent Tables and Drought Maps and Appendix D for Worksheet 3A and Hazard Frequency Tables).*

D. Land Use and Development Trends: Washington County currently has no land use or development trends related to drought conditions. When drought conditions do occur, all jurisdictions follow the restrictions set forth by the Georgia DNR Drought Management Plan and the Statewide Outdoor Water Use Schedule. The Georgia Water Stewardship Act went into effect statewide on June 2, 2010. It allows daily outdoor watering for purposes of planting, growing, managing, or maintaining ground cover, trees, shrubs, or other plants only between the hours of 4 p.m. and 10 a.m. by anyone whose water is supplied by a water system permitted by the Environmental Protection Division.

The following outdoor water uses also are allowed daily at any time of the day by anyone:

- Commercial Agriculture
- Alternative sources of water (grey water, rainwater, condensate, etc.)
- Irrigation of food gardens
- Irrigation of newly installed or reseeded turf for the first 30 days
- Drip irrigation or soaker hoses
- Hand watering with a shut off nozzle
- Water from a private well
- Irrigation of plants for sale
- Irrigation of athletic fields, golf courses or public recreational turf
- Hydroseeding

Outdoor water use for any purposes other than watering of plants, such as power washing or washing cars, is still restricted to the current odd/even watering schedule.

- Odd-numbered addresses can water on Tuesdays, Thursdays and Sundays.
- Even-numbered and unnumbered addresses are allowed to water on Mondays, Wednesdays and Saturdays.

Projected changes in land use based on the joint comprehensive plan, has minimal or no change. Limited growth or new development is expected in the County. The vulnerability in terms of future buildings, infrastructure and critical facilities located in the identified hazard areas is not known since there is no planned or approved future development. Thus, it is impossible to determine vulnerability in terms of future buildings, infrastructure and critical facilities. Current and future land-use tables, maps and projections are in Appendix B.

E. Multi-Jurisdictional Concerns: Agricultural losses associated with drought are more likely to occur in the rural, less concentrated areas of the county. Although all incorporated jurisdictions are less likely to experience drought related losses, they should not be excluded from mitigation considerations. Drought creates a deficiency in water supply that affects water availability and water quality. Droughts can and have severely affected municipal and industrial water supplies, agriculture, stream water quality, recreation at major reservoirs hydropower generation, navigation, and forest resources.

F. Hazard Summary: Since drought is not spatially defined it affects the entire planning area equally. Droughts do not have the immediate effects of other natural hazards, but sustained drought can cause severe economic stress to not only the agricultural interests in Washington County, but to the entire State of Georgia. The potential negative effects of sustained drought are numerous. ***Historical data is available only for the county as a whole.*** Based on a 20-year cycle hazard history along with available data there is a 120% chance of an annual drought event in Washington County. In addition to an increased threat of wildfires, drought can affect municipal and industrial water supplies, stream-water quality, water recreation facilities, hydropower generation, as well as agricultural and forest resources.

In summary, for Washington County, there are 9,527 agricultural/forestry properties valued at approximately $492 million and include 9,011 head of livestock and an estimated population of 357 that have the greatest potential to be damaged by drought. There is a population of 21,187 and approximately 46,840 structures/properties in the county with a value just slightly more than $1.9 billion that could be affected if wildfires break out because of drought conditions. Mitigation Goals and Objectives concerning droughts can be found in Chapter III., Section III.

SECTION IV. WILDFIRE

A. Hazard Identification: A wildfire is any uncontrolled fire occurring on undeveloped land that needs fire suppression. The potential for wildfire is influenced by three factors: the presence of fuel, the area's topography and air mass. There are three different classes of wildland fires. A surface fire is the most common type and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire is usually started by lightning

and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildfires are usually signaled by dense smoke that fills the area for miles around. Wildfires by lightning have a very strong probability of occurring during drought conditions. Drought conditions make natural fuels (grass, brush, trees, dead vegetation) more fire-prone.

B. Hazard Profile: The County is comprised of 435,200 acres with 398,761 (91.6 percent) acres dedicated to agricultural and forestry. Given the right weather conditions and variables, wildfire, due to natural causes, creates a potential threat to the lives of residents and property in the planning area. The NCEI has never reported a significant wildfire event in Washington County.

The committee reviewed historical data from the Georgia Forestry Commission, which is not found in the NCEI database, to research wildfire events in Washington County. The GFC provides wildfire data on manmade and natural wildfire occurrences for the county as a whole and not for individual jurisdictions. This plan will address only natural disasters. According to Georgia Forestry data, from 1957 to 2017, there have been 3,845 fire events burning a total of 25,834 acres for an average extent of 6.72 acres. Of these 3,845 wildfire events, 262 were a result of lightning strikes. Wildfires because of lightning strikes resulted in the burning of 3,485 acres. The largest three wildfires as a result of lightning occurred in 2002, 2008 and 2012, burning 366.75, 366.49 and 497.40 acres respectively. Based on best available data the 262-wildfire events because of lightning occurred in the unincorporated areas of the county.

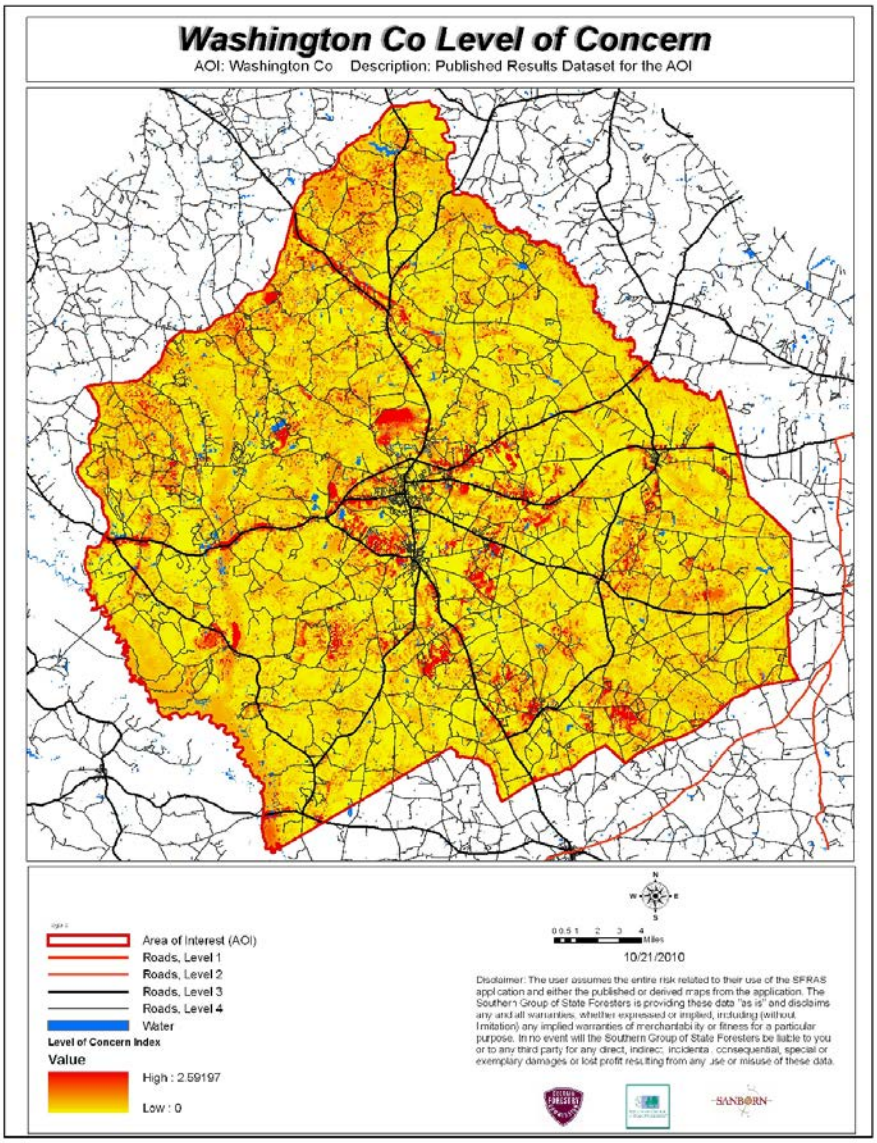
While data was collected looking at 60 years of data, frequency rate was calculated using a 20-year hazard cycle per guidance from GEMA. There were 262 lightning wildfire events during the 20-year hazard cycle predicting a 650 percent chance of an annual wildfire due to a lightning. The drier the condition the more susceptible the county is to wildfire (*See Appendix D).*

GEMA's mapping system assigned the following wildfire hazard scores for each jurisdiction:

- Hazard score of two (low wildfire risks)
  - Unincorporated areas of the county – approximately 5%
  - Sandersville - approximately 50% of the city
  - Tennille - a minuscule area in the northeastern section of the city
- Hazard score of one (very low wildfire risk)
  - Unincorporated areas of the county – approximately 60%
  - Sandersville - approximately 5% of the city
  - Davisboro – approximately 50% of the city
  - Deepstep – approximately 20%
  - Harrison – approximately 50% of the city
  - Riddleville – entire city
  - Oconee – entire city
  - Tennille - a minuscule area in the southwestern section of the city
- Hazard score of zero (no houses, agriculture, water, or city)
  - Unincorporated areas of the county – approximately 35%

- Sandersville - approximately 45% of the city
- Tennille – approximately 99% of the city
- Davisboro – approximately 50% of the city
- Deepstep – approximately 80%
- Harrison – approximately 50% of the city

While the GMIS map has the County with a Hazard Score of 2 (low wildfire risk) to a Hazard Score of Zero ((no houses, agriculture, water, or city), the data from the GFC Community Wildfire Protection Plan (CWPP) has Washington County in the "high" hazard range. The map below shows the areas by level of concern. Also this plan is only looking at natural disasters while the CWPP looks at all wildfire including manmade.



C. Assets Exposed to Hazard and Estimate of Potential Losses: While wildfires are more likely to occur in the county outside of the incorporated areas. The committee concluded that wildfires present a threat to all existing buildings, infrastructure and critical facilities since wildfires can spread throughout the county and into the urban areas. Damages due to a wildfire event are more likely to occur in areas of the county where forestry and woodland are prevalent but does have the potential to spread into the incorporated areas and cause extensive damage. FEMA Worksheet #3a located in Appendix A shows the number and types of buildings found in Washington County, as well as the value of these structures/properties and their population. The following assets by jurisdiction could potentially be exposed to wildfire hazard.

Jurisdiction	Number of Structure/ Properties	Value $	Population
Washington County (Unincorporated)	32,316	$1,233,819,648	10,758
Davisboro	825	$15,510,615	2,010
Deepstep	428	$10,119,795	131
Harrison	732	$7,771,213	489
Oconee	565	$10,955,739	252
Riddleville	278	$4,735,247	96
Sandersville	9,281	$604,164,088	5,912
Tennille	2,415	$67,575,030	1,539
TOTAL FOR COUNTY	46,840	$1,954,651,375.00	21,187

Source: Washington County Tax Assessor

The following table reveals all critical facilities in the county by jurisdiction, number of facilities, hazard score, replacement value, and daily occupancy exposed to wildfire hazard. A complete breakdown of each jurisdiction by hazard can be found in Appendix A.

Jurisdiction	Wildfire Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Washington County	0	7	$45,016,157.00	$5,062,122.00	1,382	980
Washington County	1	9	$10,336,000.00	$7,200,000.00	2,230	2,017
Washington County	2	13	$51,704,061.00	$14,320,000.00	4,419	150
Davisboro	0	8	$2,443,000.00	$870,000.00	6	1
Davisboro	1	5	$7,100,000.00	$500,000.00	0	0
Deepstep	0	9	$1,481,087.00	$1,045,500.00	2	0
Harrison	0	1	$60,000.00	$250,000.00	0	0
Harrison	1	6	$2,320,000.00	$60,000.00	3	0
Oconee	1	7	$4,861,792.00	$1,876,200.00	87	65
Riddleville	1	3	$1,030,000.00	$430,000.00	1	0
Sandersville	0	11	$7,171,000.00	$2,040,000.00	758	0

Jurisdiction	Wildfire Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Sandersville	2	26	$10,073,734.00	$4,863,000.00	169	80
Tennille	0	12	$9,453,400.00	$755,000.00	14	4
TOTAL		117	$153,050,231.00	$39,271,822.00	9,071	3,297

According to FEMA Worksheet #3A, there are 46,840 structures/properties with a population of 21,187 with a value of slightly more than $1.9 billion worth of assets countywide. If a wildfire started, it is not likely that all of these structures/properties would be affected. *(See Appendix A for, Historical Event Tables, Critical Facilities Reports and Wildfire Map, and Appendix D for Worksheet 3A and Hazard Frequency Tables).*

D. Land Use and Development Trends: Washington County currently has no land use or development trends related to wildfire conditions. Land use codes do provide for fire protection to any proposed major and minor developments connected to the public water supply system, and minimum fire flows shall be computed based on standards promulgated by the Washington County Fire Services. For those proposed developments that will not have immediate access to the public water supply system, such standards and computations should be based on the National Fire Protection Association *Standards on Water Supply for Suburban and Rural Fire Fighting*.

E. Multi-Jurisdictional Concerns: Wildfire has the potential to affect the entire county. As a result, all mitigation steps taken related to wildfire should be undertaken by Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille. Also during a natural hazard, it is imperative that all emergency personal can communicate with each other throughout the entire planning area. Another concern is the lack of available data for the county and individual jurisdictions. A database needs to be created and maintained that provides information on all past and future occurring wildfire events.

F. Hazard Summary: The County is comprised of 435,200 acres with 398,761 (91.6 percent) acres dedicated to agricultural and forestry. Given the right weather conditions and variables, wildfire due to natural causes creates a potential threat to the lives and property of residents in the planning area. According to Georgia Forestry data, from 1957 to 2017, there have been 3,845 fire events burning a total of 25,834 acres for an average extent of 6.72 acres. Of these 3,845 wildfire events, 262 were a result of lightning strikes. While data was collected looking at 60 years of data, frequency rate was calculated using a 20-year hazard cycle per guidance from GEMA. Based on a 20-year hazard cycle there is a 650% chance of an annual fire due to lightning strike.

The GMIS has 39 critical facilities with a wildfire hazard score of two (low probability) and 30 critical facilities have a hazard score of one (very low probability). These 69 critical facilities having a wildfire hazard score greater than zero have an estimated potential loss of $87,425,597. The loss for all critical facilities is $153,050,231. According to FEMA Worksheet #3a, there are 46,840 structures/properties with a population of 21,187 with a

value of slightly more than $1.9 billion worth of assets countywide. Mitigation Goals and Objectives concerning wildfires can be found in Chapter III, Section IV.

SECTION V. SEVERE WEATHER, INCLUDING TORNADOS, TROPICAL STORMS THUNDERSTORM WINDS, LIGHTNING, AND HAIL

A. Hazard Identification: The committee reviewed historical data from the county's own weather database, the NCEI, SHELDUS™, newspapers and citizen interviews in researching the past effects of severe weather. The month of February marks the beginning of the severe weather season in the South, which can last until the month of August. Five types of severe weather were identified by the mitigation team: (1) tornados, (2) tropical storms, (3) thunderstorm winds, (4) lightning and (5) hail.

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm or the result of a hurricane and is produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. Tornados are among the most unpredictable and destructive of weather phenomena and can strike at any time of the year if the essential conditions are present. The damage from a tornado is a result of the high wind velocity and wind-blown debris. The positions of the subtropical and polar jet streams often are conducive to the formation of storms in the Gulf region. The table below shows the original Fujita Scale and the Enhanced Fujita Scale (in use since 2007) to rate the intensity of a tornado by examining the damage caused by the tornado after it has passed over a manmade structure.

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	**EF Number**	**3 Second Gust (mph)**
0	40-72	45-78	0	65-85	**0**	**65-85**
1	73-112	79-117	1	86-109	**1**	**86-110**
2	113-157	118-161	2	110-137	**2**	**111-135**
3	158-207	162-209	3	138-167	**3**	**136-165**
4	208-260	210-261	4	168-199	**4**	**166-200**
5	261-318	262-317	5	200-234	**5**	**Over 200**

Source: NOAA

The second type of severe weather is tropical storms. Tropical Storms are an organized system of strong thunderstorms with a defined surface circulation and maximum sustained winds of 39–73 MPH (34–63 knots). In this area, they generally occur due to a hurricane or tropical system that has come inland.

The third severe weather event, thunderstorm winds, can cause death and injury, power outages, property damage, and can disrupt telephone service, severely affect radio communications and surface/air transportation that may seriously impair the emergency management capabilities of the affected jurisdictions.

Thunderstorm winds are winds that arise from convection (with or without lightning), with speeds of at least 50 knots (58 mph), or winds of any speed producing a fatality, injury, or

damage. Severe thunderstorms develop powerful updrafts and downdrafts. An updraft of warm, moist air helps to fuel a towering cumulonimbus cloud reaching tens of thousands of feet into the atmosphere. A downdraft of relatively cool, dense air develops as precipitation begins to fall through the cloud. Winds in the downdraft can reach in excess of 100 miles per hour. When the downdraft reaches the ground, it spreads out forming a gust front: the strong wind that kicks up just before the storm hits. As the thunderstorm moves through the area, the full force of the downdraft in a severe thunderstorm can be felt as horizontal, straight-line winds with speeds well over 50 miles per hour. Straight-line winds are often responsible for most of the damage associated with a severe thunderstorm. Damaging straight-line winds occur over a range of scales. At one extreme, a severe single-cell thunderstorm may cause localized damage from a microburst, a severe downdraft extending not more than about two miles across. In contrast, a powerful thunderstorm complex that develops as a squall line can produce damaging winds that carve a path as much as 100 miles wide and 500 miles long.

The fourth severe weather event is lightning. Lightning results from the buildup and discharge of electrical energy between positively and negatively charged areas. Rising and descending air within a thunderstorm separates these positive and negative charges. Water and ice particles also affect charge distribution. A cloud-to-ground lightning strike begins as an invisible channel of electrically charged air moving from the cloud toward the ground. When one channel nears an object on the ground, a powerful surge of electricity from the ground moves upward to the clouds and produces the visible lightning strike. Lightning often strikes outside of heavy rain and may occur as far as 10 miles away from any rainfall.

The final severe weather event is hail. Hailstones are created when strong rising currents of air called updrafts carry water droplets high into the upper reaches of thunderstorms where they freeze. These frozen water droplets fall back toward the earth in downdrafts. In their descent, these frozen droplets bump into and coalesce with unfrozen water droplets. Then they are carried back up high within the storm where they refreeze into larger frozen drops. This cycle may repeat itself several times until the frozen water droplets become so large and heavy that the updraft can no longer support their weight. Eventually, the frozen water droplets fall back to earth as hailstones.

Hail can also be a destructive aspect of severe thunderstorms. Hail causes more monetary loss than any other type of thunderstorm-spawned severe weather in the United States, annually producing about one billion dollars in crop damage. Storms that produce hailstones only the size of a dime can produce dents in the tops of vehicles, damage roofs, break windows and cause significant injury or even death.

B. Hazard Profile: Tornados, tropical storms, thunderstorm winds, lightning and hail can affect the entire county given the right conditions. Since the exact time and location of a severe weather event is not always predictable, all of Washington County is vulnerable to the threats of severe weather. Based on historical data, there have been 15 reported tornados in the planning area: 12 in the unincorporated areas of the county, one in Davisboro, two in Tennille and one Sandersville. The highest magnitude reported was a F2. Reported property damages for all 15 events totaled more than $1 million worth of damages. In 1989, seven injuries were reported. Tornados tend to strike in somewhat random fashion, making the task

of calculating a recurrence interval extremely difficult. Using a 20-year hazard cycle, frequency tables calculates an annual chance for a tornado event at:

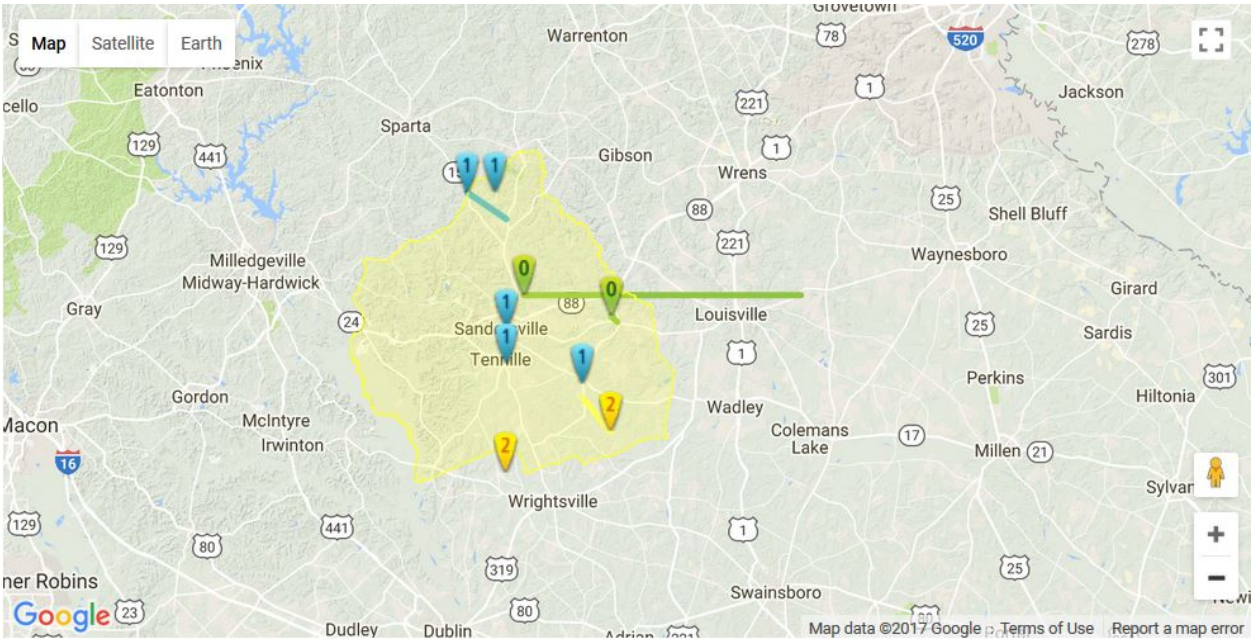
- 45% for Washington County as a whole;
- 30% for Unincorporated Washington County;
- 5% for Davisboro;
- 5% for Sandersville;
- 10% for Tennille; and
- No data is available on tornados in Deepstep, Riddleville, and Oconee, thus a prediction of an annual event cannot be calculated (See Appendix A, Section I and Appendix D).

The following table shows the event, severity and estimated cost of damages reported. The map from the Georgia Tornado Projects shows the paths taken by the storms (*See Appendix A and Appendix D).*

Date	Location	Deaths	Inj	MAG	PD	CrD	Event Narrative
4/15/1958	County	0	0	F1	2500		Length was 1mile Width was 200 yards
3/11/1962	County	0	0	F1	25000	0	Length was 1mile Width was 33 yards
3/14/1975	County	0	0	F2	250000	0	Length was 6 miles Width was 100 yards
5/30/1976	County	0	0	F1	25000	0	Length was 2 miles Width was 50 yards
5/23/1980	County	0	0	F1	2500	0	Length was 1 mile Width was 27 yards
10/1/1989	County	0	7	F2	250000		Length was 4 miles Width was 100 yards 7 injuries reported
5/11/2008	Silas	0	0	EF0	150000	0	Many structures sustained minor damage along the path of the tornado. A number of trees and several power lines were also blown down.
5/20/2008	Davisboro	0	0	EF0	2000	0	a brief EF0 tornado touched down 1.5 miles northwest of Davisboro and traveled southeast on the ground for approximately one mile before lifting 0.5 miles northwest of Davisboro. Several trees were blown down along the path of the tornado, but no structural damage was observed or reported.
5/20/2008	Lindsey	0	0	EF1	75000	0	EF1 tornado that initially touched down just inside Hancock county just south of Barnes Road and just west of Georgia Highway 15 crossed into Washington county and tracked four to five miles, ending just west of Hamburg State Park Road. Between 200 and 300 trees were blown down along the path of the tornado and one barn was partially destroyed**.** No major structural damage or injuries were observed or reported.
1/21/2017	TENNILLE			EF1	30000		

Date	Location	Deaths	Inj	MAG	PD	CrD	Event Narrative
1/21/2017	TENNILLE	0	0	EF1	50000	0	
1/21/2017	SUN HILL	0	0	EF1	60000	0	
4/3/2017	ENNIS	0	0	EF1	30000	0	
4/3/2017	SPARKS	0	0	EF0	10000	0	
4/3/2017	HALLS CROSSING	0	0	EF1	50000	0	

Sources: Interviews, The Sandersville Progress, Georgia Tornado History Project, NCEI and SHELDUS™



Source: Georgia Tornado History Project http://www.tornadohistoryproject.com/tornado/Georgia

There have been 18 tropical storms reported by the NCEI and SHELDUS™ with $331,720 property and crop damages. These storms produced winds from 35-45 mph with gust up to 55 mph. Damages because of the storms were due to power outages, downed trees and flash flooding. The tropical storms affected the entire planning area. Data for each jurisdiction is not available. Using a 20-year hazard cycle there is a 65 percent chance of an annual tropical storm event for county as a whole (*See Appendix D).*

Details	Date	PrD	CrD
Result of Hurricane Cleo	8/28/1964	1140	110
Result of Hurricane Dora	9/9/1964	147000	1470
Result of Hurricane Alma	6/8/1966	1470	1470
Result of Tropical Storm Abby	6/6/1968	0	310
Result of Hurricane Agnes	6/19/1972	0	0
Result of Tropical Storm Hanna wind gusts of 45 to 50 mph. Numerous trees and power lines were blown down.	9/14/2002	0	0
Result of Tropical Depression Bill	7/1/2003	0	0
Result of Hurricane Frances wind gust of 30 mph dumping 6-11 inches of rain. Roads throughout County were impassable	9/6/2004	30000	0

Details	Date	PrD	CrD
due to flash flooding and downed trees. Schools closed for two days. Several cars were damaged due to downed tree limbs. More than 300 trees were cleared from County roads. Trees and power lines down throughout County. Citizens were without power ranging from several hours to 3 days.			
A result of Hurricane Ivan gust of 50 mph power outages and	9/16/2004	0	0
A result of Hurricane Jeanne gust of 50 mph, power outages	9/26/2004	0	0
Result of Tropical Storm Arlene	6/12/2005	0	0
Result of Hurricane Dennis	7/10/2005	0	0
Result of Hurricane Katrina	8/29/2005	0	0
Result of Tropical Storm Tammy	10/5/2005	0	0
Result of Tropical Storm Fay	8/21/2008	0	0
Result of Hurricane Ida	11/10/2009	0	0
Result of Tropical Storm Lee	9/4/2011	0	0
Result of Tropical Storm Irma	9/11/2017	150000	0

Source: NCEI and SHELDUS

Thunderstorms are more prevalent during the spring and summer months. There have been 96 events reported by the NCEI and SHELDUS™ in the last 67 years with highest winds reported at 65 knots, with over $706,256 in property and 5,976 in crop damages. Seven injuries and three deaths have been reported. A complete table of thunderstorm wind events can be found in Appendix A.

Location	# of Events	County-Wide Events*	Total # events per jurisdiction	Property Damage $	Crop Damage $	Injury	Deaths
Washington County (unincorporated)	11	29	40	299,276	5,976	7	3
Davisboro	2	29	31	6,000	0	0	0
Deepstep	10	29	39	28,000	0	0	0
Harrison	5	29	34	45,500	0	0	0
Oconee	4	29	33	14,000	0	0	0
Riddleville	3	29	32	2,000	0	0	0
Sandersville	21	29	50	265,000	0	0	0
Tennille	11	29	40	46,750	0	0	0
TOTAL	**67**	**29**	**96**	**706,526**	**5,976**	**7**	**3**

** It is assumed that all 29 countywide events reported occurred in each jurisdiction. Source: NCEI and SHELDUS*

While data was collected looking at 67 years, frequency rate was calculated using a 20-year hazard cycle per guidance from GEMA. Using a 20-year hazard cycle, the frequency table calculates an annual chance for a thunderstorm event producing high winds is:

- 80% for the unincorporated areas of the county
- 35% for the City of Davisboro
- 75% for the Town of Deepstep.

- 50% chance for the Town of Harrison.
- 45% for the Town of Oconee.
- 35% for the Town of Riddleville.
- 130% for the City of Sandersville.
- 80% for the City of Tennille.

Washington County as a whole has an overall probability for a significant thunderstorm event of 355 percent. Hazard Frequency Tables for individual jurisdictions can be found in Appendix D.

The fourth weather event is lightning. During the spring and summer months the county experiences numerous storms that can often produce lightning. The VAISALA National Lightning Detection Network has the average flash density per square mile between 6 and 12 from 2007-2016. A search of storm data on NCEI has 17 reported lightning events to the NCEI and SHELDUS over 67 years with $10,500 in property damage. Since 1950 there have been 262 lightning strikes recorded resulting in wildfires. When these datasets are combined there has been 279 lightning strikes recorded.

While data was collected looking at 67 years of data, hazard frequency rate was calculated using a 20-year hazard cycle per guidance from GEMA. Based on a 20-year hazard cycle, the annual chance for a lightning strike is:

- 660 percent for Washington County as a whole;
- 650 percent for Unincorporated Washington County;
- 5 percent for Harrison and Tennille; and
- No data is available for Davisboro, Deepstep, Oconee, Riddleville, or Sandersville.

The fifth weather event is hail. A combination of SHELDUS™ and NCEI data reports 70 hail events in the last 67 years with slightly more than $98,325 in property and crop damages and no injuries. Hailstones ranged in size from .75 to 1.75 inches.

Location	# of Events	County-Wide Events*	Total # events per jurisdiction	Property Damage $	Crop Damage $
Washington County (unincorporated)	7	20	27	$5,628	$31,647
Davisboro	1	20	21	$10,000	$0
Deepstep	5	20	25	$0	$0
Harrison	3	20	23	$50	$0
Oconee	10	20	30	$0	$0
Riddleville	3	20	23	$0	$0
Sandersville	17	20	37	$0	$0
Tennille	4	20	24	$51,000	$0
TOTAL	**50**	**20**	**70**	**$66,678**	**$31,647**

** It is assumed that all 20 countywide events occurred in all jurisdiction. Source: NCEI and SHELDUS™*

While data was collected looking at 67 years of data, frequency rate was calculated using a 20-year hazard cycle per guidance from GEMA. Using a 20-year hazard cycle, the annual chance for a hail event is:

- 30% for the unincorporated areas of the county;
- 5% for the City of Davisboro;
- 20% for the Town of Deepstep;
- 10% chance for the Town of Harrison;
- 50% for the Town of Oconee;
- 15% for the Town of Riddleville;
- 80% for the City of Sandersville; and
- 20% for the City of Tennille.

Washington County as a whole has an overall probability for a hail event of 230 percent. Hazard frequency tables for individual jurisdictions are in Appendix D.

C. Assets Exposed to Hazard and Estimate of Potential Losses: In evaluating assets exposed to the natural hazard, the committee determined that all critical facilities, as well as all public, private and commercial property, are susceptible to tornados, tropical storms, thunderstorm winds, lightning and hail events. The GMIS has the 70 percent of the county with a wind hazard score of two, where wind speed is between 90 to 99 mph. The remaining 30 percent with a hazard score of one, where wind speed is less than 90 mph. The table below provides data from FEMA Worksheet #3a that estimates the potential loss for each jurisdiction.

Jurisdiction	Number of Structure/Properties	Value $	Population
Washington County (Unincorporated)	32,316	$1,233,819,648	10,758
Davisboro	825	$15,510,615	2,010
Deepstep	428	$10,119,795	131
Harrison	732	$7,771,213	489
Oconee	565	$10,955,739	252
Riddleville	278	$4,735,247	96
Sandersville	9,281	$604,164,088	5,912
Tennille	2,415	$67,575,030	1,539
TOTAL FOR COUNTY	46,840	$1,954,651,375.00	21,187

Source: Washington County Tax Assessor

Of the 117 critical facilities, 114 have a wind hazard score of two placing the critical facilities in Zone IV that has a wind speed of 90 to 99 mph and the remaining three have a hazard score of zero. GMIS critical facility reports for wind and FEMA Worksheet #3a are located in Appendix A for each individual jurisdiction and the county as a whole. The table below shows the number of critical facilities by jurisdictions, hazard score, replacement value, content value, and daily occupancy.

Jurisdiction	Wind Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Washington County	2	29	$107,056,218.00	$26,582,122.00	8,031	3,147
Davisboro	0	2	$650,000.00	$100,000.00	4	0
Davisboro	2	11	$8,893,000.00	$1,270,000.00	2	1
Deepstep	2	9	$1,481,087.00	$1,045,500.00	2	0
Harrison	2	7	$2,380,000.00	$310,000.00	3	0
Oconee	2	7	$4,861,792.00	$376,200.00	87	65
Riddleville	2	3	$1,030,000.00	$430,000.00	1	0
Sandersville	0	1	$5,000,000.00	1,500,000.00	756	00
Sandersville	2	36	$12,244,734.00	$5,403,000.00	171	80
Tennille	2	12	9,453,400.00	$755,000.00	14	4
Total		117	$153,050,231.00	$37,771,822.00	9,071	3,297

FEMA Hazus-MH Version 2.2 SP1 ran a hurricane scenario for probabilistic wind-damage risk assessment modeling a Category 1 storm with maximum winds of 75 mph. There were no shelter requirements for this scenario. Hurricane-wind building damage is shown in the table below:

Storm Classification	Number of Damaged Buildings	Building Damages	Total Economic Loss	Loss Ratio
Category 1	36	$3,186,930	$3,188,900	0.11%

Essential facilities are also vulnerable to storm events, and the potential loss of functionality may have significant consequences to the community. Hazus-MH identified the essential facilities that may be moderately or severely damaged by winds.

Classification	Number
EOCs	1
Fire Stations	9
Care Facilities	4
Police Stations	6
Schools	6

Wind-Damaged Essential Facility Losses Classification	Facilities At Least Moderately Damaged > 50%	Facilities Completely Damaged > 50%	Facilities with Expected Loss of Use (< 1 day)
Category 1	0	0	267

Hazus-MH estimates the amount of debris that will be generated by high velocity hurricane winds by tons is:

- Reinforced Concrete and Steel Debris (none)
- Brick and Wood and Other Building Debris 168 tons
- Tree Debris 2,169 ton
- Other Tree Debris 46, 899 tons

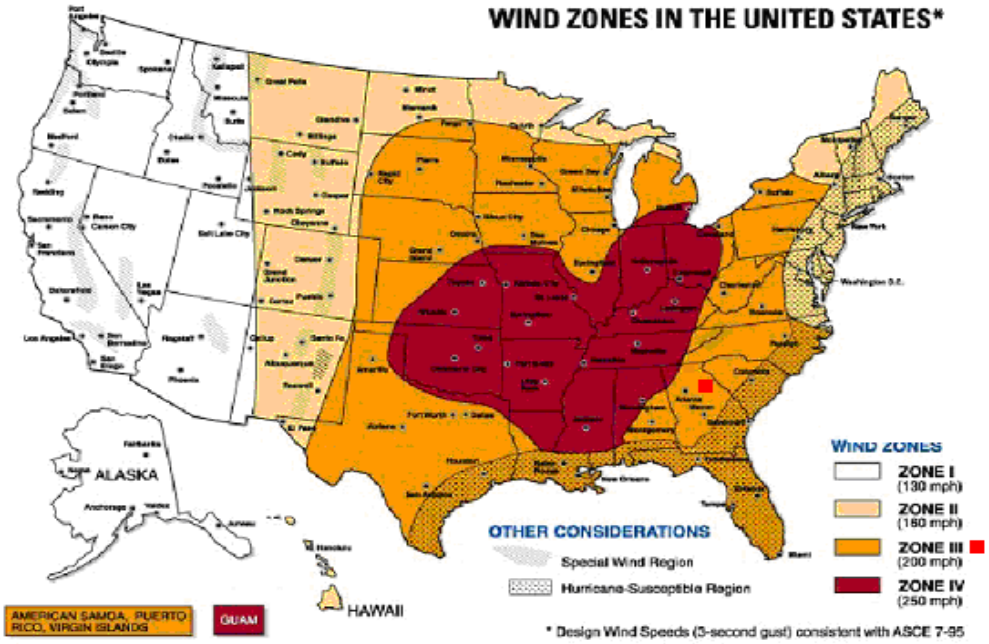
A hypothetical tornado scenario was ran using an EF3 tornado was modeled to illustrate the potential impacts of tornadoes of this magnitude in the county. The analysis estimated that approximately 911 buildings could be damaged, with estimated building losses of more than $61 million dollars. The building losses are an estimate of building replacement costs multiplied by the percentages of damage. The table below shows estimated building losses by occupancy type.

Occupancy Classification	Buildings Damaged	Building Losses
Residential	702	$21,218,452
Commercial	125	$24,503,847
Industrial	73	$13,860,492
Education	5	$1,017,641
Religious	6	$615,836
Total	**911**	$61,216,268

There were three essential facilities located in the tornado path – Sandersville Police Department, Fire Department and the Washington County EMA. According to the modeling, these three facilities would suffer minor damage should such a tornado strike occur. Depending on the time of day, a tornado strike as depicted in this scenario could result in significant injury and loss of life. In addition, arrangements would have to be made for the continued education of the students in another location. A complete copy of the FEMA Hazus-MH Version 2.2 SP1 Hazard Risk Analyses can be found in Appendix C.

D. Land Use & Development Trends: Washington County is located in FEMA wind zone III, which is associated with 200-mph wind speeds. Currently, the county has no land use or development trends related to tornados, tropical storm, thunderstorm winds, lightning, or hail events. Information on current and future land use projections can be found in Appendix B.

E. Multi-Jurisdictional Concerns – All of Washington County has the same design wind speed of 200 mph as determined by the American Society of Civil Engineers (ASCE) as evidenced by the map and table below.



Wind zones in the United States

NUMBER OF TORNADOES PER 1,000 SQUARE MILES	WIND ZONE I	WIND ZONE II	WIND ZONE III	WIND ZONE IV
<1	LOW RISK	LOW RISK ★	LOW RISK ★	MODERATE RISK
1 - 5	LOW RISK	MODERATE RISK ★	HIGH RISK	HIGH RISK
6 - 10	LOW RISK	MODERATE RISK ★	HIGH RISK	HIGH RISK
11 - 15	HIGH RISK	HIGH RISK	HIGH RISK	HIGH RISK
>15	HIGH RISK	HIGH RISK	HIGH RISK	HIGH RISK

LOW RISK
Need for high-wind shelter is a matter of homeowner preference

MODERATE RISK
Shelter should be considered for protection from high winds

HIGH RISK
Shelter is preferred method of protection from high winds

★ Shelter is preferred method of protection from high winds if house is in hurricane-susceptible region

During a natural hazard, it is imperative that all emergency personal can communicate with each other throughout the entire planning area. The county and its jurisdictions have numerous dead spots throughout the area due to topography and lack of adequate communication equipment. The county and its emergency personnel are dependent on the private sector for towers to use for signals. If these towers are ever removed, the county will be without any adequate means to bounce signals.

The entire county has the potential to be affected by tornados, tropical storms, thunderstorm winds, lightning and hail. As a result, any mitigation steps taken related for these five severe weather events should be considered on a countywide basis to include Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille. A concern is the lack of available data for the county and the cities. A database needs to be created and maintained that provides information on all past and future for the four severe weather events.

F. Hazard Summary: Since the previous plan, there has been limited new development and no increase in population that would affect the overall vulnerability of the community to this hazard. This has been no new adoption of development or building regulations to increase or decrease the overall vulnerability to severe weather events.

Overall, severe weather in the form of thunderstorm winds, poses one of the greatest threats to Washington County in terms of property damage, injuries, and loss of life. Therefore, the committee recommends mitigation measures identified in this plan should be aggressively pursued. Tornados do not touch down as frequently; however, the unpredictability and the potential for excessive damage caused by tornados makes it imperative that mitigation measures identified in this plan receive full consideration.

Weather Event	#	Fatalities	Injuries	Approximate Property/Crop Damage
Tornados	15	0	7	$1,012,000
Tropical Storms	18	0	0	$331,720
Thunderstorm Winds	96	3	7	$706,526
Lightning	262	0	0	$10,500
Hail	70	0	0	$98,325

To summarize, there are approximately 46,840 structures/properties in the county totaling slightly more than $1.9 billion with a population of 21,187. A breakdown of information for individual jurisdictions can be found in Appendix A and Appendix D. Specific mitigation actions for tornados, tropical storms, thunderstorm winds, lightning and hail events are identified in Chapter III, Section V.

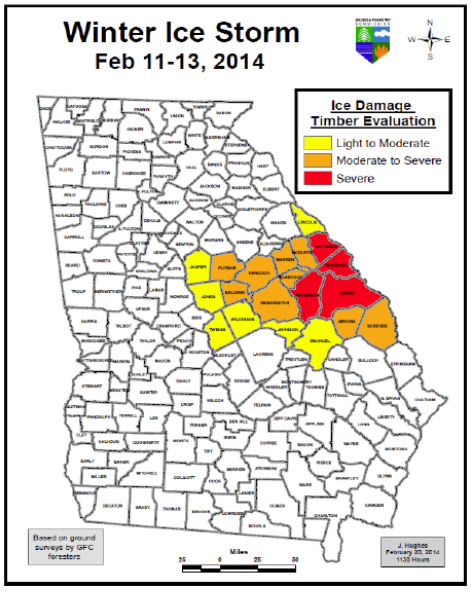
SECTION VI. WINTER STORMS

A. Hazard Identification: Southeastern snow or ice storms often form when an area of low pressure moves eastward across the northern Gulf of Mexico. To produce a significant winter

storm in the south, not only must temperatures be cold enough, but there must also be enough moisture in the atmosphere to produce adequate precipitation. A major winter storm can last for several days and be accompanied by ice, freezing rain, high winds, heavy snowfall, and cold temperatures. These conditions can make driving very dangerous, as well as bring down trees and power lines.

B. Hazard Profile: Winter storms are not spatially defined and affect the entire planning area equally. The committee researched historical data from the NCEI, SHELDUS™, SERCC, as well as information from past newspaper articles relating to winter storms. There have been 30 winter storm events recorded in the county over the last 67 years with an estimated $772,938 in property or crop damage.

The most recent ice storm on February 11-13, 2014, had freezing rain and sleet with accumulations of up to 1½ inches of ice and 2 inches of snow and sleet across the area. The heavy sleet and snow overloaded branches that came down on top of power lines when the storm hit late Tuesday, Feb. 11. Electrical service for almost 90 percent of the county was interrupted. In parts of the County, customers were without power and some for up to five days.



The weight of the ice brought down trees, limbs and other vegetative debris that blocked roads and rights of way creating hazardous conditions. The timber industry was severely affected by the storm. Washington was one of the nine counties hit by the storm and had moderate to severe timber damage according to the GFC. The GFC examined the levels of damage within two types of pine that were most frequently damaged: the young pine stands and pine stands on which a first thinning had recently occurred. The moderate to severe damage has branches and limbs broken from the trees with damage to the overall stand, having more than 25 percent of branches damaged.

Although winter storms are infrequent in the south, they have the potential to cause excessive damage to a community and disrupt the lives of residents. Based on the hazard frequency table located in Appendix D there is a 34 percent chance of an annual winter storm event for the entire county.

C. Assets Exposed to Hazard and Estimate of Potential Losses: In evaluating assets that may potentially be impacted by the effects of winter storms, the committee determined that all critical facilities, as well as all public, private and commercial property, are susceptible. The table below shows assets by jurisdiction that could be at potential risk of damage from a winter storm event.

Jurisdiction	Number of Structure/Properties	Value	Population
Washington County (Unincorporated)	32,316	$1,233,819,648	10,758
Davisboro	825	$15,510,615	2,010
Deepstep	428	$10,119,795	131
Harrison	732	$7,771,213	489
Oconee	565	$10,955,739	252
Riddleville	278	$4,735,247	96
Sandersville	9,281	$604,164,088	5,912
Tennille	2,415	$67,575,030	1,539
TOTAL FOR COUNTY	46,840	$1,954,651,375.00	21,187

Source: Washington County Tax Assessor

The GMIS does not provide a report for winter storm damage but there is slightly more than $1.9 billion worth of assets with potential loss to winter storm hazards countywide. The table below shows the number of critical facilities by jurisdiction, hazard score, replacement value, content value, and daily occupancy (*See Appendix A for Historical Event Tables, Winter Storm Maps and Appendix D for Worksheet 3A and Hazard Frequency Tables).*

Jurisdiction	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
				Day	Night
Washington County	29	$107,056,218.00	$26,582,122.00	8,031	3,147
Davisboro	13	$9,543,000.00	$1,370,000.00	6	1
Deepstep	9	$1,481,087.00	$1,045,500.00	2	0
Harrison	7	$2,380,000.00	$310,000.00	3	0
Oconee	7	$4,861,792.00	$1,876,200.00	87	65
Riddleville	3	$1,030,000.00	$430,000.00	1	0
Sandersville	37	$17,244,734.00	$6,903,000.00	927	80
Tennille	12	$9,453,400.00	$755,000.00	14	4
TOTAL	117	$153,050,231.00	$39,271,822.00	9,071	3,297

D. Land Use & Development Trends: Washington County currently has no land use or development trends related to winter storms. Projected changes in land use based on the joint comprehensive plan has minimal or no change to land use within the incorporated jurisdictions. The greatest change in land use and future development has a decrease in forestland that will be converted to residential. Since it is impossible to determine where future residents will move in the unincorporated areas of the county, vulnerability in terms of future buildings, infrastructure and critical facilities is not known at this time. It can be surmised that this will bring an increase in population and homes. Current and future-land use tables and projections can be found in Appendix B.

E. Multi-Jurisdictional Concerns: Washington County currently has no land use or development trends related to winter storms. All of the county can potentially be negatively impacted by winter storms. As a result, any mitigation steps taken related to winter storms should be undertaken on a countywide basis to include Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille.

Another major issue is countywide communications capabilities. During a natural hazard, it is imperative that all emergency personal can communicate with each other throughout the entire planning area. The county and its jurisdictions have numerous dead spots throughout the area due to topography and lack of adequate communication equipment. The county and its emergency personnel are dependent on the private sector for towers to use for signals. If these towers are removed, the county will be without any adequate means to bounce signals. The County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille are aware of the need to develop communication capabilities that will serve the entire county.

F. Hazard Summary: Since the previous plan, there has been limited new development and no increase in population that would affect the overall vulnerability of the community to this hazard. This has been no new adoption of development or building regulations to increase or decrease the overall vulnerability to winter storm events.

There have been 30 winter storm events recorded in the county over the last 67 years with no property damaged reported. There is a 60 percent chance of an annual winter storm event. Winter storms can be more accurately predicted than most other natural hazards, making it possible to give advance warning to communities. The National Weather Service issues winter storm warnings and advisories as these storms make their way south. Given the infrequency of these types of storms, southern communities are still not properly equipped to sustain the damage and destruction caused by severe winter storms. To summarize, there are approximately 46,840 structures/properties in the county totaling slightly more than $1.9 billion with a population of 21,187. The committee recognized the dangers posed by winter storms and identified specific mitigation actions in Chapter III, Section VI.

CHAPTER III. MITIGATION STRATEGIES

Table 3.1 provides a brief description of each section in this chapter and a summary of the changes to the 2013 update plan.

Chapter III. Section	Updates to Section
I. Flooding	Completed action steps were removed. Action Steps that apply to all jurisdictions were combined. New goals were added where necessary along with any existing or new multijurisdictional concerns. Goals, Objective, and Actions Steps were updated to new format.
II. Dam Failure	Completed action steps were removed. Action Steps that apply to all jurisdictions were combined. New goals were added where necessary along with any existing or new multijurisdictional concerns. Goals, Objective, and Actions Steps were updated to new format.
III. Drought	Completed action steps were removed. Action Steps that apply to all jurisdictions were combined. New goals were added where necessary along with any existing or new multijurisdictional concerns. Goals, Objective, and Actions Steps were updated to new format.
IV. Wildfire	Completed action steps were removed. Action Steps that apply to all jurisdictions were combined. New goals were added where necessary along with any existing or new multijurisdictional concerns. Goals, Objective, and Actions Steps were updated to new format.
V. Severe Weather	Completed action steps were removed. Action Steps that apply to all jurisdictions were combined. New goals were added where necessary along with any existing or new multijurisdictional concerns. Goals, Objective, and Actions Steps were updated to new format. Added Lightning and Hail Events
VI. Winter	Completed action steps were removed. Action Steps that apply to all jurisdictions were combined. New goals were added where necessary along with any existing or new multijurisdictional concerns. Goals, Objective, and Actions Steps were updated to new format.
VII. All Hazards	Category added to take goals that apply to all Hazards to reduce redundancy.

SECTION I. INTRODUCTION TO MITIGATION STRATEGY

This chapter addresses the mitigation strategy requirements of 44 CFR Section 201.6 (c)(3): "A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section shall include:

i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans

approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

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

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

A. Priority Changes from Previously Approved Plan

There have been no significant priority changes from the previous plan. The goal of Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille, is to protect the safety, health and well-being of all county citizens, and to protect public and private property and to lessen the overall effects of a hazard event.

There has been limited new development since the previous plan and no increase in population that would affect the overall vulnerability of the community from identified hazards. This has been no new adoption of development or building regulations to increase or decrease the overall vulnerability to hazard events.

B. Capability Assessment

Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille identified current capabilities for implementing hazard mitigation activities. The capability assessment identifies administrative, technical, legal and fiscal capabilities. This includes a summary of departments and their responsibilities associated with hazard mitigation as well as codes, ordinances, and plans already in place that contain mitigation activities or programmatic structure. The second part of the assessment examined the fiscal capabilities applicable to providing financial resources to implement identified mitigation action items. Below is the annual budgets for each jurisdiction:

- Washington County: Operating Budget is $13,018,855
- Davisboro: Operating budget is $568,270
- Deepstep: Operating budget is $54,000
- Harrison: Operating budget is $127,271
- Oconee: Operating budget is $168,000
- Riddleville: General Fund t is $27,100 and the Water Fund is $20,000
- Sandersville: FY 2018 operating and capital budget is $33,623,775. Including $10,304,108. in USDA infrastructure projects.
- Tennille: Operating budget is $1,076,000

It should be noted that mitigation action steps with high dollar amounts could not be completed without grant funds and careful budget planning by all jurisdictions.

While not all technical and administrative skills are found in-house, all jurisdictions have access to multiple staff through the RC and can contract out with private firms or any professional services needed. The three tables below identifies administrative, technical, legal and fiscal capabilities of each jurisdiction.

Table 3. 2 Legal and Regulatory Capability (Y/N)

Regulatory Tools (ordinances, codes, plans)	Washington County	Davisboro	Deepstep	Harrison	Oconee	Riddleville	Sandersville	Tennille	Does State Prohibit
Building code	Y	Y	N	N	N	N	Y	Y	N
Zoning ordinance	N	N	N	N	N	N	Y	Y	N
Subdivision ordinance or regulations	Y	N	N	N	N	N	Y	Y	N
Special purpose ordinances (floodplain management, storm water management, soil erosion)	Y	N	Y	Y	Y	Y	Y	Y	N
Growth management ordinances (also called “smart growth” or anti-sprawl programs)	N	N	N	N	N	N	N	N	N
Site plan review requirements	Y	N	N	N	N	N	Y	Y	N
General or comprehensive plan	Y	Y	Y	Y	Y	Y	Y	Y	N
A capital improvements plan	Y	N	N	N	N	N	Y	Y	N
An economic development plan	Y	N	N	N	N	N	Y	N	N
An emergency response plan	Y	Y	Y	Y	Y	Y	Y	Y	N
A post-disaster recovery plan	Y	Y	Y	Y	Y	Y	Y	Y	N
A post-disaster recovery ordinance	N	N	N	N	N	N	N	N	N
Real estate disclosure requirements	N	N	N	N	N	N	N	N	N

Table 3. 3 Fiscal Capability

Financial Resources	Washington County	Davisboro	Deepstep	Harrison	Oconee	Riddleville	Sandersville	Tennille	Accessible or Eligible to Use (Yes/No)
Community Development Block Grants (CDBG)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Capital improvements project funding	Y	N	N	N	N	N	Y	Y	Y
Authority to levy taxes for specific purposes	Y	Y	Y	Y	Y	Y	Y	Y	Y – Vote required
Fees for water, sewer, gas, or electric service	N	Y	Y	Y	Y	Y	Y	N	Y

Financial Resources	Washington County	Davisboro	Deepstep	Harrison	Oconee	Riddleville	Sandersville	Tennille	Accessible or Eligible to Use (Yes/No)
Impact fees for homebuyers or developers for new developments/homes	N	N	N	N	N	N	N	N	N
Incur debt through general obligation bonds	Y	Y	Y	Y	Y	Y	Y	Y	Y
Incur debt through special tax and revenue bonds	Y	Y	Y	Y	Y	Y	Y	Y	Y – Vote required
Withhold spending in hazard-prone areas	N	N	N	N	N	N	N	N	N
Other Grants	Y	Y	Y	Y	Y	Y	Y	Y	N

Table 3.4 Administrative and Technical Capacity

Staff/Personnel Resources	Washington County	Davisboro	Deepstep	Harrison	Oconee	Riddleville	Sandersville	Tennille	Dept./Agency and Position
Planner(s) or engineer(s) with knowledge of land development and land management practices	Y	Y	Y	Y	Y	Y	Y	Y	Building Dept./ Code Enforcement/ Public Works CSRA RC
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Y	Y	Y	Y	Y	Y	Y	Building Dept./ Code Enforcement
Planners or Engineer(s) with an understanding of natural and/or manmade hazards	Y	Y	Y	Y	Y	Y	Y	Y	Public Works/CSRA RC Staff
Floodplain manager	Y	N	N	Y	N	Y	Y	Y	Building Dept.
Surveyors	N	N	N	N	N	N	N	N	Contracted as needed
Staff with education or expertise to assess the community's vulnerability to hazards	Y	Y	Y	Y	Y	Y	Y	Y	Public Safety/EMA
Personnel skilled in GIS and/or HAZUS	Y	Y	Y	Y	Y	Y	Y	Y	CSRA RC Various
Emergency manager	Y	Y	Y	Y	Y	Y	Y	Y	EMA
Grant writers	Y	Y	Y	Y	Y	Y	Y	Y	CSRA RC

C. Community Mitigation Goals

Collectively, the jurisdictions reviewed the hazard profiles and the loss estimates in Section II and used it as a basis for developing mitigation goals, objectives and action steps. Mitigation goals are preventive measures to lessen the effect of and losses due to hazard events and are typically long-range visions adapted toward jurisdictional policy. Mitigation objectives are strategies to attain identified goals. Goals and objectives are formulated by reviewing hazard historical data, existing local plans, policy documents, regulations, and public input. Each jurisdiction developed objectives and actions unique to specific vulnerabilities or concerns within its boundaries.

Mitigation actions were developed as the means to carrying out the objectives and attain goals. All action steps are compatible with the plans, policies, and regulations of each jurisdiction. The jurisdictions must also have the legal, administrative, fiscal, and technical capacities to perform each action.

The capabilities assessment above aided in forming realistic mitigation actions. This capabilities assessment can then incorporate results of the STAPLEE worksheet to identified obstacles that may hinder the completion actions. Each jurisdiction identified and prioritized actions steps along with an implementation schedule, funding source, and coordinating individual or agency.

Based on the capabilities assessment, the STAPLEE and six categories listed above the county and all jurisdictions identified the following goals:

- Goal 1: Protect the safety, health and well-being of all county citizens;
- Goal 2: Protect public infrastructure and private property;
- Goal 3: Educate the community about natural hazards;
- Goal 4: Manage development to minimize loss;
- Goal 5: Natural Resources Protection; and
- Goal 6: Structural modifications to reduce the impacts of hazard events.

D. Identification & Analysis of Range of Mitigation Actions

The framework used to guide jurisdictions in identifying mitigation measures was developed by FEMA and is captured by the following six categories:

- **Prevention**: Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities that reduce hazard losses. Examples include building and construction code revisions, zoning regulation changes, and computer hazard modeling.
- **Property Protection**: Actions that involve the medications of existing buildings or structures to protect them from a hazard, or removal from the hazard area. Examples include roadway elevations, improving wind and impact resistance, and flood proofing.

- **Public Education and Awareness**: Action to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them. Examples include programs that target repetitive loss properties and vulnerable populations.
- **Natural Resources Protection**: Actions that, in addition to minimizing hazard losses also preserve or restore the function of natural systems. Examples include projects to create open space, green space, and stream restoration.
- **Structural Projects**: Actions that involve the construction of structures to reduce the impact of a hazard. Examples include projects that control floodwater, reconstruction of dams, and construction of regional retention areas.
- **Emergency Services**: Actions that protect people and property during and immediately after a disaster event or hazard event. Examples include enhancements that provide advanced warning and redundant communications.

i. **Structural and Non-Structural**

Mitigation relates to concrete actions that are put into practice to reduce the risk of destruction and casualties. Mitigation is generally split into two main types of activities: Structural mitigation refers to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure. Non-structural mitigation refers to policies, awareness, knowledge development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk with related impacts. Structural and non-structural actions are identified in Table 3.7.

ii. **Existing Polices, Regulations, Ordinances, and Land Use**

Washington County, Davisboro, Sandersville, and Tennille have adopted the following Mandatory codes:

- Georgia State Minimum Standard Building Code (International Building Code with Georgia State Amendments).
- Georgia State Minimum Standard One- and Two-Family Dwelling Code (International Residential Code for One- and Two-Family Dwellings with Georgia State Amendments).
- Georgia State Minimum Standard Fire Code (International Fire Code with Georgia State Amendments).
- Georgia State Minimum Standard Plumbing Code (International Plumbing Code with Georgia State Amendments).
- Georgia State Minimum Standard Mechanical Code (International Mechanical Code with Georgia State Amendments).
- Georgia State Minimum Standard Gas Code (International Fuel Gas Code with Georgia State Amendments).
- Georgia State Minimum Standard Electrical Code (National Electrical Code with Georgia State Amendments).
- Georgia State Minimum Standard Energy Code (International Energy Conservation Code with Georgia State Supplements and Amendments).

- Life Safety Code (NFPA 101).

They have also adopted the Permissive codes:

- International Property Maintenance Code.
- International Existing Building Code.

Other types of ordinances that have been adopted are: The Washington County Unified *Comprehensive Plan 2016-2026* was adopted by resolution by the Washington County Board of Commissioners, and all seven municipalities. The planning process examines the current and future trends and assess the strengths and opportunities available to achieve their community vision. This document drives the decision making process for the County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille. The Comprehensive Plan also examines existing land use and projects future land use. Existing and Future Land Use Maps can be found in Appendix B.

iii. **Community Values, Historic & Special Considerations**

Historical-Cultural:

Churches: The first church buildings were made of logs with dirt floors. Records show churches being constituted as early as 1790. In the 1790's there were five well established churches in what is now Washington County; two Methodist: Harris Church and New Hope; and three Baptist: Bethlehem, Ohoopee, and Williamson Swamp Church which later became Jordan's.

- Bethlehem Baptist Church is the oldest Baptist Church, and perhaps the oldest existing church of any denomination in Washington County. It was constituted on October 3, 1790. It was first located on Keg (Cag) Creek and was called "Church of Christ on Keg Creek." It was moved to Warthen in 1795. A wooden church building was built which later burned. The building in use today was built in 1890.
- New Hope United Methodist Church is the oldest Methodist Church in the County still in existence. Early records have been lost, but it is believed that this church was constituted in the 1790's. A wooden structure was built on three acres of land given by Myers Whitfield and is still being used for worship today.

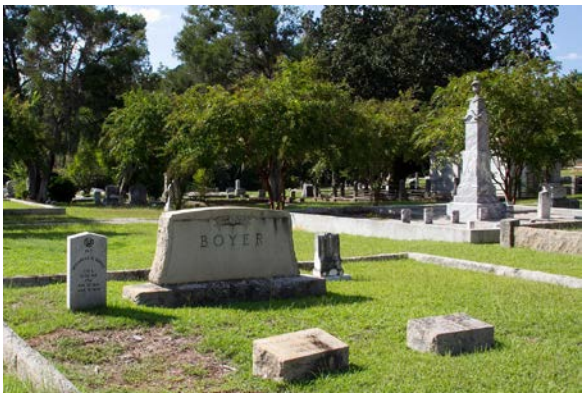
Properties listed on the National Register of Historic Places: The following properties have been placed on the National Register of Historic Places and enjoy protection from destruction or alteration.

- The Francis Plantation, southeast of Davisboro, was listed on the National Register of Historic Places in 1975. The plantation was built by Captain W. B. Francis prior to the Civil War. The estate remains in the family today and contains a number of outbuildings. The main house is Greek revival in style and is raised off the ground. The house has four large rooms divided by a central hall. The outbuildings consist of a well house with a dairy on one side

and a larder on the other, a smoke house built of hand-hewn logs, a barn, a work shed, several old cabins, and a dovecote.

- The Washington County Courthouse, located in downtown Sandersville on the courthouse square, was listed on the National Register of Historic places in 1980. Although the site of the Washington County Courthouse has not changed through the years, the structures have. The first courthouse built here was constructed of wood. The first brick courthouse was commissioned and built to replace the original wooden one in 1836. The first brick courthouse was destroyed by fire in 1855. The second brick courthouse was built in 1858. It was destroyed by Sherman's command on November 27, 1864. A third brick courthouse was completed in 1869 on the same foundation.

- The Thomas Jefferson Elder High and Industrial School, at 316 Hall Street in Sandersville, was listed on the National Register in 1981. It is an authenticated Rosenwald Plan school. The Julius Rosenwald Fund was established to build schools for black children in the South. Built in 1927. Elder High is the oldest existing school building in Washington County.



Several other sites in the City of Sandersville, including two districts and the city cemetery, are listed on the National Register of Historic Places.

Although there are no other structures or sites listed on the National Register, there are close to two dozen historical markers scattered throughout the County. Most relate to the Civil War and General W. T. Sherman's infamous March through Georgia.

There are many historic structures in the County, which warrant recognition as being a part of the rich history of the County. Below is a list of structures, which are particularly notable and should be nominated for the State or National Historic Register. These historic resources are divided into categories as required by the Georgia Minimum Planning Standards for historic community resources.

Other Historically Significant Properties

Residential:

- The William G. Bryan house: Built in the 1830's and located in Riddleville.
- The Greek revival Cottage: Built in approximately 1850 in Riddleville by a man named Wescoloski from Savannah.

- Any residences displaying the works of Charles E. Choate, architect and builder from Augusta. Two fine examples located in Tennille are The Madden-Smith home on East Central Avenue and the Tom W. Smith home on Main Street (1900). Proposals have been made to create a Choate Historic District in Tennille that would include commercial, institutional, industrial and residential buildings.

Commercial

The Tennille Banking Company: Designed by Charles Choate, the banking company could be included as part of the Choate Historic District.

The Warthen commercial district: This area includes the old Post Office, the Warthen Bank, the Jail and other structures contained within old downtown Warthen. Although it is virtually a ghost town now, Warthen once bustled and was the first town in Washington County.

Recreation: Year-round programs are offered to all ages by the Washington County Recreation Department including baseball, soccer, basketball, softball and flag football. The department offers programs from gardening to swimming. There are also lighted basketball and tennis courts, playing fields, a playground and picnic area in Washington County. Washington County operates a Recreational Department that serves the entire community and all age groups. Basketball, soccer, baseball, softball,

football and volleyball are offered as team sports. Individual sports include gymnastics and aerobics. Swimming and tennis lessons are also available.

Two primary parks are operated by the County. The Sandersville City Park is owned by the City, but run by the Washington County Parks and Recreation Department. The park has three multi-purpose ball fields, two tennis courts, a playground, and two basketball courts. The County dedicated the 30 acre Kaolin Park located in Sandersville in the fall of 1990. The park consists of four multi-purpose playing fields, two tennis courts, two basketball courts, and a picnicking area.

There is one park in Deepstep that includes a baseball and a softball field, a ½ basketball court, playground equipment, walking trail and a picnic area. There are men's softball games as well as little league baseball games played on the fields. The park also includes a covered pavilion, restrooms, concession stand, bleachers and a press box for everyone's enjoyment. The park covers 10.64 acres.

Oconee has three areas referred to as "parks" as they are small areas that have been landscaped for beautification only. Oconee has a community center that is a rentable building used for social functions. Riddleville has a ¾-mile exercise trail at Walker Trail Park serves as the City's only recreation facility. The four-acre park is fully lit with a picnic area.

Economic Drivers

Fortunately, for Washington County, as the marketplace for some agricultural products declined, the kaolin industry grew. Kaolin, a white, alumina silicate clay, is used in paper, medicines, paints, and many other products, all of which are shipped around the world. As Washington County grew into kaolin's largest refiner, it became known as the "Kaolin Capital of the World." Five processing companies and numerous mines, attract college-educated personnel, scientists, and geologists from many countries. An annual Kaolin Festival celebrates the importance of the resource. At the end of the twentieth century, kaolin was an $800 million business and Georgia's largest volume export. Mining companies have reclaimed and restored more than 80 percent of the land that has been stripped since 1969.

At the turn of the twenty-first century, Washington County businesses are well served by four industrial parks and their proximity to interstate highways 16 and 20, the Norfolk Southern and Sandersville Railroad companies, and

Washington County airport. Savannah, with its port facilities and international airport, offers a gateway to world markets. Agriculture is still important, along with a fledgling nursery industry and a healthy timber business.

iv. **Prioritization of Actions:** Those mitigation actions given high priority are in two groups: life safety-related actions that can be accomplished relatively quickly and changes to protect critical facilities on which other emergency management systems are dependent, for example communications focal points. Those actions likely to require extended time frames to accomplish received medium priority status.

The committee consultant used the STAPLEE worksheet (Social, Technical, Administrative, Political, Legal, Economic, Environmental) to select and prioritize the most appropriate mitigation alternatives and is in Appendix D. This methodology requires that seven categories outlined in the STAPLEE be considered when reviewing potential actions. This process helped ensure that the most equitable and feasible actions would be undertaken based on each jurisdictions capabilities. Table 3.6 provides information regarding the review and selection criteria for alternatives.

Table 3.6

STAPLEE REVIEW AND SELECTION CRITERIA FOR ALTERNATIVES
• Is the proposed action acceptable by the community? • Is the action compatible with current and future community values? • Are equity concerns involved that would result in unjust treatment of any segment of the population? • Will the proposed action cause social disruption?
TECHNICAL
• Will the proposed action achieve the stated objective and further mitigation goals? • Will the proposed action create more problems than it solves? • Does the proposed action resolve the problem completely or partially? • Is it the most useful action in light of other community values?
ADMINISTRATIVE
• Does the community have the capability to implement proposed action? • Is there someone to lead or coordinate the proposed action? • Is there sufficient funding, staff and technical support to implement the proposed action step? • Are there ongoing administrative needs that are required?
POLITICAL
• Is the proposed action politically acceptable? • Have political leaders participated in the planning process? • Who are the stakeholders for this proposed action? • Have all stakeholders been afforded an opportunity to participate in the planning process? • Is there public support to implement and maintain the action?
LEGAL
• Does the community have the authority to implement the proposed action? • Is there a clear legal basis for the proposed action? • Are there legal side effects? (i.e. could the action be construed as a taking)

- Is the proposed action allowed in the general plan?
- Will the community be liable for action or lack thereof?
- Will the proposed action be challenged?

ECONOMIC

- What is the cost-benefit of the proposed action (do the benefits exceed the cost)?
- Have initial, maintenance and administrative costs been taken into account?
- Has funding been secured for the proposed action? If not have funding sources been identified?
- Will the proposed action affect the fiscal capabilities and/ or budget of the jurisdiction?
- Will the proposed action place a tax burden on the community?
- Does the proposed action contribute to other community goals? (capital improvements, economic development)

ENVIRONMENTAL

- Will the proposed action have a positive or negative effect on the environment?
- Does the proposed action require environmental regulatory approvals?
- Does the proposed action meet local and state regulations?
- Does the proposed action impact a threatened or endangered species?

E. Introduction to Action Plan

The next two sections of Chapter III., Section II. Natural Hazards and Section III. Mitigation Actions comprise the strategies Washington County together with Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille have identified to reduce the effects of natural hazards. Mitigation actions given high priority are in two groups: (1) life safety-related actions that can be accomplished relatively quickly and (2) changes to protect critical facilities on which other emergency management systems are dependent, for example communications focal points. Those actions likely to require extended time frames to accomplish received medium priority status.

SECTION II. NATURAL HAZARDS

A. Flooding Action Plan

The committee determined that due to the presence of flood plains in the county efforts to reduce the level of exposure to flooding should be considered. In previous flooding instances, damage has been sustained primarily to roads, bridges and natural resources. Specific mitigation measures identified by the committee are designed to lessen the effects of such damage to new and existing structures in the future.

Objective A1. Improve the effectiveness of existing flood insurance programs.
Objective A2. Evaluate and improve the present drainage infrastructure.
Objective A3. Warn citizens when the potential for flooding exist.
Objective A4. Lessen the impact to existing buildings, critical facilities and infrastructure due to flooding.
Objective A5. Limit future development in flood prone areas.
Objective A6. Reduce the threat of water contamination caused by flooding.

B. Dam Failure Action Plan

Dam failure mainly affects areas that are downstream of the event. Further study of this type event is required to determine where property damage and loss of life has the greatest potential to occur. Critical facilities and vulnerable populations are located in all jurisdictions as well as the unincorporated areas of the County. As a result, any mitigation steps taken related to dam failure events should be undertaken on a countywide basis and specifically include all incorporated jurisdictions.

Objective B1. Identify at risk population and properties.

Objective B2. Develop proposal to regulate protective measures for dam breach zones

C. Drought Action Plan

As indicated in Chapter II, Section III, drought conditions can cause costly damage to crops. However, from a danger or hazard perspective, the greatest threat posed by drought conditions is from potential wildfires. As 91.6 percent of the county is made up of forest and woodlands, the possibility for wildfires is distinct and poses a significant threat. In general, wildfires are the result of dry conditions combined with lightning or carelessness. The committee determined that mitigation goals were necessary to prevent crop damage, as well as damage to new and existing structures.

Objective C1. Ensure that there is an adequate water supply during periods of drought.

Objective C2. Educate citizens on water conservation issues.

D. Wildfire Action Plan

As indicated in Chapter II, Section III, wildfires have the potential to cause costly damage in Washington County. From a danger or hazard perspective, the greatest threat posed by wildfire is the damage to forest, woodlands and agriculture property. The possibility for wildfires is distinct and poses a significant threat to the county. Forest fires are generally the result of dry conditions combined with lightning or carelessness. The committee determined that mitigation goals were necessary to prevent damage to undeveloped areas of the county as well as damage to new and existing structures caused by wildfires.

Objective D1. Ensure that adequate fire protection is available.

Objective D2. Reduce threat of wildfire occurrence.

Objective D3. Increase public awareness of wildfire dangers.

E. Severe Weather (Tornados, Tropical Storms, Thunderstorm Winds, Lightning, Hail)

As with many Georgia communities, if a tornado or tropical storm were to strike Washington County, significant damage to both property and agricultural crops could result. In addition, the potential for injuries and loss of life is substantial due to the unpredictability and violent nature of these storms. The committee recognizes the important role advance planning plays in the mitigation process. There is great benefit in identifying appropriate steps that can be taken to help minimize losses to new and existing structures in Washington County because of a severe weather event. As indicated in Chapter II, Section IV, of all of the natural hazards profiled in this plan, tornados have the potential to inflict the greatest amount of damage while thunderstorm winds are the most frequently occurring natural hazard in the county and have the greatest chance of affecting the county each year. The committee has identified several courses of action that both local officials and citizens can use in their mitigation efforts against the effects of tornados, tropical storms, thunderstorm winds, lightning and hail to both new and existing structures.

Objective E1. Minimize damage to property from severe weather events.
Objective E2. Minimize damage to public buildings and critical facilities to ensure continual operations of vital services.
Objective E3. Protect vulnerable populations from the effects of severe weather events.
Objective E4. Educate the public including citizens and business owners on disaster preparedness and safety.

F. Winter Storms Action Plan

Within Washington County, and the southeast region in general, there is great concern over the threat of winter storms. Although this area does not typically receive the amounts of snow and ice that other regions do, nor do they experience winter storms as frequently as other regions, Washington County and other southeastern communities must be prepared for the damage caused by winter storms. The fact that winter storms hit Washington County infrequently results in other problems, such as lack of equipment and supplies to combat treacherous winter storm conditions. In Washington County, the formation of ice on roads and bridges, tree limbs, and power lines is the cause of most damage. In Chapter II, Section V additional winter storm hazards are addressed, as well as information related to potential losses for the county. The committee has determined that several steps could be undertaken to minimize the effects of winter storms to protect the health and safety of citizens, as well as damage to new and existing structures.

Objective F1. Educate the public on preparedness and safety issues for winter storm events.
Objective F2. Prevent property damage because of a winter storm event.
Objective F3. Minimize power outages during winter storms.

G. All Hazard Action Steps

The purpose of this section is to allow the committee to recommend mitigation measures within this plan that transcend individual hazards. Certain common mitigation measures are needed regardless of the specific hazard event. Rather than list these multiple times within each different hazard category, the committee decided to list these "all-hazards" mitigation measures within a separate section of the plan. The goal with these mitigation measures is again to minimize the loss of life and property, and to prevent disruption of services to the public to the greatest extent possible.

Objective G1. Ensure communication capabilities exist between all Emergency Service Personnel and Agencies.
Objective G2. Ensure the ability to travel for county residents, organizations, and providers of essential services such as Law Enforcement Personnel, hospitals and utilities after a hazard event.
Objective G3. Protect critical facilities from the effects due to power outages because of a hazard event to ensure a continuation of all vital services.
Objective G4. Provide adequate notification to citizens of Washington County pertaining to hazard event.
Objective G5. Guarantee all evacuation plans are up to date and adequate to meet the needs of the citizens of Washington County.

Objective G6. Guarantee that all Emergency Response Plans are up to date and adequate to meet the needs of citizens of Washington County.

Objective G7. Ensure all emergency shelters are ready to meet the needs of the population of Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille

Objective G8. Provide the citizens of Washington County educational information on Emergency Preparedness.

Objective G9. Provide the citizens of Washington County with accurate and timely information pertaining to Emergency Preparedness.

Objective G10. Collect accurate and complete data pertaining to hazard events within Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille.

SECTION III. MITIGATION ACTIONS

**** All Jurisdictions include Washington County/ Davisboro/ Deepstep/ Harrison/ Oconee/Riddleville/Sandersville/Tennille/***

Table 3.7

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
1.	Investigate greater participation Level in the CRS	Washington County/ Davisboro/ Deepstep/ Oconee/ Sandersville/ Tennille/	BOC/City Councils	Flood	A1, A2	1, 2, 4, 5	Non-Structural	Staff Time	General Funds	3 years	Stalled due to cost and funding	Low
2.	Participate in the NFIP	Riddleville Harrison	BOC/City Councils	Flood	A1, A2	1, 2, 4, 5	Non-Structural	Staff Time	General Funds	1 year and Continual	Working with County to see how to implement	Low
3.	Continue to assess storm water runoff.	*All Jurisdictions	Public Works	Flood	A5, B2	2, 6	Non-Structural	Staff time	General Funds	1 year and Continual	Will apply for as funding is available	High
4.	Construct as needed, more storm water retention facilities, storm drain improvements and channel improvements to protect existing and new developments.	All Jurisdictions	BOC/City Council/ Public Works	Flood/ Drought	A3,	2, 6	Structural	3,000,000	General Funds	2 years and Continual	Will apply for as funding is available	High
5.	Clear run-off and water retention ditches.	All Jurisdictions	Public Works/Road Dept.	Flood	A5	2, 1	Structural	Staff Time	General Fund,	1 year and Continual	Ongoing, part of road and bridges, public works.	High

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
6.	Seek funding for communication towers and voice repeater systems.	All Jurisdictions	EMA/Police/Sheriff	All hazards	F1, F9	1	Structural	$750,000	General Fund, FEMA, CJCC, JAG, USDA, DOJ	2 years and Continual	Ongoing	High
7.	A Strom drainage project has been identified along Sister Creek at Joes Road	Washington County/	Public Works/Road Dept.	Flood	A5	2, 1	Structural	$2,000,000	CDBG, USDA, EPA, DNR, General Fund,	3 years	Will apply for as funding is available	High
8.	The City of Sandersville has identified a stormwater and drainage project Tanyard Branch.	Sandersville	Public Works	Flood	A5	2, 1	Structural	$3,000,000	CDBG, USDA, EPA, DNR, General Fund,	3 years	Will apply for as funding is available	High
9.	The City of Sandersville has identified a stormwater and drainage project in the Tybee neighborhood.	Sandersville	Public Works	Flood	A5	2, 1	Structural	$5,000,000	CDBG, USDA, EPA, DNR, General Fund,	3 years	Will apply for as funding is available	High
10.	A Strom drainage project has been identified along Sparta Davisboro Rd	Davisboro	Public Works/City Council	Flood	A5	2, 1	Structural	2,000,000	CDBG, USDA, EPA, DNR, General Fund,	3 years	Will apply for as funding is available	High
11.	Promote the preservation of areas in and around watercourses.	Washington County/ Sandersville	BOC/City Councils	Flood	A6	1, 2, 4, 5	Non-Structural	Staff time	CDBG, USDA, EPA, DNR	2 years and continual	Ongoing,	High
12.	Add greenspace to known flood prone areas.	*All Jurisdictions	BOC/City Councils	Flood	A6	1, 2, 4, 5	Non-Structural	Staff time	CDBG, USDA, EPA, DNR	2 years and continual	Ongoing	Medium

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
13.	Evaluate existing water system upgrade as needed	*All Jurisdictions	Public Works	Flood/ Drought/ Wildfire	A7, B1	1, 2, 6	Structural	2,000,000	General Fund, CDBG, USDA, EPA, DNR	1 year and Continual	Ongoing	High
14.	Investigate methods to reduce non-point source pollution.	Washington County/ Sandersville	BOC/City Council	Flood	A1	1, 2, 5	Non-Structural	$750,000	USDA, EPA, DNR	2 years	Ongoing Will apply for as funding is available	Medium
15.	Enact a program to educate the residents about water conservation issues	*All Jurisdictions	BOC/City Councils/ Water Dept.	Drought	B1, B2	1, 3	Non-Structural	$2,000.00	USDA, EPA, DNR, General Funds	1year and Continual	Ongoing	High
16.	Increase public awareness of watering restrictions and bans.	*All Jurisdictions	BOC/City Councils/ Water Dept.	Drought	B1, B2	1, 3	Non-Structural	Staff Time	General Funds	1year and Continual	Ongoing	High
17.	Develop a public awareness campaign to promote water-saving campaigns (i.e. low-flow water saving devices)	*All Jurisdictions	BOC/City Councils/ Public Works	Drought	B1, B2	1, 3	Non-Structural	Staff Time	General Funds	1year and Continual	Ongoing	High
18.	Continue training of all firefighters to include wildland fire training.	*All Jurisdictions	EMA/Fire Depts.	Wildfire	C1	1, 2	Non-Structural	$250,000	General Funds, FEMA	1year and Continual	Ongoing	High
19.	Seek funding for needed firefighting equipment	*All Jurisdictions	EMA/Fire Depts.	Wildfire	C1	1, 2	Non-Structural	$500,000	General Funds, FEMA	1 year and Continual	Ongoing	High
20.	Seek funding for more paid firefighters	*All Jurisdictions	EMA/Fire Depts.	Wildfire	C1	1, 2	Non-Structural	$300,000	General Funds, FEMA	1year and Continual	Ongoing	High
21.	Inventory and replace or install more fire hydrants as needed.	*All Jurisdictions	Public Works/ Fire Depts.	Wildfire	C1	1, 2	Structural	75,000	General Funds, FEMA	1year and Continual	Ongoing	High

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
22.	Seek funding fire engines, brush trucks, equipment trucks and tankers for local fire departments.	*All Jurisdictions	EMA/Fire Depts.	Wildfire	C1	1, 2	Non-Structural	$1,500,000	General Funds, FEMA	1year and Continual	Ongoing	High
23.	Enforce defensible space (30-ft minimum setbacks) between buildings and flammable brush and forestland where possible.	*All Jurisdictions	BOC/City Councils/	Wildfire	C2, C3	1, 2, 3	Structural	Staff Time	General Funds, FEMA	1 year and Continual	Ongoing	Medium
24.	Continue following GFC service of construction and maintenance of firebreaks around forests and structures, along abandoned roadbeds.	*All Jurisdictions	BOC/City Councils/ Planning and Zoning	Wildfire	C2, C3	1, 2, 3	Non-Structural	Staff Time	General Fund	1 year and Continual	Ongoing	High
25.	Strictly follow GFC's guidelines for control burns and permits.	*All Jurisdictions	BOC/City Councils/ GFC	Wildfire	C2, C3	1, 2, 3	Non-Structural	Staff Time	General Funds,	1 year and Continual	Ongoing	High
26.	Investigate the feasibility of Implementing the Firewise Community Initiative where appropriate	*All Jurisdictions	BOC/City Councils/	Wildfire	C2, C3	1, 2, 3	Non-Structural	$25,000.00	General Funds, GFC	3 years	Deferred due to lack of staff and coordination	Medium
27.	Improve public awareness of wildfire techniques and awareness of wildfire dangers.	*All Jurisdictions	EMA/ Fire Depts.	Wildfire	C2, C3	1, 2, 3	Non-Structural	$25,000.00	General Funds	2 years and Continual	Ongoing	High
28.	Equip all county and city recreation parks with adequate early severe weather warning and lightning detection devices.	*All Jurisdictions	BOC/City Councils/ Recreation Dept.	Severe Weather	D1, D2. D3	1, 2, 6	Structural	$100,000	General Funds, FEMA	2 years	Ongoing As funding becomes available	High

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
29.	Inspects public buildings and critical facilities and retrofit to reinforce windows, doors, and roofs as needed	*All Jurisdictions	EMA/ Fire Code Enforcement and Building Inspection	Severe Weather, Winter Storms	D1, D2, D3	1, 2, 6	Structural	$125,000	General Funds, FEMA	3 years	Ongoing No structure has been identified to date for retrofit.	Medium
30.	Enforce building codes for all new buildings and critical facilities.	*All Jurisdictions	Code Enforcement and Building Inspection	Flood, Severe Weather, Winter Storm	A5, A6, D1, D2	1, 2, 6	Structural/ Non-Structural	Staff Time	General Funds, FEMA	1 year and Continual	Ongoing	High
31.	Install lightning rods in high value critical facilities.	*All Jurisdictions	EMA/ Code Enforcement and Building Inspection	Severe Weather, Lightning	D1, D2. D3	1, 2, 6	Structural	100,000	General Funds, FEMA	1 year and Continual	Ongoing	High
32.	Install surge protectors on critical facilities' electronic equipment in essential county and city facilities.	*All Jurisdictions	EMA/ Code Enforcement and Building Inspection/ IT	Severe Weather, Lightning, Winter Storm	D2, F1	1, 2, 6	Structural	$10,000	General Funds	1 year and Continual	Ongoing	High
33.	Review current Emergency Response Plan and update when needed.	Washington County EMA	EMA	All hazards	F6, F8	1, 2, 3	Non-Structural	Staff Time	General Funds	2 years and Continual	Ongoing	High
34.	Review current evacuation plans paying particular attention to vulnerable populations and update as needed.	Washington County EMA	EMA/BOE	Flood, Wildfire, Severe Weather, Winter Storm	F5, F8	1, 2, 3	Non-Structural	Staff Time	General Funds	2 years and continual	Ongoing	High
35.	Provide boat owners with safety tie down procedures with boat registration.	Washington/ County	EMA/ Tag Office/ Recreation Dept.	Severe Weather, Winter Storm	E2, D1	1, 2, 3	Non-Structural	2,500	General Funds	1 year and continual	Ongoing	High

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
36.	Develop a public awareness program about the installation of lightning grounding systems on critical infrastructure, residential and business properties.	*All Jurisdictions	BOC/ City Councils/ EMA	Severe Weather, Lightning	D4	1, 2, 3	Non-Structural	Staff Time	General Funds	2 years	Stalled due to lack of staff	High
37.	Inventory all critical facilities and assess generator needs. Install generators where needed.	*All Jurisdictions	EMA	All hazards	F3	1, 2, 3, 6	Structural/ Non-Structural	500,000	General Funds, FEMA	1 year and continual	Ongoing	High
38.	Seek funding to ensure all current and future emergency shelters have back-up generators.	*All Jurisdictions	EMA	All hazards	F7	1, 2, 3, 6	Structural/ Non-Structural	250,000	General Funds, FEMA	3 years	Ongoing	High
39.	Assist Nursing Homes and health care facilities with acquiring generators.	*All Jurisdictions	EMA	All hazards	F3	1, 2, 3, 6	Structural/ Non-Structural	350,000	FEMA, Private Funds from Nursing Homes	1 year and continual	New	High
40.	Seek funding to ensure all current and future emergency shelters have back-up generators.	*All Jurisdictions	EMA	All hazards	F7	1, 2, 3, 6	Structural/ Non-Structural	250,000	General Funds, FEMA	3 years	Ongoing As funding becomes available	High
41.	Educate the public on shelter locations and evacuation routes	*All Jurisdictions	BOC/ City Councils/ EMA/BOE	Flood, Wildfire, Severe Weather, Winter Storm	F8, F9	3	Non-Structural	Staff Time	General Funds	1 year and continual	Ongoing	High

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
42.	Develop public education and awareness programs regarding severe weather events to include home safety measures, purchase of weather radio and personal safety measures before, during and after an event.	*All Jurisdictions	BOC/ City Councils/ EMA	Flood, Wildfire, Severe Weather, Winter Storm	F8, F9	3	Non-Structural	$10,000	General Funds, FEMA	2year and continual	Ongoing	High
43.	Implement a winter storm education program to include winterization of home and/or business and what to do before, during and after.	*All Jurisdictions	BOC/ City Councils/ EMA	Winter Storm	E1	3	Non-Structural	$25,000	General Funds	2 year and continual	Ongoing	High
44.	Review current codes to comply with and enforce the State building code with criteria for design snow load for buildings and structures.	*All Jurisdictions	BOC/ City Councils/ Planning and Zoning	Winter Storm	E2	1, 2, 3,	Non-Structural	Staff Time	General Funds	Continual	Ongoing	Medium
45.	City of Sandersville Inspect power lines to determine if trees need to be trimmed or cut down.	City of Sandersville	Sandersville Electric	All hazards	F2, F3	1,2,4, 6	Structural	Staff Time	General Fund	1 year and continual	Ongoing	High
46.	Install weather Service Radio Transmitter on existing towers to provide coverage of NWS transmissions	Washington EMA/	EMA/	All Hazards	F4, F8, F9	1, 2	Structural	150,000	General Funds, FEMA	2 years and continual	Ongoing	High
47.	Provide NOAA weather radios to elderly and handicap populations (moved to all hazards).	*All Jurisdictions	EMA	Flood, Wildfire, Severe Weather, Winter Storm	F4, F8, F9	1, 2,3	Non-Structural	$50,000	General Funds, FEMA	2 years	Stalled due to no funding	Medium

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
48.	Inventory existing road equipment and purchase needed equipment to maintain roads before, during and after a hazard event.	*All Jurisdictions	BOC/ City Councils/ Road Dept.	Flood, Severe Weather, Winter Storm	F2	1, 2	Non-Structural	300,000	General Funds, FEMA	2 years	Ongoing As funding becomes available	Medium
49.	Develop coordinated management strategies for deicing, snow plowing, and clearing roads of fallen trees and debris	*All Jurisdictions	BOC/ City Councils/ Road Dept./EMA	Flood, Severe Weather, Winter Storm	F2	1, 2	Non-Structural	Staff Time	General Funds	2 years	Ongoing	High
50.	Promote the construction of safe rooms in shelter areas and in public buildings.	*All Jurisdictions	BOC/ City Councils/ EMA	Flood, Wildfire, Severe Weather, Winter Storm	F3	1, 2, 6	Structural	1,000,000	General Funds, FEMA	4 years	Ongoing As funding becomes available	Medium
51.	Update 911 equipment as needed.	Washington County/EMA	EMA/ Sheriff	All hazards	F1, F3	1, 2, 6	Structural	500,000	General Funds, FEMA	1 year and Continual	Ongoing As funding becomes available	High
52.	Request that all new education facilities be designed to serve as public shelters for emergency purposes.	*All Jurisdictions	BOC/ City Councils/ BOE/EMA	All hazards	F7	1, 2, 6	Non-Structural	Staff Time	General Funds	1 year and Continual	Ongoing	High
53.	Promote and participate in the following American Red Cross Programs • Disaster Resistant Neighborhoods Program • Business and Industry Preparedness Seminar • Community Disaster Education Preparedness presentations	*All Jurisdictions	BOC/ City Councils/	All hazards	F4, F8, F9	1, 2 ,3	Non-Structural	25,000	General Funds, FEMA	2 years and Continual	Ongoing	Medium

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
54.	Work with local cable and radio providers to enhance and broadcast public education on Emergency Preparedness.	*All Jurisdictions	BOC/ City Councils/	All hazards	F8, F9	1, 2 ,3	Non-Structural	Staff Time	General Funds	1 year and Continual	Ongoing	High
55.	Implement GIS technology on fire and emergency management vehicles so data can be readily available in the field so more accurate, timely assessments for future mitigation planning activities.	*All Jurisdictions	BOC/ City Councils/	Flood, Wildfire, Severe Weather, Winter Storm	F9, F10	1, 2, 6	Non-Structural	50,000	General Funds, FEMA	1 year and Continual	Ongoing	High
56.	Seek funding to purchase ambulance	Washington County/ EMA/EMS	EMA/EMS	All Hazards	F4, F8, F9	1, 2	Non-Structural	500,000	General Funds, FEMA	2 years	New As funding becomes available	High
57.	Pave Roads in county that are unpassable due to flooding	Washington County	BOC/ Road Dept.	Flood, Severe Weather,	A1, A2	1, 2, 4, 5	Structural	$1,500,000	General Funds T-SPLOST FEMA, DOT	2 years	New As funding becomes available	Medium
58.	Review existing comprehensive, development and land use plans to address flood prone areas.	*All Jurisdictions	BOC/ City Councils/	Flood	A1, A2	1, 2, 4, 5	Non-Structural	Staff Time	General Funds	3 years and continual	Ongoing	Medium
59.	Preform procurement to contract with debris removal firm to have contract in place before hazards to ensure firm can move in immediately.	Washington County/ Sandersville	BOC/ City Councils/	Winter Storm, Severe Weather, Flood, Wildfire,	A4, F2	1, 2	Non-Structural	Staff Time	General Funds	3 months	New	High
60.	Continue update of EMA website and Facebook page with information pertaining to Emergency	Washington County	EMA	All hazards	G4, G5, G6, G7, G8, G9.	1, 2 ,3	Non-Structural	Staff Time	General Funds	Continual	Ongoing	High

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time Frame	Status	Priority
	Preparedness.											
61.	Create a database to record hazard event information.	*All Jurisdictions	EMA, BOC, City Councils, RC	All hazards	G10	1, 2, 3,	Non-Structural	Staff Time	General Funds	2 years	Stalled due to lack of staff	Medium
62.	Conduct dam breach analysis to identify assets and population at risk in the event of a failure.	*All Jurisdictions	EMA, BOC, City Council, RC	Dam Failure	B1, B2	1, 2,	Non-Structural	75,000	General Funds, DNR	3 years	Ongoing As funding becomes available	Medium
63.	Draft ordinance prohibiting development in dam breach zone.	Washington County/ Sandersville	BOC, City Council, RC	Dam Failure	B2	1, 2, 4	Non-Structural	Staff Time	General Funds	2 years	Ongoing As funding becomes available	Medium
64.	Install dam failure alert systems.	*All Jurisdictions	BOC, City Council, Publicwork	Dam Failure	G4	1, 2, 6	Structural	50,000	General Funds, DNR	4 years	Ongoing As funding becomes available	Medium
65.	Inventory existing road equipment and purchase needed equipment to maintain roads before, during and after a hazard event.	Washington County/ Sandersville	BOC, City Council, Public Works, Road Depts.	Flood, Severe Weather, Winter Storm	G2	1, 2	Non-Structural	250,000	General Funds, FEMA	2 years	Ongoing As funding becomes available	Medium

A. New Buildings and Infrastructure: All objectives and action steps are applicable to new buildings and infrastructure.

B. Existing Buildings and Infrastructure: All objectives and action steps are applicable to existing buildings and infrastructure except adopt building codes. Enforcing building codes on existing buildings is not always feasible. Buildings maybe retrofitted but cannot always be brought up to stricter regulations.

C. Special Multi-Jurisdictional Strategy and Considerations: During a natural hazard, it is imperative that all emergency personal can communicate with each other throughout the entire planning area. The County has numerous dead spots throughout the area due to topography and lack of adequate communication equipment. The County and its emergency personnel are dependent on the private sector for towers to use for signals. If these towers are ever removed, the County will be without any adequate means to transmit signals.

Another concern is the lack of available data for the county and individual jurisdictions on hazard events. A database needs to be created and maintained that provides information on flooding events that occur. This database should include information such as location (road names, neighborhoods, GPS coordinates, etc.), damages reported, power outages, road closures, county and city personal that are dispatched to the area, etc.

D. Completed and Deleted Action Steps from Original Plan:

Flood

- Determine the elevation of critical facilities in known flood areas and seek funding to relocate if necessary. Completed.
- Have flood Hazard Baes Maps Created. This was removed due to lack of funding.
- Update Floodplain Maps. FEMA updated all maps in 2010.
- Participate in the NFIP. Washington County joined in 2014, Davisboro in 2013 and Deepstep in 2016.
- Review and adopt flood plain ordinances as needed. Completed for those that participate.
- Review set back requirements from top of banks of creeks and from top of banks of major rivers. Completed set back requirements are consistent with the DNR guidelines.
- Review existing comprehensive, development and land use plans to address flood prone areas. This was completed during the 2004-2024 Comprehensive Plan Update.
- Install measuring devices in creeks, ponds, etc. to provide a warning when water levels become dangerously high. All have monitors.
- Identify property owners who are located in areas continually subject to flooding and relocate or mitigate. There are no repetitive flood properties.
- Cap wells not in use and increase wellhead waterproofing. Deleted deals with private property. Added back as an education component.

- Ensure wellhead elevations are above known flooding levels. Handled by Health Dept.
- Storm Drainage Project was completed on Maple and Cypress for 500,000

Dam Failure

- Perform Field Survey including dams, spillways, downstream cross section, and downstream structures with breach zone. Removed due to funding constraints.

Drought

- Identify and inventory all vulnerable agricultural properties to include livestock and develops a protective action plan. Removed, as this is private property.
- Study the range of federal support programs available to assist Washington County's agriculture community. Removed as this is private property and all farmers know about assistance.
- Water Use Ordinances was removed from the plan. All jurisdictions have adopted GA EPD guidelines.
- Conduct a study of proactive measures for Warren County agriculture to include livestock watering ponds and capturing storm water runoff. Removed since this is private property.
- Seek funding for wells that have gone dry and been removed. Funding does not exist for this activity as a grant. It is a loan and must be applied for by private citizens.

Wildfire

- Seek funding for reverse 911 was removed from the plan as technology is obsolete and the county has implemented CODE RED

Severe Weather

- Seek funding for reverse 911 was removed from the plan as technology is obsolete and the county has implemented CODE RED.
- Inspect all county and municipal critical facilities for proper grounding. Completed.
- Review building codes for proper wind strength and safety regulations and for consistency with state and federal regulations. Building Codes are in compliance.
- Provides NOAA weather radios to elderly and handicap populations. Promoting Code Red.
- To the greatest extent possible, identify all owners of inadequately installed manufactured homes offer a financial incentive to retrofit them with an appropriate level of anchoring and support. Removed.
- Equip school buses with Automated Vehicle Location. Removed this decision will be made by the Board of Education.

Winter Weather

- Seek funding for reverse 911 was removed from the plan as technology is obsolete and the county has implemented CODE RED

- Encourage harvesting of trees along utility and road corridors, preventing potential winter storm damage.. This is performed by the electric companies. This action step was deleted.

E. Unchanged and/or Ongoing Action Steps: The following mitigation steps remain in the plan. Based on the STAPLEE Criteria these unchanged action steps were found to be relevant in limiting the damage to people and property from a natural hazard. All action steps have been reformatted to meet the action step criteria established by GEMA and FEMA after the original plan was approved. The new table format from GEMA Plan Update Guidance Template 2012 has been used to organize action steps. STAPLEE worksheet can be found in Appendix D for each action step.

Flood:

- Continue to assess storm water run-off.
- Seek funding to construct more storm-water retention facilities, storm-drain improvements and channel improvements to protect existing and new developments.
- Recommend that run-off and water retention ditches be cleared.
  - This is being done by the Washington County Road Department and is a continual goal.
- Promote the preservation of areas in and around watercourses.
- Add greenspace to known flood prone areas.

Dam Failure:

- Conduct dam breach analysis to identify assets and population at risk in the event of a failure.
- Draft ordinance-prohibiting development in dam breach zone.
- Install dam failure alert systems.

Drought

- Evaluate existing water system. Upgrades have been made for around $750,000 to the water system over the last 3 years.
- Increase public awareness of watering restrictions.
  - Adopted the Georgia DNR Drought Management Plan and the Statewide Outdoor Water Use Schedule. The Georgia Water Stewardship Act went into effect statewide on June 2, 2010.
- Educate citizens on water conservation.
- Promote increased surface water usage for irrigation.
- Promote usage of surface artesian flow for irrigation.

Wildfire

- Seek funding to install more fire hydrants. Installed nine new hydrants.
- Review previous firefighter training and implements a schedule for the ongoing training of all firefighters to include wildland fire training.

- Seek funding for needed firefighting equipment. Over the last five years 10 sets of firefighter protective clothing have been purchased for approximately$ 20,000
- Seek funding for more fire tankers (2000 to 3000 gallons) for local fire departments. Purchased two brush trucks
- Increase public awareness of wildfire dangers by publishing articles in the local newspaper and providing bulletins to local churches and the schools.
- Recommend a defensible space (30-ft minimum setbacks) between buildings and strictly follow GFC guidelines for control burns and permits.
- 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 and providing bulletins to local schools.
- Participate in the Firewise Community Initiative where appropriate.

Severe Weather

- Inspect public buildings and critical facilities and retrofit to reinforce windows, doors, and roofs as needed.
- Provide NOAA weather radios to elderly and handicap populations.
- Review current evacuation plans paying particular attention to vulnerable populations and update as needed.
- Review and current Emergency Response Plan and update when needed.
- Install generators where needed.
- Install generators on all new critical facilities.
    - Six generators were installed at critical facilities as ma result of the ice storm in 2014.
- Seek funding to ensure all current and future emergency shelters have back-up generators.
- Educate the public on shelter locations and evacuation routes.
- Develop public education and awareness programs regarding severe weather events to include home safety measures, purchase of weather radio and personal safety measures before, during and after severe event weather.
- Promote and participate in the following American Red Cross Programs
    i. Disaster Resistant Neighborhoods Program (educating communities)
    ii. Business and Industry Preparedness Seminar (educating businesses on business continuity planning)
    iii. Community Disaster Education Preparedness presentations

Winter Weather

- Implement a winter-storm education program to include winterization of home and/or business and what to do before, during and after the winter storm event.
- Install generators where needed.

All Hazards

- Create an EMA website with information pertaining to Emergency Preparedness. Website has been created and goal has been changed to update.

CHAPTER IV. PLAN INTEGRATION AND MAINTENANCE

The table below provides a brief description of each section in this chapter and a summary of the changes that have been made.

Chapter 1 Section	Updates to Section
I. Implementation Action Plan	Revised to follow New GEMA planning template
II. Evaluation, Monitoring, Updating Note whether the original method and schedule worked	Revised to follow New GEMA planning template
III. Plan update and maintenance	Regulated update and maintenance schedule and public involvement

SECTION I. Implementation Action Plan

A. Administrative Actions: Washington County Emergency Management Agency was responsible for overseeing the original PDM planning process and the plan update. Facilitation of the planning process was conducted by the Central Savannah River Area Regional Commission. The Washington County Board of Commissioners has authorized the submission of this plan to both GEMA and FEMA for their respective approvals. The governing bodies for Washington County, Davisboro, Deepstep, Harrison, Oconee, Riddleville, Sandersville, and Tennille have formally adopted this plan after approval from GEMA and FEMA was obtained.

B. Authority and Responsibility: Upkeep and maintenance of the plan shall be the responsibility of the EMA Director, as determined during the planning process. It shall be the responsibility of the EMA Director to ensure that this plan is utilized as a guide for initiating the identified mitigation measures within the community. The Washington County Board of Commissioners and the Mayors of all incorporated jurisdictions will be responsible for assigning appropriate staff members to implement the action steps identified in this plan for their jurisdictions. The EMA Director, or his designee, shall be authorized to call the committee to review and update this plan periodically (at least annually) throughout the useful life of the plan, not to exceed five years.

During the plan update process, the EMA Director and committee members shall identify projects that have been successfully undertaken in initiating mitigation measures within the community. These projects shall be noted within the planning document to indicate their completion. Additionally, the committee called together by the EMA Director shall discuss and identify any additional mitigation projects that are necessary in the community.

C. Prioritization: The mitigation goals, objectives and related action items were initially compiled from the input of the committee, as well as from others in the community. The committee prioritized the mitigation actions based on what would be perceived as most beneficial to the community, and the action steps have been listed in this plan as the committee prioritized them. Several criteria were established to assist committee members in

the prioritization of these suggested mitigation actions. Criteria included perceived cost benefit or cost effectiveness, availability of potential funding sources, overall feasibility, measurable milestones, multiple objectives, and both public and political support for the proposed actions.

1. **Methodology for prioritization:** To assist with the prioritization of mitigation actions, the STAPLEE worksheet and criteria recommended by FEMA was used. STAPLEE is a tool used to assess the costs and benefits and overall feasibility of mitigation actions. STAPLEE stands for the following:
    i. **Social:** Will the action be acceptable to the community? Could it have an unfair effect on a particular segment of the population?
    ii. **Technical:** Is the action technically feasible? Are there secondary impacts? Does it offer a long-term solution?
    iii. **Administrative:** Are there adequate staffing, funding and maintenance capabilities to implement the project?
    iv. **Political:** Will there be adequate political and public support for the project?
    v. **Legal:** Does your jurisdiction have the legal authority to implement the action?
    vi. **Economic:** Is the action cost-beneficial? Is there funding available: Will the action contribute to the local economy?
    vii. **Environmental:** Will there be negative environmental consequences from the action? Does it comply with environmental regulations? Is it consistent with community environmental goals?

    The committee was asked to review the STAPLEE score sheet with a list of mitigation actions and assign a High, Medium or Low score to each item to help determine the item's priority. Each action item was discussed and a consensus reached by the group on the importance of each item.

2. **Use of cost benefit refer to Worksheet #4:** Through the STAPLEE prioritization process, several projects emerged as being a greater priority than others. Some of the projects involved expending considerable amounts of funds to initiate the required actions. Other projects allowed the community to pursue completion of the project using potential grant funding. Still others required no significant financial commitment by the community.

    The determination of the cost benefit of a project was based upon the anticipated cost in relation to the perceived benefit of the action taken. A proposed action with a high price tag, but minimal benefit to the community, was considered to have a low cost benefit. Conversely, if minimal expenditures were required and the entire community would benefit, this received a favorable cost benefit rating. All proposed mitigation actions were evaluated to determine the favorability of the benefit in relation to the cost associated with completing the project. Determining the economic feasibility of mitigating hazards can provide decision makers with an understanding of the potential benefits and costs of an activity, as well as a basis upon which to compare alternative projects.

3. **Use of other calculations:** Estimation of potential damages and costs in the event of a natural hazard achieves two ends: (1) it enables the identification of critical economic targets for mitigation measures and (2) to enhance the ability to prioritize post-disaster response in aiding the community to recover.

4. **Use of other review structure**: All goals were discussed in detail to determine what was considered a priority for the EMA personnel.

D. Incorporation of Local PDM Plan into other plans/planning measures: The jurisdictions completed an update to their Joint Comprehensive plan and STWP in 2016. The 2012 plan was reviewed to determine if mitigation activities needed to be added. Washington County and all seven municipalities worked jointly to produce these planning documents.

The STWP will be updated in 2021 and the Joint Comprehensive Plan is due for an update in 2026. The RC facilities the planning process for both documents and updates both plans. Washington County takes the lead and all jurisdictions must participate to complete the comp plan and STWP. This Plan will be reviewed by Washington County and all seven municipalities. The requirements of this Hazard Mitigation Plan will be taken into consideration and will be incorporated into Comprehensive Plans, Five-Year Short-Term Work Program, Local Emergency Operations Plans, and all other such Plans as appropriate. This hazard plan will be reviewed and incorporated into the Joint Comprehensive plan and STWP update as needed. In addition, relevant sections of the 2016 plan were included in the revision of the Washington Local Emergency Operations Plan in 2019. This hazard plan update will also be reviewed in the next update of the LEOP.

Once this plan is approved, it will be used by the consultants and planning committees responsible for the update process for the Joint Comprehensive Plan, Short-Term Work Programs, and all other plans that could incorporate the requirements of this plan.

To facilitate inclusion of this Plan, the Washington County and all seven municipalities will provide a copy of this Plan to the persons and/or committees responsible for writing and updating plans.

SECTION II. EVALUATION, MONITORING AND UPDATING

The original method for evaluation of the plan was unsuccessful. While the plan was discussed at EMA meetings, little attention was given to the monitoring and evaluation of the plan. Changes have been made to ensure a more successful and meaningful use of this plan.

A. Method: The Plan is intended to be a 'living' document that informs stakeholders about hazard mitigation projects and plans undertaken by the county and their jurisdictions. In accordance with the requirements set forth in the Disaster Mitigation Act of 2000, Washington County is required to review the plan annually and revise the plan every five years. The revision process will be consistent with the FEMA planning requirements as stipulated in the 44 CFR 201.6.

B. Criteria to be used to monitor and evaluate the plan annually or after any natural disaster event.

a. Each hazard will be reviewed. Any new information pertaining to new and/or previous events will be added to the plan.
b. Any new critical facilities will be added to the plan.
c. Critical facilities information will be updated as needed.
d. All mitigation goals, objectives and action steps will be reviewed for relevance and completion status. All mitigation goals, objectives and action steps that have been completed or are no longer relevant will be documented.
e. New mitigation activities will be added if necessary.
f. Public participation will be monitored and documented.

C. Responsibility: At the direction of the EMA Director, the committee shall be reconvened for the revision process that will include a schedule, timeline, and a list of the agencies or organizations participating in the plan revision. Washington County and all municipalities have designated the following participants of the committee to guide plan maintenance and update activities to ensure that the information in the plan is current. The update committee will also be responsible for disseminating information to stakeholders within their respective jurisdictions.

Jurisdiction	Hazard Mitigation Update Committee Point-of-Contact	Review Schedule
Washington County	Emergency Management Director	Annually
City of Davisboro	Fire Chief	Annually
Town of Deepstep	Mayor	Annually
Town of Harrison	Mayor	Annually
Town of Oconee	Mayor	Annually
Town of Riddleville	Mayor	Annually
City of Sandersville	Fire Chief	Annually
City of Tennille	Police Chief	

D. Timeframe: The committee has set the second Tuesday of every July for the annual review of the plan update and within two months after any natural disaster event. A public notice will be submitted to the legal organ of each jurisdiction and the notice will be published at all government and community buildings.

SECTION III. PLAN UPDATE AND MAINTENANCE

A. Public involvement: Washington County is committed to having active public participation during reviews and updates of the PDM Plan. Public participation will follow the guidelines set forth in 44 CFR 201.6. Future public involvement of the community will be more stringent. The original method of posting notices at the government office and posting twice in the paper was not as successful as anticipated in ensuring community involvement. With this in mind, two weeks before the annual December review meeting, a notice will be published in the legal organ of Washington County. Flyers will be placed at all government, and community gathering places to ensure that citizens of the county are made aware of the

annual review process. The flyer will also be given to community organizations. The process of providing information to community organizations and gathering places will ensure that the public is aware of the planning process. The new EMA website will also provide ongoing information about the plan and its implementation

B. Timeframe: At the direction of the EMA Director, the committee will convene in order to accomplish the revisions the second Tuesday of every July. The EMA Director will ensure the revised plan is presented to the Washington County Board of Commissioners for formal adoption. In addition, all holders of the County plan will be notified of affected changes. No later than the conclusion of the five-year period following initial approval of the update plan, the EMA Director shall submit the update PDM Plan to the Georgia Emergency Management Agency and the Federal Emergency Management Agency for their review and coordination.

CHAPTER V. Conclusion

SECTION I. Summary

Through the update process of this plan, Washington County has developed a more thorough hazard history, an inventory of critical facilities, and an updated contact list for emergency contacts at critical facilities. Natural hazards have been identified countywide. Goals, objectives and mitigation actions that would reduce the risk of lives and property because of the identified hazards have been compiled and prioritized. The committee has been able to work together effectively and efficiently to produce this document and establish a greater awareness of our risks and our mitigation strategies.

As a result of the update to the PDM planning process, Washington County officials have obtained more complete and accurate information and knowledge regarding the County's disaster history, the presence of natural hazards, and the likelihood of each of these hazards occurring within the County, and the potential impacts and challenges these hazards present to the community.

All meetings were open to the public and advertised in *The Sandersville Progress*, providing Washington County citizens with the opportunity to comment on and offer suggestions concerning disaster mitigation actions within the community.

The committee found that it is difficult to predict the geographic threat, and therefore the resulting impact of some natural disasters as compared to others. Tornados and related severe weather strike randomly, usually affecting a small, localized area. On the other hand, natural disasters such as winter ice storms and drought can blanket the entire county, affecting all businesses, public facilities, and residents.

Recognizing this challenge, the committee identified both general and specific measures to aid in the mitigation of several natural hazards most likely to impact Washington County. These measures include, but are not limited to, the protection of critical facilities and infrastructure, progressive governmental policies, and the proactive use of codes and regulations. It is worth

noting that local government policies can often be the single most important and cost efficient component of PDM.

The mission of the Washington County Pre-Disaster Hazard Mitigation Planning Committee is to "*Make the citizens, businesses, communities and local governments of Washington County less vulnerable to the effects of natural hazards through the effective administration of hazard mitigation grant programs, hazard risk assessments, wise floodplain management and a coordinated approach to mitigation policy through state, regional and local planning activities.*"

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

SECTION II – REFERENCES

Numerous sources were utilized to ensure the most complete planning document could be assembled. In an effort to ensure that all data sources consulted are cited, references are listed in the following format: 1) Publications, 2) Web Sites, 3) Other Sources.

Publications:

FEMA Pre-Disaster Mitigation *How-to Guides #1, 2, 3, 7* (FEMA)
GEMA Supplements to FEMA Pre-Disaster Mitigation How-to Guides (GEMA)
The Sandersville Progress
The Augusta Chronicle
Summary of Floods in the United States During 1990 and 1991
http://pubs.er.usgs.gov/publication/wsp2474
FLOODS IN GEORGIA. FREQUENCY AND MAGNITUDE. By. R. W. Carter.
Http://pubs.usgs.gov/circ/1951/0100/report.pdf
Georgia Archives University System of Georgia
http://cdm.sos.state.ga.us:2011/cdm/search/searchterm/FLOOD/mode/all/order/subjec/ad/desc
FEMA www.fema.gov
GEMA www.gema.state.ga.us
Georgia Department of Community Affairs http://www.dca.state.ga.us/
Georgia Department of Labor https://explorer.gdol.ga.gov/gsipub/index.asp?docid=387
Georgia Forestry Commission http://weather.gfc.state.ga.us
National Climatic Data Center www.ncdc.noaa.gov
SHELDUS™ | Spatial Hazard Events and Losses Database for the United States
http://webra.cas.sc.edu/hvri/products/sheldus.aspx
National Inventory of Dams http://crunch.tec.army.mil/nid/webpages/nid.cfm
https://www.anyplaceamerica.com/directory/ga/washington-county-13303/
New Georgia Encyclopedia http://www.georgiaencyclopedia.org/nge/Home.jsp
Georgia Archives University System of Georgia
http://cdm.sos.state.ga.us:2011/cdm/search/searchterm/FLOOD/mode/all/order/subjec/ad/desc
United States Census Bureau http://www.census.gov/
USDA, NASS, 2016 CENSUS OF AGRICULTURE
http://www.nass.usda.gov/Census_of_Agriculture/index.asp
http://www.sercc.com/ The Southeast Regional Climate Center (SERCC)
http://www.tornadohistoryproject.com/tornado/Georgia Tornado History Project

Other Sources:

American Red Cross
CSRA Regional Commission
Georgia Department of Natural Resources
Georgia Forestry Commission
Washington County Board of Education
Washington County Tax Assessor

APPENDICES

Appendix A – Hazard Identification, Risk Assessment and Vulnerability (HRV)

I. Hazard A - Flood
   a. Description
   b. Data – GEMA Critical Facility Inventory Report
   c. Maps

II. Hazard B – Dam Failure
   a. Description
   b. Data– GEMA Critical Facility Inventory Report
   c. Maps

III. Hazard C - Drought
   a. Description
   b. Data– GEMA Critical Facility Inventory Report
   c. Maps

IV. Hazard D - Wildfire
   a. Description
   b. Data– GEMA Critical Facility Inventory Report
   c. Maps

V. Hazard E – Severe Weather, Including Tornados, Tropical Storms, and Thunder Storms
   a. Description
   b. Data– GEMA Critical Facility Inventory Report
   c. Maps

VI. Hazard F – Winter Storm
   a. Description
   b. Data– GEMA Critical Facility Inventory Report
   c. Maps

Appendix B – Growth and Development Trends / Community Information

I. Local Comp Plan Executive Summary
II. Statistics/tables from Local Comp Plan
III. Community Information

Appendix C –Planning documents

I. Executive Summary Local Emergency Operations
II. Hazard Risk Analysis
III. Flood Insurance Study
IV. Community Wildfire Protection Plan
V. Timber Impact Assessment GFC
VI. Soil Survey Washington and Wilkinson
VII. Executive Summary CSRA Regional Commission Regional Plan

Appendix D – Worksheets used in planning process

I. Completed GEMA/local worksheets
II. Blank GEMA/local worksheets
III. Other misc. worksheets or planning process documents

Appendix E – Copies of Required Planning Documentation

I. Public notice
II. Meeting Agendas / Meeting Minutes
III. Sign-in sheets
IV. Local proclamations (copy of all resolution)
V. GEMA/FEMA correspondence