Jenkins County, Georgia
Multi-Hazard Pre-Disaster Mitigation Plan
Original Plan Approval: 05/20/2009
Update Plan Approval: 01/09/2015
Second Update Approval 00/00/2020





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CHAPTER I. INTRODUCTION TO THE PLANNING PROCESS

Table 1.1 provides a brief description of each section in this chapter 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 was collected
III. Description of how each section of the original plan was reviewed and analyzed and whether it was revised	All sections of the original plan were analyzed and revised.
IV. Organization of the plan	The plan is organized by GEMA local planning Local Hazard Mitigation Plan Update Template 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)	Reviewed and updated information regarding multijurisdictional concerns
VII. Adoption, implementation, monitoring and evaluation	This was evaluated and remains the same. Additional text was added to clearly delineate the task of implementation and monitoring. Plan was 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 Jenkins County 2019 Update is the review and improvement to our Multi-Hazard Pre-Disaster Mitigation Plan approved on May 20, 2009 and reapproved on January 9, 2015. The 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 Act is administered by the Georgia Emergency Management Agency (GEMA) and the Federal Emergency Management Agency (FEMA). 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 update has involved multiple community partners including elected officials, city and county

personnel, fire, emergency management, law enforcement, and public works. The update covers Jenkins County to include the city of Millen. The ultimate goal of this plan is to identify all natural disasters that threaten the lives and properties of our community and develop strategies to lessen their impact. The scope of the update includes both short- and long-term mitigation strategies, implementation policies and possible funding sources. It identifies mitigation strategies implemented since the 2014 update. The plan also contains the following information on:

- The vision of mitigation in our community;
- The profile of Jenkins 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;
- Jenkins 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 Jenkins 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 Jenkins County's current policies, goals and regulations that pertain to hazard mitigation;
- Documentation of the planning process;
- Updated hazard events that occurred since 2014;
- Updated critical facilities added since 2014;
- Documented current mitigation strategies implemented since 2014; and
- Examined and updated mitigation strategy goals, objectives and action steps.

The update is the product of the combined efforts of Jenkins County and Millen. Realizing that identifying the community's risks and working collectively toward the prevention of disasters is in the county's best interest, the Jenkins 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 Jenkins County and Millen.

Continued mitigation planning is imperative to lessen the impacts of disasters in Jenkins County and Millen. 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 which 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 Jenkins County Board of Commissioners (BOC) contracted with the Central Savannah River Area Regional Commission (RC) to assist in the update. The RC has assisted eleven counties in the completion and update of their Pre-Disaster Mitigation Plans. The RC is currently assisting six counties with their second update. The RC was tasked to review the current plan and identify new information to incorporate 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 Alvin Burke assembled the Hazard Mitigation Planning Committee. Table 1.2 identifies the 2019 members.

Table 1.2

Name	Agency/Title	Jurisdiction
Grady Saxon	County Administrator	Jenkins County
Mandy Underwood	JC Development Authority Director	Jenkins County
Jeff Brantley	City Manager	City of Millen
Richard Lane	GFC Ranger	Jenkins County
Sarai Register	Sheriff's Office Administrative Secretary	Jenkins County
Gheorghe Register	Public Safety Officer	City of Millen
Grady Lane	Public Works Director	Jenkins County
Robert Oglesby	Sheriff	Jenkins County
Erin Drake	Senior Citizens Center Director	Jenkins County
Wayne Chance	Core Civic Safety Manager	Jenkins County
Talamadge Fries	Board of Education Transportation Director	Jenkins County
Tara Cooper	JC School System Superintendent	Jenkins County
Rhonda Fields	Health Dept. Nurse Manager	Jenkins County
David M. Adams	Medical Center CEO	Jenkins County
Clay Boulineau	Public Works Director	City of Millen
Henry Young	EMS Director	Jenkins County
Dwayne Herrington	Director of Public Safety	City of Millen
Jennifer Rich	DFCS Director	Jenkins County
John Thomas	Public Works Superintendent	City of Millen
Lisa A. Dailey	Recreation Director	Jenkins County
Hiller Spann	Commission Chairman	Jenkins County

The 2019 committee was responsible for the organization, data collection and completion of the plan. It was the responsibility of the committee to include all pertinent departments within their respective governments and to request information as needed. The following agencies/departments/organizations provided specific information and support for the original plan and provided any new information for the update:

- Jenkins County School District was responsible for providing structural replacement and content values for all schools as well as square footage and occupancy limits.
- Millen Police Department provided staff support and were responsible for providing structural replacement and content values for all critical facilities as well as square footage and occupancy limits.
- Jenkins County Sheriff's Office provided staff support to the planning effort.
- Jenkins County Health Department, Optim Medical Center, and Jenkins County DFCS, identified vulnerable populations. They also provided replacement and content value estimates for their properties.

- Millen Fire Department provided staff support to the planning effort and assisted with identifying occupancy limits for some of the critical structures and replacement and content value estimates.
- Jenkins County Road Department provided information on past effects on roads during hazard events.
- Millen city officials provided information relative to their jurisdiction and provided replacement and content value estimates for their critical facilities as well as square footage and daily occupancy.
- Georgia Forestry Commission provided data on wildfire events and assisted with the formulation of mitigation measures.
- Jenkins County Chamber of Commerce assisted in identifying major businesses.
- Jenkins County BOC Administrator provided information about county government buildings including respective replacement and content value estimates along with square footages.
- Jenkins County Tax Assessor's Office provided most of the aggregate values for the critical structures. The valuations had to be converted to full values since they are figured at 40 percent of actual value. This information, combined with demographic data, is compiled on GEMA Worksheet #3a in Appendix A for all jurisdictions.
- The RC's Geographical Information System (GIS) Department produced several of the maps. Maps are located in Appendix A and C.

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 1.3 provides a list of existing planning documents used during the update.

Table 1.3

Record of Review		
Existing planning mechanisms	**Reviewed (Yes/No)**	**Method of use in Hazard Mitigation Plan**
Jenkins County Joint 2018-2028 Comprehensive Plan	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

Record of Review		
Existing planning mechanisms	**Reviewed (Yes/No)**	**Method of use in Hazard Mitigation Plan**
Land Use Maps	Yes	Assessing vulnerabilities; Development trends; Future growth
Critical Facilities Maps	Yes	Locations
Community Wildfire Protection Plan	Yes	Mitigation strategies, risk assessment
Flood Insurance Study	Yes	Review for historical Data and Information
CSRA Regional Plan 2035	Yes	Development trends; Future growth, regional concerns and data

The County does not have a specific Flood Mitigation Assistance Plan nor a Flood Insurance Plan. The above list of plans, codes, ordinances, and studies were reviewed to determine the ability of the County and City to implement a comprehensive mitigation strategy and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, or projects. This review helped to identify new action steps and shifts in prioritization since the last update as well as determine recent accomplishments, activities, and trends.

The committee held six meetings over a 24-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 updating the goals, objectives, and action steps identified in the plan. The committee researched previous hazard information in the areas of flooding, wildfires, tornados, winter storms, hurricanes, high winds, dam failure, lightning, hail, and drought. Other hazards, such as Avalanche, Coastal Erosion, Coastal Storm, Earthquake, Expansive Soils, Extreme Heat, Land Slide, SLOSH (Sea, Lake and Overland Surges from Hurricanes), Tsunami, and Volcano, were examined and determined not to be of sufficient significance in the community to warrant their inclusion in the present Hazard Mitigation Planning effort, based on past history and available data. 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 1.4 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 six meetings, two were advertised in *The Millen News*, 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, Lincoln, McDuffie, Richmond, Taliaferro, Washington, 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 1.4

Meeting Date	Purpose of Meeting
February 22, 2018	Advertisement ran in *The Millen News* for kick-off public meeting on February 26, 2018.
February 26, 2018	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 2014 plan update.
March 22, 2018	Emergency Preparedness Coalition Meeting to discuss mitigation strategies, accomplishments, and LEOP update incorporation into the PDM plan.
October 4, 2018	This meeting was a continuation of the March 22, 2018 meeting. Emergency Preparedness Coalition Meeting to discuss mitigation strategies, accomplishments, and LEOP update.
February 7, 2019	Shelby Meyers, from GEMA provided a presentation of the Hazard Risk Analyses Supplement Completed by UGA.
June 13, 2019	Final over view of plan to ensure all jurisdictional information was correct and review final mitigation strategies.
To Be Added after FEMA Approval	Advertisement ran in *The Millen News* Advertising for public review and the final meeting ***date will be added after FEMA approval***
To Be Added after FEMA Approval	After GEMA submitted the plan to FEMA and FEMA Approved Pending Adoption (APA), the public was invited to review the final plan prior to adoption during (will be added after APA) time frame. The meeting was held after the aforementioned 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 2014 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 Jenkins County and Millen.

SECTION IV. ORGANIZATION OF THE PLAN

The estimated time to complete the plan update was approximately 24 months. Plan completion is 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.

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

The committee 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. These goals and objectives are as follow:

- To actively involve and gain support from the City of Millen and Jenkins 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 Jenkins County and Millen.
- Monitor, evaluate, and update the progress of the plan as needed.
- To form partnerships among local, state, and federal agencies to make Jenkins 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 Jenkins County and Millen.

An HRV assessment was accomplished by 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 Jenkins County and Millen 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 committee identified six major hazards that have the potential to affect Jenkins County: flooding, dam failure, drought, wildfire, tornados, tropical storms, severe weather (thunderstorms and lightning) and winter storms. The update committee reviewed current hazard data and added hail to the already identified hazard. Appendix A provides an updated comprehensive table for each hazard event.

Profiling Hazard Events: The committee analyzed the causes and characteristics of each hazard, and its effect on Jenkins 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 A.

Estimating Losses: Using the best available data, tax digest data, parcel maps and GMIS critical facilities reports and maps 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. The FEMA STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) criteria worksheet was used to evaluate each mitigation action step to identify strategies best for Jenkins 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. A copy of the STAPLEE is located in Appendix D.

SECTION VI. MULTI-JURISDICTIONAL SPECIAL CONSIDERATIONS

Jenkins County and Millen provided active participants in the planning process and have identified mitigation goals, objectives and action items specific to their jurisdiction. The governing bodies for the county and all municipalities have formally adopted the Jenkins County Multi-Hazard Pre-Disaster Mitigation Plan.

The municipalities were notified in September 2017 of the requirement concerning the update. Representatives from the County and Millen 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 in an effort to ensure that all information was correct and that all agencies and organizations input was included.

The EMA Director led activities for mitigation planning countywide. The committee's goal is to work in partnership with the all jurisdictions toward a common mitigation strategy that significantly reduces the vulnerability of natural disasters. Most natural threats overlap jurisdictions and are all susceptible to their affects. Jenkins County and Millen 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.

SECTION VII. ADOPTION, IMPLEMENTATION AND MONITORING AND EVALUATION

Adoption Date

Jurisdiction	Adoption Date
Jenkins County	***To Be Added after FEMA Approval***
City of Millen	***To Be Added after FEMA Approval***

The plan was submitted to GEMA for review and then to FEMA for approval. Their respective governing bodies formally adopted the 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 Jenkins 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 Jenkins 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.
- Partner with businesses in effort to communicate with customers about the community hazards and possible solutions.

Individual citizens must be made aware of the hazards they face. Additionally, they must be educated in how to protect themselves from natural hazards. They must be shown mitigation is an important part of reducing loss of life and property in their community. Their support is critical to the success of any mitigation effort. The Jenkins 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 year. Additionally, Jenkins County will develop steps to ensure public participation throughout the plan maintenance process. Finally, this section describes how Jenkins County will incorporate the mitigation strategies identified in this plan into other relevant planning documents such as the Jenkins County Joint Comprehensive Plan, Short-Term Work program (STWP) and Local Emergency Operations Plan (LEOP).

SECTION VIII. COMMUNITY DATA

Political Boundaries - Jenkins County

Jenkins County

GA Department of Community Affairs Region 7

Georgia

History: Jenkins County was created in 1905. The county was named for Governor Charles J. Jenkins. The Jones House, near Millen, was built in 1762 as a stage coach stop. A century later, General Sherman's troops looted and set it afire on their march to the sea. Learning that the mistress of the house refused to leave her sickbed, the same troops extinguished the flames. The Big Buckhead Church, constructed in 1830, is one of the oldest structures in Georgia. The City of Millen was originally called Seventy-Nine or Old 79 because of its distance from Savannah.

Government: Jenkins County operates under a commission-based system of government with 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 only municipality is the City of Millen, which operates a Mayor and City Council-based system of government with five elected council members. Other officials charged with presiding over activities are the City Manager, Clerk, Attorney, Finance Officer, and Public Works Director.

Demographics: Presently, Jenkins County has a population of 8,340 persons.

Table 1.6

Category	Jenkins County	Millen
Population	8,340	3,120
Number of Households	3,192	1,226
Average Household Size	2.59	2.48
Race - White	54.9%	35.5%
Race - Black	40.5%	61.6%
Race - Hispanic	4.0%	2.4%
Race - Other	2.6%	1.3%
Median HH Income	$27,197	$22,551

Source: US Census Bureau and 2017 American Community Survey

Economy: In the year 2018, the average weekly wage for employment sectors was $600, compared to the statewide average of $993. The February 2019 unemployment rate was 5.4 percent. In 2018, the labor force in Jenkins County totaled 1,353. Of the total work force, 59.2 percent were employed in the service providing sector, followed by 10 percent in the goods producing sector and 30.5 percent in the government sector.

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. Table 1.7 provides a list of jobs, number of establishments and jobs along with average weekly wages per job for 2018 in Jenkins County.

Table 1.7

Annual Industry Distribution of Jobs and Average Wage in 2013 (NAICS)	Establishments	Jobs	Annual Average Wage Per Job
Total Covered Employment and Wages	**121**	**1,353**	**$600**
Total Private Sector	**106**	**940**	**$607**
Total Government	**15**	**412**	**$582**
Agriculture, forestry, fishing, hunting	10	17	$840
Mining, Quarrying, and Oil and Gas Extraction	0	0	$0
Construction	10	45	$715
Manufacturing	5	*	*
Wholesale trade	2	*	*
Retail trade	21	152	$411
Transportation, warehousing	5	4	$445
Utilities	1	*	*
Information	0	0	$0
Finance and Insurance	7	23	$597
Real Estate, rental, leasing	1	*	*

Annual Industry Distribution of Jobs and Average Wage in 2013 (NAICS)	Establishments	Jobs	Annual Average Wage Per Job
Professional, Scientific, Technical services	4	7	$766
Mgmt. of companies, enterprises	0	0	$0
Administrative and support and waste management and remediation services	9	*	*
Educational services	0	0	$0
Health care, social assistance	9	177	$654
Arts, entertainment, recreation	0	0	$0
Accommodation and food services	13	161	$281
Other services, except public administration	6	14	$583
Unclassified-Industry not assigned	3	4	$583

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

Climate: According to the National Weather Service, Jenkins County experiences all four seasons. Summers typically consist of long spells of warm and humid weather with afternoon high temperatures in the lower 90's and readings of 90 degrees or higher can be expected on 70 to 80 days. Overnight lows usually range from the upper 60's to lower 70's. Weather during winter months is more variable with stretches of mild weather alternating with cold spells. Winter high temperatures average in the mid 50's to lower 60's with lows averaging in the mid 30's. Temperatures of 32 degrees or lower can be expected on 40 to 50 days. Spring and autumn are characterized by much variability from day to day and from year to year. The average date of first freeze is in mid-November and the average date of the last freeze is in mid-to-late March.

Jenkins County averages 45 inches of rain per year. The number of days with any measurable precipitation is 91. On average, there are 218 sunny days per year in the county. The average July high is around 93 degrees and the average January low is around 37 degrees.

Physical Features: Jenkins County encompasses an area of roughly 352.7 square miles or 225,782 acres. Millen is the county seat and is located about 50 miles south of Augusta. Jenkins County is located between the mountains of north Georgia and seashores of coastal Georgia. Jenkins County is mostly in the Southern Coastal Plain Major Land Resource Area. A small area in the northwestern part of the county is in the Carolina and Georgia Sand Hills Major Land Resource Area.

The County is located in the Vidalia Upland Physiographic District, a moderately dissected area with a well-developed dendritic stream pattern on gravelly and clayey sands. Floodplains are narrow except along the principal rivers which have a wide expanse of swamp bordering both sides of the channel. Relief varies from 100 to 150 feet. Elevations in the district range from 500 feet in the northwest to 100 feet in the southeast indicating the regional dip.

Jenkins County is in the within the Southern Coastal Plain major land resource area, characterized by gently sloping, well drained sandy loam to sandy soils over friable sandy clay loam to clay subsoils that are sticky when wet. When fertilized and limed, soils produce high yields of corn,

peanuts, tobacco, small grains and soybeans. This province provides a fair to good suitability for residential and industrial foundations. A soil map is in Appendix A.

Transportation

Vehicle Traffic Vehicle Traffic: U.S. 25 passes through Jenkins County from north to south. The Savannah River Parkway, a new four-lane connector between Augusta and Interstate 16 in Statesboro and Savannah follows U.S. 25 in its north-south route.

Table 1.8

Mileage by Route and Road System Report 445 for 2017			
	Total Road Mileage	Lane Mileage	Vehicle Miles Traveled (VMT)
State Route	84.377	229	234,675
County Road	416.857	834	106,756
City Street	29.122	58	10,845
Total	**530.356**	**1,121**	**352,276**

Source: Georgia Department of Transportation, Office of Transportation Data, "445 Series Reports 2017."

Public Transportation: Public transportation is made 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. It is administered by the County and the Georgia Department of Transportation (GDOT). Public buses are also used to assist the elderly, providing transportation to senior citizens centers for congregate meals and to deliver meals.

Rail Traffic: Norfolk Southern, a Class I railroad, operates major freight corridors in and through Georgia. A major corridor is a north-south link along the eastern border of the state from Augusta through Savannah to Jacksonville, Florida (I-26/I-95). Approximately 25 miles of the rail line runs through Jenkins County. No state improvement projects are planned.

Air Service: The Millen-Jenkins County airport, located on 70 acres just five miles from Millen and is owned and operated by the county. The airport accommodates general aviation related activities, including recreational flying and agricultural spraying. The airport has one runway, runway 17/35, that is 5,000 feet-long and 75-feet wide and equipped with medium-intensity runway lighting (MIRL), precision path approach path indicators (PAPI), rotating beacon, wind cone, and segment circle. Current landslide facilities include a 300 square-foot administration building/terminal and 9 apron parking spaces. Commercial air travel is available at Augusta Regional Airport at Bush Field.

Utilities

Electricity: Residential electrical service is provided by two companies: Georgia Power and Planters EMC. As part of Georgia's modern integrated electrical transmission system, Jenkins County has excellent ability to supply industrial demands. Compared to 47 percent for the U.S., coal accounts for 84 percent of fuel used by the state's power generating plants. This assures long-term continuity. If demand exceeds 900kw, any supplier can step in and offer service.

Natural gas: Natural Gas Services is provided by the City of Millen.

Water: Jenkins County residents in the unincorporated areas are served by private wells with the exception of eight residents that fall within the Millen public water boundary. The Millen systems provides water to its residents by four deep wells with a maximum pumping capacity of 4.608 million gallons per day (GPD). The current daily demand on the water system is 544,000 GPD. There are currently 1,896 services, 1,562 active meters, and 290 fire hydrants in the city. The City maintains three storage tanks capable of storing 900,000 gallons. Water is treated at the well with chlorine, fluoride, and a preventative corrosion agent.

Sewer: There is no public sewer system serving the unincorporated county. County residential sewer treatment is by private septic tank systems. Millen provides public sewerage and wastewater treatment to customers within the city limits. The daily demand is 300,000 GPD with a capacity of 950,000 GPD. There are 136 customers in the city who live in low lying areas and have septic tanks. There is one oxidation pond with three cells located on 15-acres along U. S. Hwy. 25.

Solid Waste: Jenkins County provides green box drop-off locations for residential solid waste. There are 75 green box locations throughout the county. The county hauls its municipal solid waste to a solid waste facility located in Ridgeland, South Carolina. Utilizing city employees, Millen provides curbside pickup of municipal solid waste for its residents and green box dumpster locations for commercial businesses. Millen offers 65 green boxes at 35 sites in the city. Solid waste from Jenkins County and the city is taken to the county transfer station and then it is transported to the Hickory Hill Landfill in Ridgeland, South Carolina. The County owns and operates an MSW landfill, which is currently in closure, and a COD landfill as well as an inert landfill.

Communications: Jenkins County's cable services is provided by three companies provider is Comcast Communication, DirecTV, and Dish Network. AT&T and Comcast provide internet services in Jenkins County. Local print media consists of *The Millen News* (which serves as the legal organ of the county) and *The Augusta Chronicle*. Jenkins County is served by 13 AM radio stations and 16 FM radio stations. Seven television stations in metro Augusta broadcast in Jenkins County. They are WJBF, WAGT, WRDW, WAAU, WBPI, WCES, and WFXG.

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 Jenkins County Sheriff's Office.

Fire and Rescue: Jenkins County is protected by the Millen-Jenkins County Fire Department with a full time station in Millen along with six volunteer departments located throughout the county. The Georgia Forestry Commission maintains a county protection unit located three miles south of Millen on Hwy 17 to respond to wildfires throughout the county. The city of Millen is serviced by a pressurized water system with 290 hydrants available.

The Millen Fire Department has two 1,000 gallon pumper trucks and 1 ladder truck with nine paid personnel and 26 volunteer personnel. The City houses the County fire trucks and city personnel

respond to the County Fires. The County trucks consist of one 1,200 gallon pumper, one 1,000 gallon pumper and one 3,000 gallon tanker. The department has one rescue truck.

The South Jenkins Volunteer Fire Department's Station 5 has 1 pumper truck and one brush truck and operates with approximately 18 volunteers. The South Jenkins County Volunteer Fire Department District Six, has two pumpers, one tanker, and one brush truck. There are 17 volunteer firefighters.

The North Jenkins County Fire Department covers the unincorporated area of Jenkins County located north of the Ogeechee River. The department is made up of four stations. Combined, these stations operate four brush trucks, 3 tankers and four pumpers. There are currently 36 volunteers.

Jenkins County personnel are trained to perform the operations of the fire department under the most severe conditions. As a result, residents can rely on their fire departments in any situation because the volunteers recognize the importance of delivering high caliber emergency service to the public. Each firefighter is required to complete intense training each year. The training is a combination of classroom, hands on practical exercises and live fire training. All firefighters are required to pass and maintain minimum firefighter standards set forth by the State of Georgia.

The area within the city limits of Millen has an Insurance Services Office (ISO) Public Protection Classification Class 5 rating, while most of Jenkins County currently possesses a rating of 9. The Rural Fire Defense Program, in conjunction with the USDA has developed a system of Dry Hydrants and Drafting Sites throughout the county. Property owners are encouraged to install an approved dry hydrant in their ponds and lakes.

Law Enforcement: Jenkins County is served by the Jenkins County Sheriff's Office. The Sheriff's Office consists of eight full-time staff with arrest powers (including the Sheriff), two full time admins, eleven full time jailers/dispatchers and one part time dispatcher. The jailers/dispatchers work in E-911 as well. The Office operates a fleet of thirteen vehicles and averages 6307 calls per year.

The Millen Police Department has 12 full time employees and no part time employees and operate 11 cruisers and 1 investigator vehicle.

The Jenkins County Sheriff's Office and Jail currently houses inmates for the County and City. The jail was built in 2016 and is roughly 14,555 square feet which contains the office space, records area, and jail cells and service areas, as well as E-911.

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

Utilizing FEMA Worksheet #1 (Appendix D), the committee identified all natural hazards that affect Jenkins County to include the City of Millen. As a result of the planning process, the committee determined that eight natural hazards pose a direct, measurable threat: flooding, dam failure, drought, wildfire, tornados, tropical storms, severe weather (to include 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 then recording hazard event profile information. Of the eight hazards mentioned, the entire County is exposed to six: tornados, tropical storms, severe weather, winter storms, wildfire and drought. Flooding is isolated to select areas within the floodplain, while dam failure is isolated to areas downstream of the event. Each of these potential hazards is addressed with relevant supporting data.

Table 2.1

Chapter II. Section	Updates to Section
I. Flood	Updated events, critical facilities to GMIS, tax information. Recalculated hazard frequency data. Added information from Hazus-MH analyses.
II. Dam Failure	Updated events, critical facilities to GMIS, tax information Recalculated hazard frequency data.
III. Drought	Updated events, critical facilities to GMIS, tax information Recalculated hazard frequency data.
IV. Wildfire	Updated events, critical facilities to GMIS, tax information Recalculated hazard frequency data.
V. Tornados	Removed from Severe Weather Category. Updated events, added critical facilities to GMIS, updated tax information. Recalculated hazard frequency data.
VI. Tropical Storms	Removed from Severe Weather Category. Updated events, added critical facilities to GMIS, updated tax information. Recalculated hazard frequency data.
VII. Severe Weather	Updated events, critical facilities to GMIS, tax information Recalculated hazard frequency data.
VIII. Winter Storms	Updated events, critical facilities to GMIS, 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.

Jenkins County and Millen will continue to comply with NFIP requirements and intend to remain in compliance by enforcing flood plain ordinances that prohibit or severely limit development in floodplains. These ordinances are enforced by the Jenkins County code enforcement Office and the Millen Building and Permitting Department. Table 2.2 provides information about each jurisdiction's participation level.

Table 2.2

Community Name	Init FHBM Identified	Init. FIRM Identified	Curr. Eff. Map Date	Reg-Emer Date	Sanction Date
Jenkins County	02/0378	09/29/89	08/05/10	09/29/89	N/A
Millen	04/12/74	05/01/87	08/05/10	05/01/87	N/A

Source: FEMA Community Status Book

B. Hazard Profile: Severe flooding within Jenkins County is a relatively infrequent event. The county has over 35,292 acres of wetlands, 14 lakes, 33 rivers/streams and 14 reservoirs. Slopes in Jenkins County ranges from nearly level in the low-lying floodplain areas to around 17-20 percent along the side slopes of some ridgelines and bluffs. Floodplains are narrow except along the principal rivers which have a wide expanse of swamp bordering both sides of the channel. Relief varies from 100 to 150 feet. Elevations in the district range from 500 feet in the northwest to 100 feet in the southeast indicating the regional dip. 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 90 years 14 flooding events were recorded, where ten occurred countywide, one in the incorporated areas only and two in Millen. No flooding events have occurred since the last update. Approximately $750,000 in property and crop damages with one injury and one fatality were reported. The flood in October 1992 resulted in the death of a 2-week-old baby that was swept from its mother's arms as the family was being evacuated. Table 2.3 is a result of information gathered from interviews, newspaper articles, and the NCEI and SHELDUS™ databases.

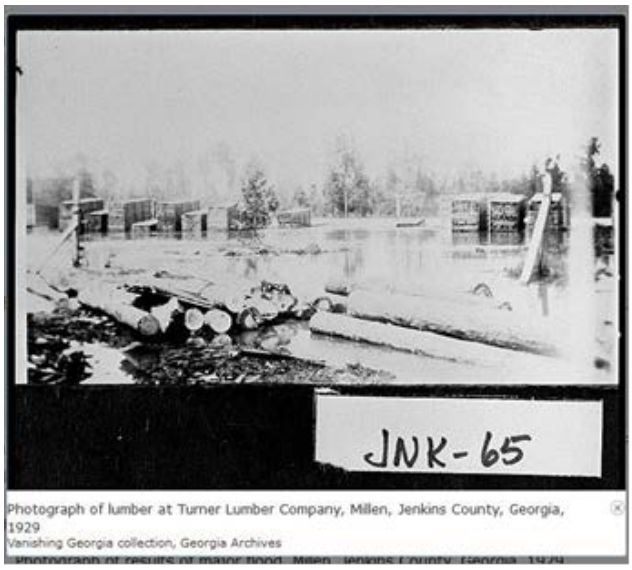
Table 2.3

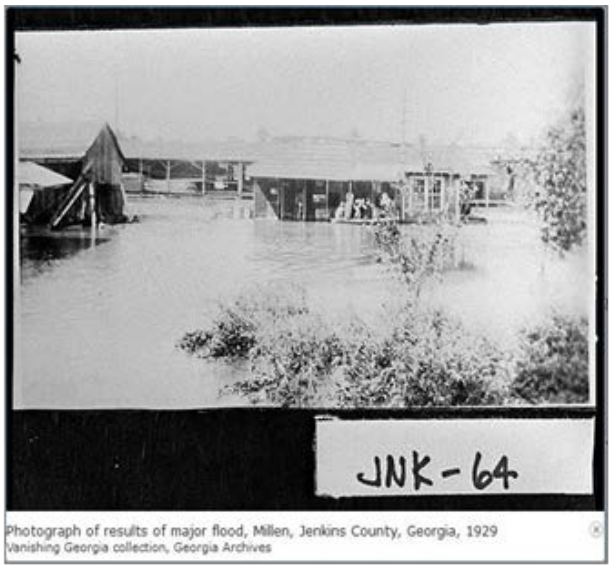
Date	Dth	Inj	PrD	CrD
9/25/1929	2	0	.00	.00
3/20/1980	0	0	.00	.00

Date	Dth	Inj	PrD	CrD
10/11/1990	0	0	$500,000	.00
10/14/1990	0	0	$50,000	.00
2/14/1991	0	0	.00	$500
8/26/1991	0	0	$50,000	.00
10/2/1992	0	0	$100,000	.00
10/8/1992	1	1	.00	.00
3/11/1998	0	0	.00	.00
4/10/2003	0	0	.00	.00
7/26/2003	0	0	.00	.00
6/29/2010	0	0	.00	.00
6/29/2010	0	0	.00	.00
5/29/2012	0	0	.00	.00

Source: NCEI and SHELDUS

The worst recorded flood in Jenkins County occurred between September 25 and October 3, 1929, as a result of two heavy thunderstorms that passed through the area within a period of ten days. The first storm, which occurred September 25-27, 1929, was prolonged and intense. The second storm was the result of a tropical hurricane that passed around the Florida peninsula, turned northwest and moved inland near Pensacola on September 30. It moved northeast across northern Florida and southeastern Georgia and then up the Atlantic coast. Pictures were found of the flood from the Vanishing Georgia site (http://dlg.galileo.usg.edu/vanga/? Welcome)





The second major flooding event occurred from October 10-12, 1990 where torrential rain occurred in east-central Georgia. Rainfall totaled as much as 19.89 inches for the 3-day period, although most areas received from 7.0 to 10.0 inches of rain. Flood depths were reported to be approximately 20 feet at the Ogeechee River Bridge. Severe flooding caused by the intense rain on already saturated ground occurred in several tributaries to the Ogeechee, Ohoopee, and Savannah Rivers. The rains were the result of the convergence of a slow-moving cold front from the northwest, Tropical Storm Klaus from the east, and Tropical Storm Marco from the south. The resulting excessive rains

approached or exceeded several long-standing rainfall records in Georgia. The flood of October 11-20 was the third severe flood to occur in Georgia in 1990, and nine counties, which includes Jenkins, were named in Presidential Disaster Declaration 880.

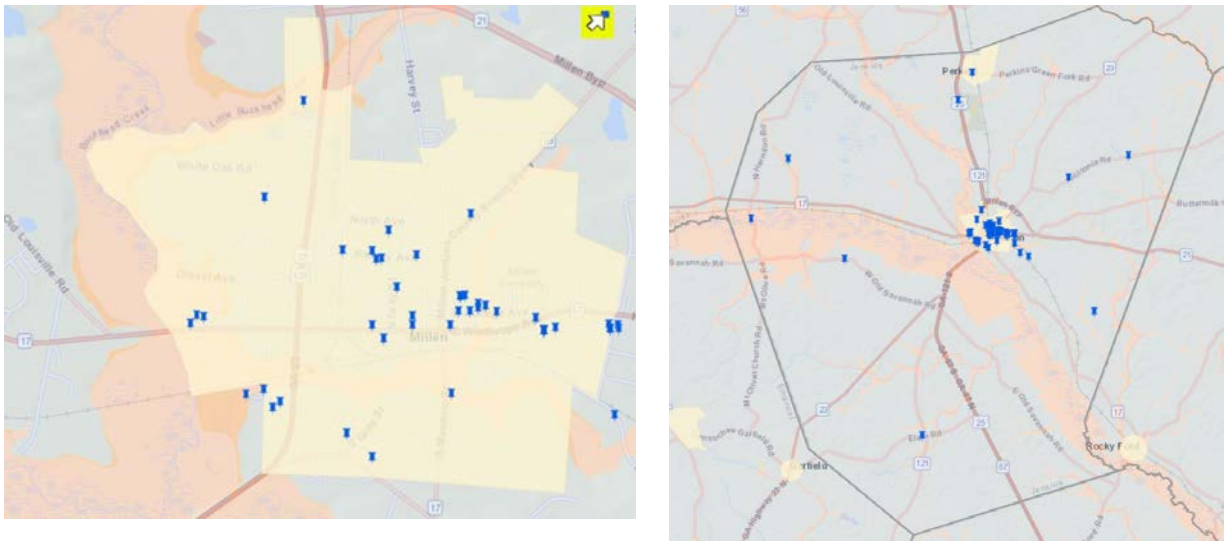
All sites where discharge equaled or exceeded the 100-year discharge within a 50-mile radius had drainage areas of less than 100 square miles, except sites on the Ogeechee River. The Ogeechee River experienced maximum discharges having recurrence intervals ranging from 10 to more than 100 years. The maximum discharge of 27,000 cubic feet per second for the Ogeechee River near Louisville (41 miles from Millen) was the largest since 1929 at that site. The maximum stage for Ogeechee River at Scarboro (eight miles from Millen) was 13.42 feet where flood stage is 8 feet. The maximum discharge for Ogeechee River at Scarboro 37,000 cubic feet per second. The flood of 1929 maximum discharge was 75,000 cubic feet per second. USGS report and tables are in Appendix C.

Most flood events resulted in flash flooding which caused downed trees and power lines, apartment and schools to flood and washed out several roads. Limited data is available for the incorporated jurisdiction. While severe flooding within the county is a relatively infrequent event, there is a potential for flooding. Flash flooding is the most prominent flooding event as riverbanks overflow due to rainfall. There are no NFIP mitigated properties and no NFIP repetitive flooding. The GMIS flood hazard map assigns a flood zone rating of zero for the unincorporated parts of the County and Millen where there are no identified flood hazards and a zone rating of three for Jenkins County and Millen where floodplains are known. The flooding event in Millen in 2010 reported seven inches of rainfall with widespread flooding on roadways throughout the city.

Table 2.4 describes the characteristics of the flood zones based on data from the GMIS.

Table 2.4

Score	Original Value	Description
4	Floodway	Floodway (within zone AE)
	V	1% with Velocity no Base Flood Elevation (BFE)
	VE	1% with Velocity BFE
3	A	1% Annual Chance no BFE
	A99	1% Federal flood protection system
	AE	1% has BFE
	AH	1% Ponding has BFE
	AO	1% Sheet Flow has depths
	AR	1% Federal flood protection system
2	X500	0.2% Annual Chance
1	ANI	Area not included in survey
	D	Undetermined but possible
0	UNDES	Undesignated
	X	Outside Flood Zones



Source: GMIS Flood Map for Millen and Jenkins County

The magnitude of a major flood event could have approximately 75 percent of the county experiencing some damage from flooding. Based on a 20-year hazard cycle the chance of an annual flooding event occurring is:

- 25 percent for all of Jenkins County;
- 15 percent for unincorporated areas of Jenkins County; and
- 15 percent for Millen (*See Appendix A and Appendix D).*

C. **Assets Exposed to Hazard and Estimates of Potential Loss:** For determination of assets exposed to risk this plan used maps created from FEMA data and available parcel data. Based on FIRM, tax digests, parcel maps and FEMA Worksheet #3a for inventory of assets, the following assets are at risk during a flood event:

- Millen has 87 structures/properties valued at approximately $4.8 million with a population of 250;
- Unincorporated Jenkins County has 194 structures/properties valued at approximately $15.4 million with an estimated population of 135.

All 281 structures/properties have been identified by federal flood plain maps and/or parcel maps. Not all structures that have been identified will experience damage from floods. Further studies, including professional surveys, would have to be conducted to determine exactly which structures are at consistent risk from flooding.

The extent of each flood varies according to the amount of rainfall in a given area. If a complete loss of the 281 structures/properties located within flood zones would result in approximately $25.8 million in damages assuming 100 percent loss, a 75 percent loss would represent approximately $19.3 million, a 50 percent loss would represent approximately $12.9 million, and a 25 percent loss would represent approximately $6.4 million.

The GMIS has eleven critical facilities with a hazard score of three: one in the county and 10 in the city with a value over $14 million. The 45 remaining critical facilities have a hazard score of zero

with a value of over $61 million. Table 2.5 shows the breakdown of critical facilities by jurisdiction, flood hazard score, replacement value, content value, and occupancy.

Table 2.5

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Jenkins County	3	1	6,000,000	0.00	0	0
Jenkins County	0	26	44,886,750	10,920,000	1,801	4
Millen	3	10	8,470,000	83,000	10	0
Millen	0	19	16,232,000	1,830,000	10	0
TOTAL		**56**	**75,588,750**	**12,833,000**	**1,821**	**4**

The GMIS has no repetitive flooding NFIP property and no NFIP mitigated properties where there was loss. There is no estimate for future structures since future development will be limited and regulated in areas where floodplains exist. *(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 Jenkins County. A copy of the complete 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 County's 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 Hazus analysis generated information to building loss, essential facility loss, food and shelter requirements and debris because of the Riverine 1% Flood Scenario. Table 2.6 shows results of this scenario are as follows:

Table 2.6

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
Millen					
Residential	1,242	74	$128,349,501	$939,939	0.73%
Industrial	15	1	$8,685,308	$133	0.00%
Commercial	44	2	$8,763,820	$4,437	0.05%
Unincorporated					
Residential	2,451	179	$218,670,952	$2,069,545	0.95%
		County Total			
	3,752	**256**	**$364,469,581**	**$3,014,054**	

- **Essential Facility Losses:** The analysis identified no essential facilities being subject to damage.

- **Flood Shelter Requirements:** The scenario estimates 244 households are subject to displacement. Displaced households represent 731 individuals, of which 349 may require short-term publicly provided shelter.
- **Flood Debris:** Hazus-MH estimates that an approximate total of 1,407 tons of debris might be generated by the flood. The model breaks debris into three general categories:
    - Finishes (dry wall, insulation, etc.) – 706 tons generated;
    - Structural (wood, brick, etc.) – 215 tons generated; and
    - Foundations (concrete slab, concrete block, rebar, etc.) – 486 tons generated.

It is noted that the difference between the FEMA Hazus-MH results and the FEMA worksheet #3a is because Hazus-MH is only looking at buildings. The FEMA flood maps and parcel maps include all parcels whether a building exist or not. The community is rural, and agriculture is an important industry. All parcels are included in our analysis just not structures.

D. Land Use and Development Trends: The Jenkins County Comprehensive Plan 2018-2028 presents future development scenarios for Jenkins County and Millen in the form of "character areas". Character areas not only identify existing and future land uses 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 character areas recommended for Jenkins County and Millen are ones that:

- Presently have unique or special characteristics that need to be preserved;
- Have potential to evolve into unique areas; and
- Require special attention because of unique development issues.

The conservation or reserve character area describes primarily undeveloped natural lands and environmentally sensitive areas that are not suitable for urban or suburban development. These areas include flood plains, wildlife management areas, public parks and other environmentally sensitive areas. The development pattern should seek to:

- Minimize impervious surfaces;
- Protect water quality;
- Preserve natural resources, habitats, views, and rural/agricultural character;
- Protect open space in a linear pattern, typically following the flood plain of river and stream corridors and accommodate greenways; and
- Provide opportunities for low-impact recreation (e.g. canoeing, fishing, hunting, hiking, etc.) and environmental education.

Primary land use should seek to:

- Assure undeveloped areas are left in their natural state;
- Promote passive parks; and
- Promote agriculture.

The County has experienced very little growth over the past decade and future forecasts project relatively slow growth patterns. Despite the slow growth forecasts the county intends to work closely with the city to encourage and manage future growth. Additionally, as the Savannah River Parkway corridor widening project is completed, the county expects growth to occur.

The joint comprehensive plan discourages new development within known flood prone areas with the exception of very low impact usages, such as recreational facilities (i.e. trails, open fields, etc.). With this type of land use, the floodplains are utilized without disturbing their cycles.

Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard. The vulnerability in terms of future buildings, infrastructure and critical facilities located in the identified hazard areas is not known at this time since no planned or approved future development exist. Thus, it is impossible to determine vulnerability in terms of future buildings, infrastructure and critical facilities within the county or Millen. (*Current and Future Land Maps and Tables for each jurisdiction can be found in Appendix B)*

E. Multi-Jurisdictional Concerns: Jenkins County and Millen will continue to comply with NFIP requirements and intend to remain in compliance by enforcing flood plain ordinances that prohibit or severely limit development in floodplains. During a large-scale flood event, many portions of Jenkins County would potentially be impacted by flooding. However, the area's most prone to flooding have historically been those areas located within the 100-year floodplain. Since flooding has the potential to affect all of Jenkins County, any mitigation steps taken related to flooding should be undertaken on a countywide basis and Millen.

F. Hazard Summary: Severe flooding within Jenkins County is a relatively infrequent event. The county has over 35,292 acres of wetlands, 14 lakes, 33 rivers/streams and 14 reservoirs. There have been 14 flooding events recorded in the last 90 years. These events resulted in school closings, roads washing out, and one fatality. The hazard frequency table calculates a 25 percent chance of an annual flooding event in Jenkins County. Hazard frequency tables can be found in Appendix D.

Based on tax data, parcel and flood maps all or a portion of 281 known structures/properties valued at approximately $25.8 million and a population of 385 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 III.

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, 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.
- Undetermined Hazard - Hazard level has not been determined.

B. Hazard Profile: Based on the 2018 National Inventory of Dams there are 17 dams in Jenkins County where 15 are low hazard and two are classified as undetermined. The average dam age is 45 years and zero percent of the dams are regulated by state or federal agencies. All are located in the unincorporated areas of the county. A map and complete table of the dams can be found in Appendix A by classification and jurisdiction.

Based on interviews and best available data there have been two dam failure events within the last 90 years: one in 1929 and one in 1990. The dam failures were a result of the flooding events that occurred in the aforementioned. There were three deaths and one injury as a result of the flood event. Based on a 20-year hazard cycle the chance of an annual dam failure occurring is less than one percent for all of Jenkins County. Further study needs to be conducted to determine the precise probability of an annual dam failure event (*See Appendix A and Appendix D).*

C. Assets Exposed to Hazard and Estimate of Potential Losses: The number of dams posing potential loss of life hazards to Jenkins 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 residents of Millen do not appear to be at risk due to dam failure. 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 Jenkins County. The GMIS report has critical facilities replacement value at more than $75 million with a population of 1,825. The County has population of 8,340 and 17,186 structures/properties valued at more than $704 million at risk of potential loss. (*See Appendix A and Appendix D).*

D. Land Use and Development Trends: The County has experienced very little growth over the past decade and future forecasts project relatively slow growth patterns. Despite the slow growth forecasts the county intends to work closely with the city to encourage and manage future growth. Vulnerability in terms of future buildings, infrastructure and critical facilities is not known at this time. It can be surmised that this future development will bring an increase in population and efforts must be made to ensure that new homes are not built downstream where a dam break may occur. Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard. Current and future land use tables are in Appendix B. A dam break analysis study is recommended in Chapter III, Section III to determine the exact assets exposed to risk as a result of a dam failure.

E. Multi-Jurisdictional Concerns: There is no way to determine with any statistical significance whether dams in one area of Jenkins County are in danger of failure more than others (as most are similar in construction and age).

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. There have been two known dam failures events in the last 90 years. The committee deemed it important to address since there are 17 dams in Jenkins

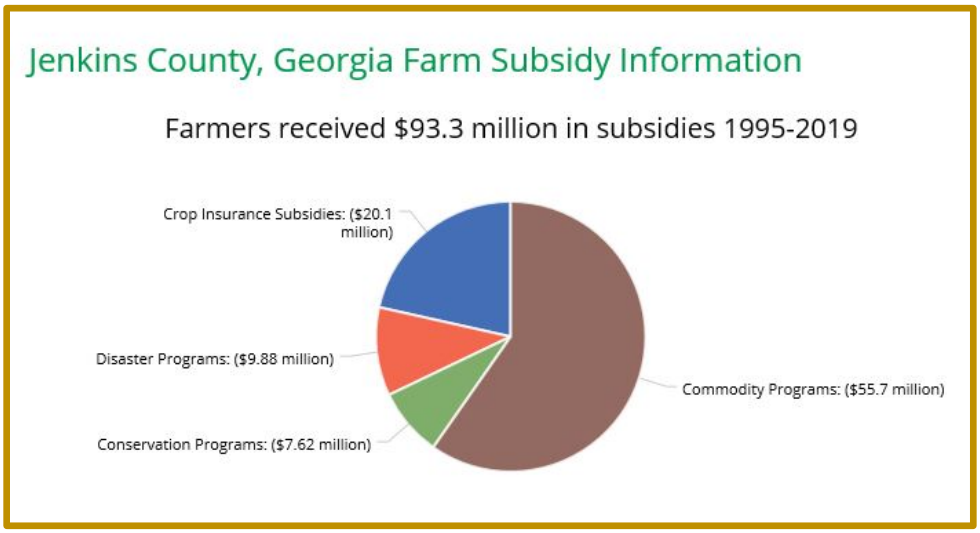
County where 15 are low hazard and two are classified as undetermined. The committee recognized the potential for losses caused by dam failure and identified it as a hazard requiring mitigation measures. To summarize, there are approximately 17,186 structures/properties in the county totaling more than $704 million with a population of 8,340. The committee identified specific mitigation goals, objectives and action items related to dam failure, which can be found in Chapter III, Section III.

SECTION III. DROUGHT

A. Hazard Identification: The committee reviewed historical data from the Palmer Drought Index, NCEI, DNR, and USDA in researching drought conditions in Jenkins County. 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 is addressed in a separate HRV.

B. Hazard Profile: Drought is not spatially defined and has the potential to affect the entire planning area equally. Jenkins County's consist of 225,782 acres with 52,956 acres (23.5 percent) dedicated to agricultural and 144,450 acres (64 percent) dedicated to forestry. According to the USDA 2017 Census of Agriculture 7,348 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.

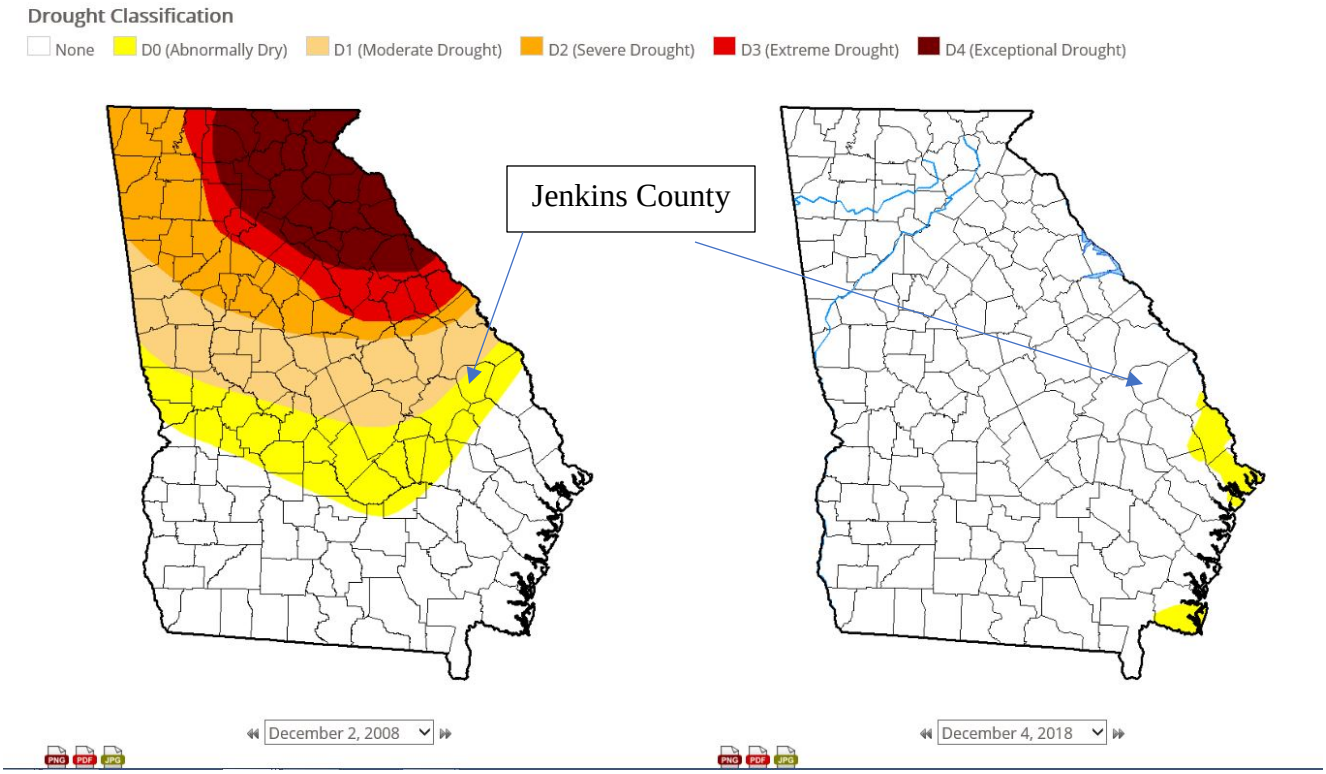
There have been 32 drought events recorded in the last 69 years with four occurring since the last update. According to the EWG Farm Subsidies Database, from 1995-2019, there has been a total of $9.88 million in disaster assistance. The pie chart below depicts amounts and type of assistance.



Source: https://farm.ewg.org

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 32 drought events. One of the longest running droughts in recent history began in April

2011 and ended in January 2013. The County was in a moderate drought from April 2019 to June 2019. The average based on historical data is a -3.00 on the Palmer Index. The maps below show drought conditions for December 2008 and 2018.



Based on the weekly data from the US Drought Monitor (https://droughtmonitor.unl.edu/Data/DataTables.aspx) from January 2000 to June 2019 the county has experienced the following drought conditions:

- 181 weeks where all or a portion of the county has experienced of D0 - Abnormally Dry;
- 189 weeks where all or a portion of the county has experienced of D1 - Moderate Drought;
- 88 weeks where all or a portion of the county has experienced levels of D2 - Severe Drought;
- 79 weeks where all or a portion of the county has experienced levels of D3 - Extreme Drought; and
- 15 weeks where all or a portion of the county has experienced levels of D4 - Exceptional Drought. *(US Drought Monitor Tables can be found in Appendix A.)*

Historical data is only for the county. A severe, prolonged drought would mainly affect the 87.5 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 155 percent chance of an annual drought event for the county as well as Millen. *(See Appendix D for Worksheet 3a and 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 as a result 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 as a result 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:

- Millen has 29 agricultural/forestry structures/properties valued at approximately $947,582.5 with an estimated population of 8.
- Unincorporated Jenkins County has 4,725 agricultural/forestry structures/properties valued at approximately $340 million with an estimated population of 156.

There is a total of 4,754 agricultural/forestry properties in all of Jenkins County valued at more than $341 million with a population of 164 that are at the greatest risk due to a drought event *(Appendix A and Appendix D)*.

D. Land Use and Development Trends: Jenkins County currently has no land use or development trends related to drought conditions. When drought conditions do occur, the municipalities follow the restrictions set forth by the Georgia DNR Drought Management Plan and the Statewide Outdoor Water Use Schedule. These guidelines are enforced by the Millen water department.

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, rain water, 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.

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

E. Multi-Jurisdictional Concerns: Agricultural losses associated with drought are more likely to occur in the rural, less concentrated areas of the county. Although Millen is 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. Drought may increase the likelihood of wildfires and flooding. Water shortages can impede firefighting efforts at all levels. Drought creates a deficiency in water supply that affects water availability and water quality. Droughts can and have severely affected private wells, municipal and industrial water supplies, agriculture, stream water quality, recreation at major reservoirs hydropower generation, navigation, and forest resources.

F. Hazard Summary: Drought is not spatially defined and equally affects the entire planning area. Droughts do not have the immediate effects of other natural hazards, but sustained drought can cause severe economic stress to the agricultural interests in Jenkins County. 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 155% chance of an annual drought event in Jenkins 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.

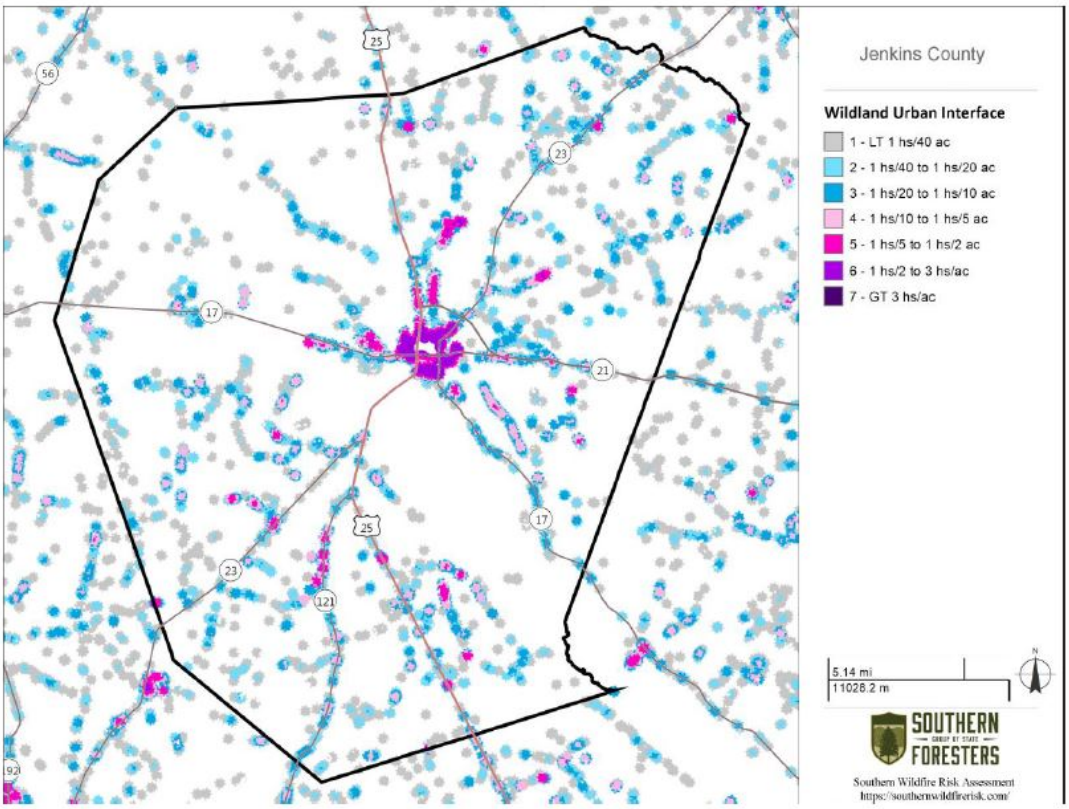
In summary, for Jenkins County as a whole, there are a total of 4,754 agricultural/forestry properties valued at approximately $341 million and include 7,348 heads of livestock and an estimated population of 164 which have the greatest potential to be damaged by drought. There is a population of 8,340 and approximately 17,186 structures/properties in the county with a value just slightly more than $704 million which could be affected if wildfires break out as a result of drought conditions. Drought mitigation goals and objectives are 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: Jenkins County is comprised of 225,782 acres with acres 52,956 (23.5 percent) dedicated to agricultural and 144,450 acres (64 percent) dedicated to 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 Jenkins County.

The committee reviewed historical data from the Georgia Forestry Commission, which is not found in the NCEI database, to research wildfire events. According to Georgia Forestry data, from 1957 to 2018, there have been 3,594 fire events burning a total of 22,057 acres for an average extent of 6.14 acres. Based on a 20-year hazard cycle there is a 4,035 percent chance of an annual event. The drier the condition the more susceptible the county is to wildfire. The map below shows the Wildland Urban Interface (WUI) for Jenkins County and Millen. The Fire Intensity Map with Scale and GMIS Wildfire Maps can be found in Appendix A.



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 where forestry and woodland are prevalent. 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. Wildfire does have the potential to spread into the incorporated areas and cause extensive damage to existing structures/properties. FEMA Worksheet #3a located in Appendix D shows the number and types of buildings found in Jenkins County, as well as the value of these structures/properties and the population. Table 2.7 shows assets by jurisdiction could potentially be exposed to wildfire hazard.

Table 2.7

Jurisdiction	# of Structure/Properties	Value	Population
Jenkins County (Unincorporated)	12,737	$613,398,832	5,220
Millen	4,449	$90,858,750	3,120
TOTAL FOR COUNTY	17,186	$704,257,682	8,340

Source: Jenkins County Tax Assessor

Table 2.8 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.

Table 2.8

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Jenkins County	3	15	$25,769,250	$6,780,000	1,280	4
Jenkins County	2	1	$1,125,000	$50,000	30	0
Jenkins County	1	5	$6,422,500	$320,000	0	0
Jenkins County	0	6	$17,570,000	$3,770,000	491	0
Millen	4	1	$100,000	$0	0	0
Millen	3	17	$17,245,000	$1,500,000	13	0
Millen	2	4	$4,112,000	$0	3	0
Millen	1	3	$1,515,000	$0	0	0
Millen	0	4	$1,730,000	$100,000	4	0
TOTAL		**56**	**$75,588,750**	**$12,520,000**	**1,821**	**4**

The GMIS has one critical facilities with a hazard score of four (high), 32 with a hazards score of three (moderate), five with a hazard score of 2 (low) and eight with a hazard score of one (very low probability). The remaining 10 critical facilities have a hazard score of zero. The 46 critical facilities with a wildfire hazard score greater than zero have an estimated potential loss of more than $56.2 million. The loss for all critical facilities is $75,588,750. According to FEMA Worksheet #3a there are 17,186 structures/properties with a population of 8,340 with a value of slightly more than $704 million worth of assets countywide. If a wildfire started, it is not likely that all of these structures/properties would be affected (*See Appendix A and Appendix D).*

D. Land Use and Development Trends: Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard. Jenkins 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 Millen-Jenkins County Fire Department. 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: The majority of Jenkins County is timber, forest or agricultural land. Wildfire does have the potential to spread to urban areas thus affecting the entire county. As a result, any mitigation steps taken related to wildfire should be undertaken on a countywide basis and include all incorporated jurisdictions.

F. Hazard Summary: Jenkins County is comprised of 225,782 acres with acres 52,956 (23.5 percent) dedicated to agricultural and 144,450 acres (64 percent) dedicated to 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 2018, there have been 3,594 fire events burning a total of 22,057 acres for an average extent of 6.14 acres. Based on a 20-year hazard cycle there is a 4,035 percent chance of an annual event.

The GMIS has one critical facility with a hazard score of four (high), 32 with a hazard score of three (moderate), five with a hazard score of 2 (low) and eight with a hazard score of one (very low probability). The remaining 10 critical facilities have a hazard score of zero. The 46 critical facilities with a wildfire hazard score greater than zero have an estimated potential loss of more than $56.2 million. The loss for all critical facilities is $75,588,750. According to FEMA Worksheet #3a there are 17,186 structures/properties with a population of 8,340 with a value of slightly more than $704 million worth of assets countywide. Mitigation Goals and Objectives concerning wildfires are in Chapter III, Section III.

SECTION V. TORNADOS

A. Hazard Identification: The committee reviewed historical data from the NCEI, SHELDUS™, newspapers and citizen interviews in researching the past effects of tornados in Jenkins County. 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. Table 2.9 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 man-made structure.

Table 2.9

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

B. Hazard Profile: Tornados can affect the entire county given the right conditions. Since the exact time and location of a tornado event is not always predictable, all of Jenkins County is vulnerable to the threat. Based on 69 years of historical data, there have been 15 reported tornados in the planning area. None have occurred since the last update. The highest magnitude reported was an EF2. Reported property and crop damages for all 15 events totaled more than $631,832 with 3 injuries. Using a 20-year hazard cycle, frequency tables calculates an annual chance for a tornado event at:

- 30 percent for Jenkins County as a whole;
- 20 percent for Unincorporated Jenkins County;
- 5 percent for Millen

Table 2.10 shows the event, severity and estimate cost of damages reported. *(See Appendix D for Worksheet 3a and Hazard Frequency Tables)*

Table 2.10

Date	Location	Mag	Inj	PD	CrD
9/28/1963	Jenkins		2	$16,666	$166
5/12/1971	Jenkins	F1	0	$5,000	$0
1/11/1972	Jenkins	F1	0	$5,000	$0
3/21/1974	Jenkins		0		
6/3/1974	Jenkins		0		
3/16/1976	Jenkins	F2	0	$250,000	$5,000
3/16/1976	Jenkins	F2		$250,000	
6/5/1978	Jenkins		0		
4/19/1979	Jenkins		0		
9/22/2000	Perkins	F0	0		
7/1/2003	Scarboro	F1	0		
9/27/2004	Perkins	F0	0		
1/2/2006	Millen	F0	0	$50,000	
3/15/2008	Scarboro	EF0	0		
5/11/2008	Emmalane		1	$50,000	$0

C. Assets Exposed to Hazard and Estimate of Potential Losses: All structures and facilities within the County could be damaged by a tornado, as tornadoes are among the most unpredictable of weather phenomena and are indiscriminate as to when or where they strike. 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 tornado events. Table 2.11 provides data from FEMA Worksheet #3a that estimates the potential loss for each jurisdiction.

Table 2.11

Jurisdiction	Number of Structure/Properties	Value	Population
Jenkins County (Unincorporated)	12,737	613,398,932	5,220
Millen	4,449	90,858,750	3,120
TOTAL FOR COUNTY	17,186	704,257,682	8,340

Source: Jenkins County Tax Assessor

Table 2.12 shows the number of critical facilities by jurisdictions, hazard score, replacement value, content value, and daily occupancy. GMIS critical facility reports and FEMA Worksheet #3a are located in Appendix A for each individual jurisdiction and the county as a whole.

Table 2.12

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Jenkins County (Unincorporated)	2	27	$50,886,750	$10,920,000	1801	4
Millen	2	29	$24,702,000	$1,913,000	20	0
TOTAL FOR COUNTY		**56**	**$75,588,750**	**$12,833,000**	**1821**	**4**

D. Land Use & Development Trends: Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard. Currently, the county has no land use or development trends related to tornado events. Information on current land use and future land use projections can be found in Appendix B

E. Multi-Jurisdictional Concerns – Tornadoes tend to follow a straight path regardless of natural features or political boundaries, and no difference in severity is expected between jurisdictions. However, the impact may be more severe in places with higher population density due to more people being in danger, more people needing to evacuate, more debris from damaged buildings, and other impacts associated with higher population density. In jurisdictions without building codes and inspections, structures may exist that are not built to code and therefore may be especially vulnerable to the effects of strong winds and other hazards. In jurisdictions with a large number of mobile homes, the damage can be expected to be more severe.

F. Hazard Summary: 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. Based on 69 years of historical data, there have been 15 reported tornados in the planning area. The highest magnitude reported was an EF2. Reported property and crop damages for all 15 events totaled more than $381,832 with 3 injuries. Tornados tend to strike in somewhat random fashion, making the task of calculating a recurrence interval extremely difficult. There is a 30 percent annual chance of a tornado event for the County as a whole.

The GMIS has the entire county with a wind hazard score of two, where wind speed is between 90 to 99 mph. All 56 critical facilities have a wind hazard score of two with a replacement cost of more than $75 million**.** To summarize, there are approximately 17,186 structures/properties in the county totaling slightly more than $704 million with a population of 8,340. A breakdown of information for individual jurisdictions can be found in Appendix A and Appendix D. Specific mitigation actions for tornado events are identified in Chapter III, Section III.

SECTION VI. TROPICAL STORMS

A. Hazard Identification: The committee reviewed historical data from the NCEI, SHELDUS™, newspapers and citizen interviews in researching the past effects of Tropical Storms in Jenkins County. 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 as a result of a hurricane or tropical system that has come inland.

Tropical storms begin as tropical depressions over warm oceanic water, then develop into tropical cyclones. A tropical cyclone life span can last from a few hours to close to three weeks. Most tropical cyclones last approximately five to ten days. If the winds are under or up to 39 mph, it is a tropical depression. If winds speeds are between 39 to 73 mph, it is considered a tropical storm. Any storm with over 74 mph wind speed is called a hurricane. As a rule, hurricanes occur in the western Atlantic Ocean when warm, humid conditions are prevailing. Hurricanes are usually accompanied by excessive rain, thunder and lightning. When hurricanes make landfall, they typically slow down. Unfortunately, at that time, another danger often appears – tornados. A storm surge, which is an abnormal rise in water levels in a coastal area, usually occurs with tropical storms. Jenkins County is not likely to experience a hurricane or storm surges.

Table 2.13

Saffir Simpson Scale for Hurricanes		
Category	**Wind Speed**	**Expected Damage**
One	74-95 mph	No real damage to building structures; primarily damage to trees, shrubbery, unanchored manufactured homes
Two	96-110 mph	Some roofing material, door, window damage; considerable damage to vegetation, manufactured homes.
Three	111-130 mph	Some structural damage to small residences and utility buildings; manufactured homes destroyed.
Four	131-155 mph	Some complete roof structure failure on small residences; more extensive curtain wall failures.
Five	155 mph up	Complete roof failure on many residences and industrial buildings; some complete building failures with small utility buildings blown over or away.

B. Hazard Profile: Tropical storms generally affect the entire county and all of Jenkins County is vulnerable to the threats. Based on 69 years of historical data, there have been 11 tropical storms, four since the last update, reported by the NCEI and SHELDUS™ with property and crop damages of approximately $506,000. Damages as a result of the storms were due to power outages, downed trees and flash flooding. Matthew, Irma and Michael combined generated 1.44 million tons of debris with a removal cost of approximately $168,125. The tropical storms affected the entire planning area. The planning area was inundated with rain. No injuries were reported. Data for each jurisdiction is not available. Based on the hazard frequency table there is a 30 percent chance of an annual tropical storm event for county as a whole (*See Appendix D).* Table 2.14 was produced from interviews, *The Millen News*, and the NCEI and SHELDUS™ databases and shows the event, severity and estimate cost of damages reported.

Table 2.14

Details	Date	PrD	CrD
A result of Hurricane Dora	09/9/1964	147058.82	1470.59
A result of Hurricane Alma	06/8/1966	1470.59	1470.59
A result of Hurricane Cleo	08/28/1964	1136.36	113.64
A result of Tropical Storm Abby	06/6/1968	147.06	0
A result of Hurricane Angus	06/19/1972	0	314.46
A result of Result of Hurricane Floyd	09/15/1999	.00	.00
A result of Hurricane Jeanne	09/27/2004	.00	.00
A result of Hurricane Alberto	06/12/2006	.00	.00
A result of Hurricane Matthew	10/08/2016	.00	.00
A result of Hurricane Irma	09/11/2017	200,000	.00
A result of Hurricane Michael	10/10/2018	.00	.00

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 tropical storms. The GMIS has the entire county with a wind hazard score of two, where wind speed is between 90 to 99 mph. Table 2.15 provides data from FEMA Worksheet #3a that estimates the potential loss for each jurisdiction.

Table 2.15

Jurisdiction	Number of Structure/Properties	Value	Population
Jenkins County (Unincorporated)	12,737	613,398,932	5,220
Millen	4,449	90,858,750	3,120
TOTAL FOR COUNTY	17,186	704,257,682	8,340

Source: Jenkins County Tax Assessor

Table 2.16 shows the number of critical facilities by jurisdictions, hazard score, replacement value, content value, and daily occupancy.

Table 2.16

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Jenkins County (Unincorporated)	2	27	$50,886,750	$10,920,000	1801	4
Millen	2	29	$24,702,000	$1,913,000	20	0
TOTAL FOR COUNTY		**56**	**$75,588,750**	**$12,833,000**	**1821**	**4**

GMIS critical facility reports and FEMA Worksheet #3a are located in Appendix D for each individual jurisdiction and the county as a whole.

D. Land Use & Development Trends: Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard. Jenkins 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 tropical storms. Information on current land use and future land use projections can be found in Appendix B.

E. Multi-Jurisdictional Concerns – All of Jenkins County has the same design wind speed of 200 mph. The entire county has the potential to be affected by tropical storms. As a result, any mitigation steps taken related should be considered on a county-wide basis to include all jurisdictions.

F. Hazard Summary: The entire county has the potential to be affected by tropical storms. Based on 69 years of historical data, there have been eleven tropical storms reported by the NCEI and SHELDUS™ with reported property and crop damages of approximately $506,000. To summarize, there are approximately 17,186 structures/properties in the county totaling slightly more than $704 million with a population of 8,340. A breakdown of information for individual jurisdictions can be found in Appendix A and Appendix D. Specific mitigation actions for tropical storms are identified in Chapter III, Section III.

SECTION VII. SEVERE WEATHER (THUNDERSTORM WINDS, LIGHTNING, HAIL)

A. Hazard Identification: The committee reviewed historical data from the NCEI, SHELDUS™, newspapers and citizen interviews in researching the past effects of severe weather in Jenkins County. The month of February marks the beginning of the severe weather season in the South, which can last until the month of August. Three types of severe weather were identified by the mitigation team: (1) thunderstorm winds, (2) lightning and (3) hail.

The first 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 which may seriously impair the emergency management capabilities of the affected jurisdictions.

Thunderstorm winds 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 second 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 and are then 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: 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 Jenkins County is vulnerable to the threats of severe weather.

Thunderstorms normally occur during the spring and summer months and often carry strong winds. There have been 122 events recorded in the last 69 years with winds speeds up to 96 knots reported. Since the last update, there have been 13 events. Over $1.1 million in property and crop damages were reported with one injury. Table 2.17 breaks down the thunderstorm events by jurisdiction. A complete table of thunderstorm wind events can be found in Appendix A.

Table 2.17

Location	# of Events	County-Wide Events*	Total # of events per jurisdiction
Jenkins County(Unincorporated)	49	34	83
Millen	39	34	73
TOTAL FOR COUNTY	**88**	**34**	**122**

Source: NCEI and SHELDUS

** It is assumed that all 34 county-wide events reported occurred in each jurisdiction*

Using a 20-year hazard cycle, the frequency table calculates an annual chance for a thunderstorm event producing high winds is 270 percent for the unincorporated areas of the county and 185 percent for Millen. Jenkins County as a whole has an overall probability of 405 percent for a significant thunderstorm. Hazard frequency fables for individual jurisdictions are in Appendix D.

The second weather event is lightning. During the spring and summer months the county experiences numerous storms that can often produce lightning. There have been 17 reported lightning events in the past 69 years with slightly more than $9,559 in property and crop damages with four injuries. There have been 81 lightning strikes recorded in the same time frame that resulted in wildfires. When these datasets are combined there has been 98 lightning strikes recorded. There have been five events recorded since the last update. Jenkins County experiences 6-12 flashes per square mile per year. Specific information and maps can be found https://www.vaisala.com/en. *(Note: Information on the Vaisala website is copyrighted and for display purposes only).* Based on a 20-year hazard cycle there is a 200 percent chance that a lightning strike will occur in Jenkins County.

The final severe event is hail. In the last 69 years there have been 38 hail events reported to the NCEI and SHELDUS™ databases with slightly more than $7,916 in property and crop damages and two injuries reported. There has been only one reported hail event since the last update. Hail ranged in size from .75 to 1.75 inches. Using a 20-year hazard cycle, frequency tables calculates an annual chance for a hail event at:

- 35 percent for the unincorporated areas of the county;
- 45 percent for Millen;

Overall, there is a 75 percent chance that an annual hail event in Jenkins County. A complete list of all hazards is in Appendix A and 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 thunderstorm winds, lightning and hail events. The GMIS has the entire county with a wind hazard score of two, where wind speed is between 90 to 99 mph. Table 2.18 provides data from FEMA Worksheet #3a that estimates the potential loss for each jurisdiction.

Table 2.18

Jurisdiction	Number of Structure/Properties	Value	Population
Jenkins County (Unincorporated)	12,737	613,398,932	5,220
Millen	4,449	90,858,750	3,120
TOTAL FOR COUNTY	17,186	704,257,682	8,340

Source: Jenkins County Tax Assessor

All 56 critical facilities have a wind hazard score of two placing the critical facilities in Zone IV which has a wind speed of 90 to 99 mph. Table 2.19 shows the number of critical facilities by jurisdictions, hazard score, replacement value, content value, and daily occupancy.

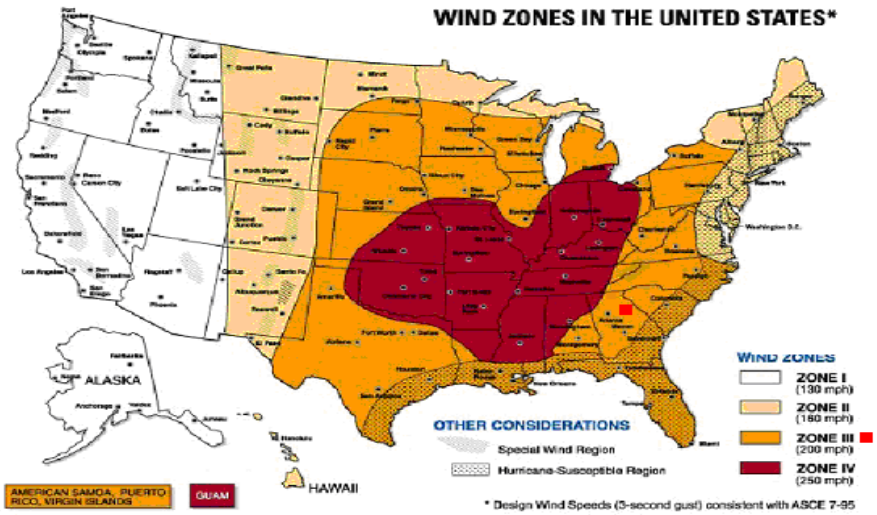
Table 2.19

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
					Day	Night
Jenkins County (Unincorporated)	2	27	$50,886,750	$10,920,000	1801	4
Millen	2	29	$24,702,000	$1,913,000	20	0
TOTAL FOR COUNTY		**56**	**$75,588,750**	**$12,833,000**	**1821**	**4**

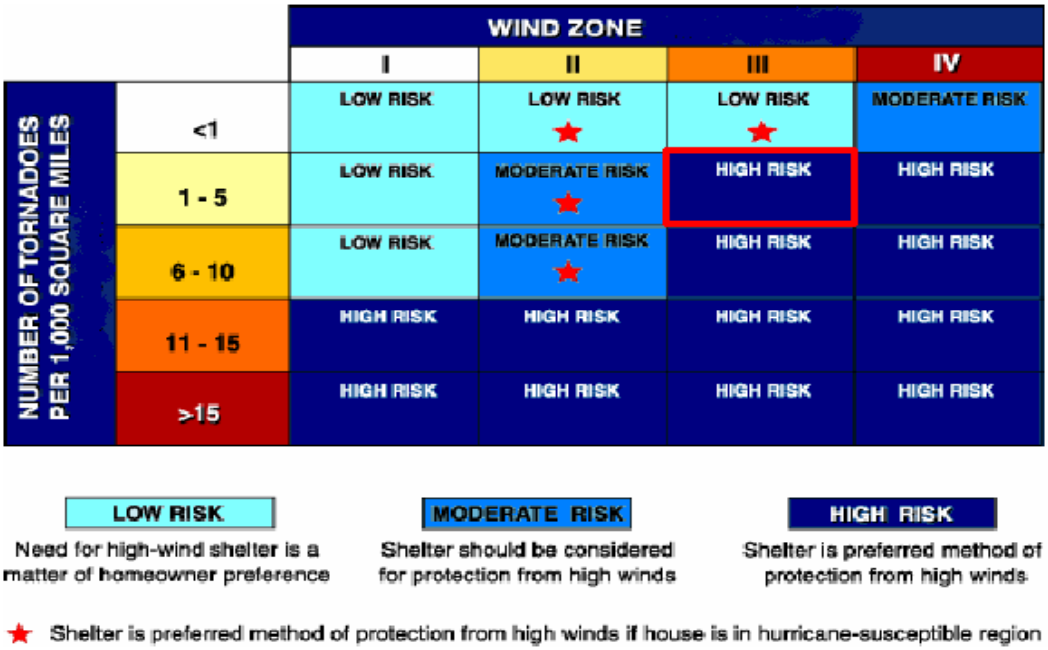
GMIS critical facility reports for wind and FEMA Worksheet #3a are located in Appendix D for each individual jurisdiction and the county as a whole.

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

E. Multi-Jurisdictional Concerns – All of Jenkins 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



The entire county has the potential to be affected by thunderstorm winds, lightning and hail. As a result, any mitigation steps taken related for these three severe weather events should be considered on a county-wide basis to include all jurisdictions.

F. Hazard Summary: The entire county has the potential to be affected by severe weather. Table 2.20 provides a summary of all severe weather events

Table 2.20

Weather Event	#	Fatalities	Injuries	Approximate Property/Crop Damage
Thunderstorm Winds	122	0	0	$1,137,998
Lightning	98	0	4	$9,559
Hail	38	0	2	$7,916

The GMIS has the entire county with a wind hazard score of two, where wind speed is between 90 to 99 mph. All 56 critical facilities have a wind hazard score of two with a replacement cost of more than $75 million**.** To summarize, there are approximately 17,186 structures/properties in the county totaling slightly more than $704 million with a population of 8,340. A breakdown of information for individual jurisdictions can be found in Appendix A and Appendix D. Specific mitigation actions for thunderstorm winds, lightning and hail events are identified in Chapter III, Section III.

SECTION VIII. 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 high winds, ice and freezing rain, heavy snowfall, and cold temperatures. These conditions can make driving conditions 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 equally. The committee researched historical data from the NCEI, SHELDUS™, and SERCC, as well as information from past newspaper articles relating to winter storms in Jenkins County. There have been 34 winter storm events recorded in the county over the last 129 years with an estimated property damage of $135,149 with one fatality reported. Only one winter storm event has occurred since the last update.

The ice storm on February 11-13, 2014, had freezing rain and sleet with accumulations of up to 1½ inches of ice across the area. Approximately 98 percent of local residents were without power at the height of the storm as ice accumulated on electric lines and falling trees and limbs brought them down.

A shelter for around 50 persons without electricity and heat was established at West Millen Baptist Church for several days. Some residents chose to stay at area hotels that still had electricity. Icy roads, along with falling trees and limbs, kept traffic at a standstill. Several city streets were closed due to fallen debris and numerous county roads had to be cleared of fallen trees and limbs. One local death was attributed to the storm. The city of Millen removed approximately 13,000 tons of debris while the County removed around 81,000 tons' cubic yards with a removal cost of approximately $70,000.

The timber industry was severely affected by the storm. Jenkins 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 50 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. Table 2.21 shows assets by jurisdiction that could be at potential risk of damage from a winter storm event.

Table 2.21

Jurisdiction	# of Structure/Properties	Value	Population
Jenkins County (Unincorporated)	12,737	613,398,932	5,220
Millen	4,449	90,858,750	3,120
TOTAL FOR COUNTY	17,186	704,257,682	8,340

Source: Jenkins County Tax Assessor

The GMIS does not provide a report for winter storm damage but there is slightly more than $704 million worth of assets with potential loss to winter storm hazards countywide. Table 2.22 shows the number of critical facilities by jurisdiction, hazard score, replacement value and daily occupancy (*See Appendix D for Worksheet 3a and Hazard Frequency Tables).*

Table 2.22

Jurisdiction	# of Critical Facilities	Replacement Value $	Content Value $	Occupancy	
				Day	Night
Jenkins County (Unincorporated)	27	$50,886,750	$10,920,000	1801	4
Millen	29	$24,702,000	$1,913,000	20	0
TOTAL FOR COUNTY	**56**	**$75,588,750**	**$12,833,000**	**1821**	**4**

D. Land Use & Development Trends: Since the previous plan was approved, there have not been any new developments, regulations, programs, or other changes in the community that would either increase or decrease the community's overall vulnerability to this hazard. Jenkins County currently has no land use or development trends related to winter storms. 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 forest land 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.

E. Multi-Jurisdictional Concerns: Jenkins 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 and include all incorporated jurisdictions. A concern is the lack of available data for the county and city of Millen. A database needs to be created and maintained that provides information on past and future occurring winter storm events.

Another major issue is county-wide 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 ever removed the county will be without any adequate means to bounce signals. The county and all jurisdictions are aware of the need to develop communication capabilities that will serve the entire county.

F. Hazard Summary: There have been 34 recorded winter storms. There is a 50 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 17,186 structures/properties in the county totaling slightly more than $704 million with a population of 8,340. The committee recognized the dangers posed by winter storms and identified specific mitigation actions in Chapter III, Section III

CHAPTER III. MITIGATION STRATEGIES

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

Table 3.1

Chapter III. Section	Updates to Section
I. Flooding	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.
II. Dam Failure	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.
III. Drought	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.
IV. Wildfire	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.
V. Tornado	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.
VI. Tropical Storms	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.
VII. Severe Weather	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.
VIII. Winter	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.
IX. All Hazards	Completed action steps were removed. All text was reviewed and edited as needed. Goals, Objective, and Actions Steps were updated.

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 Jenkins County and Millen 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

The County 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. Jenkins County has an annual budget of approximately $12,241,473 and Millen's budget is $6,467,450. It should be noted that mitigation action steps with high dollar amounts cannot be completed without grant funds and careful budget planning by each jurisdiction.

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. Jurisdictions can expand their capabilities measures by adopting stricter of zoning, land-use practices, and building codes. They can also ensure that all existing policies are enforced and variances requested by developers and citizens are reviewed to ensure they are compliant with disaster preparedness. Additional staff can be hired when funding becomes available. The three tables below identify administrative, technical, legal and fiscal capabilities of each jurisdiction.

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

Regulatory Tools (ordinances, codes, plans)	Jenkins County	Millen	Does State Prohibit
Building code	N	Y	N
Zoning ordinance	N	Y	N
Subdivision ordinance or regulations	Y	Y	N
Special purpose ordinances (floodplain management, storm water management, soil erosion)	Y	Y	N
Growth management ordinances (also called "smart growth" or anti- sprawl programs)	N	N	N
Site plan review requirements	Y	Y	N
General or comprehensive plan	Y	Y	N

Regulatory Tools (ordinances, codes, plans)	Jenkins County	Millen	Does State Prohibit
A capital improvements plan	Y	Y	N
An economic development plan	Y	Y	N
An emergency response plan	Y	Y	N
A post-disaster recovery plan	Y	Y	N
A post-disaster recovery ordinance	N	N	N
Real estate disclosure requirements	N	N	N

Table 3. 3 Fiscal Capability

Financial Resources	Jenkins County	Millen	Accessible or Eligible to Use (Yes/No)
Community Development Block Grants (CDBG)	Y	Y	Y
Capital improvements project funding	Y	Y	Y
Authority to levy taxes for specific purposes	Y	Y	Y – Vote required
Fees for water, sewer, gas, or electric service	N	Y	Y
Impact fees for homebuyers or developers for new developments/homes	N	N	N
Incur debt through general obligation bonds	Y	Y	Y
Incur debt through special tax and revenue bonds	Y	Y	Y – Vote required
Withhold spending in hazard-prone areas	N	N	N
Other Grants	Y	Y	N

Table 3.4 Administrative and Technical Capacity

Staff/Personnel Resources	Jenkins County	Millen	Dept./Agency and Position
Planner(s) or engineer(s) with knowledge of land development and land management practices	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	Building Dept./ Code Enforcement
Planners or Engineer(s) with an understanding of natural and/or manmade hazards	Y	Y	Public Works/CSRA RC Staff
Floodplain manager	Y	Y	Building Dept.
Surveyors	N	N	Contracted as needed
Staff with education or expertise to assess the community's vulnerability to hazards	Y	Y	Public Safety/EMA
Personnel skilled in GIS and/or HAZUS	Y	Y	CSRA RC Various
Emergency manager	Y	Y	EMA
Grant writers	Y	Y	CSRA RC

C. Community Mitigation Goals

Collectively, the jurisdictions reviewed the hazard profiles and the loss estimates information 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 should be 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 capability's 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 which are put into practice to reduce the risk of destruction and casualties. Mitigation is generally split into two main types of activities: structural and non-structural. 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. The committee has identified both structural and non-structural mitigation measures to ensure that the community adequately addresses all hazard events. Structural and non-structural actions are identified in Section III. Mitigation Action Table.

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

Jenkins County and Millen has 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:

- Have adopted mobile home ordinances to regulating location.
- Jenkins County and Millen have flood plain ordinances.
- Millen has adopted zoning ordinances and subdivision regulations.
- Public Nuisance Code/ Dilapidated Building Ordinance.

The Jenkins County Board of Commissioners and the City Council of Millen adopted the *Joint Millen-Jenkins County Comprehensive Plan 2018-2028* by resolution. 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 and Millen. The joint comprehensive plan also examines existing land use and projects future land use.

iii. Community Values, Historic & Special Considerations

Historical-Cultural

There are currently six buildings and sites presently listed in the National Register of Historic Places (NR) in Millen and Jenkins County:

- *Birdsville Plantation* (listed 1971). Dating to the eighteenth century and held by one family from the time of a land grant by King George III, Birdsville Plantation is architecturally significant for its large number of standing outbuildings.

- *Camp Lawton* (also known as *Magnolia Springs State Park*), (listed 1978). Camp Lawton was a Confederate prison camp holding 10,000 Union soldiers from the overflow at Andersonville Prison Camp in Georgia during the Civil War. Three earthworks surround the stockade area.

- *Jenkins County Courthouse* (listed 1980 pictured). Built in 1910, the building was designed by L.F. Goodrich in the Neoclassical Revival style. This courthouse replaced one destroyed by fire, and the present courthouse suffered from a severe fire in 1919.

- *Carswell Grove Baptist Church and Cemetery* (listed 1996). The building's Gothic Revival-style details include pointed-arch windows with simple tracery and drip-molds, blind pointed arches applied to above the entrance doors, and a scalloped raking cornice along the front gable. The property is significant in

African-American heritage and religion because it has served the religious, social and cultural needs of a remote, rural African-American community.

- *Downtown Millen Historic District* (listed 1996). Located in the central business district of Millen. The district extends over portions of six city blocks along Cotton Avenue.

- *Millen High School* (listed 2002). Located on a large corner lot in a residential area of Millen. Three buildings, two contributing and one noncontributing, constructed at different times, make up the school campus. The complex is significant in the area of architecture as a good example of a school constructed over time for a small Georgia community.

Recreation

Magnolia Springs State Park, located 5 miles north of Millen on U.S. Hwy. 25 in north Jenkins County, is known for its crystal-clear springs flowing 7 million gallons of water per day and the beautiful boardwalk which spans the cool water. The park covers over 1,700 acres of recreational and park space. During warmer months, visitors may watch for alligators, turtles and other wildlife near the springs. A free, freshwater aquarium features native species, and a 28-acre lake with accessible dock available for fishing and boating. There is also over 10-miles of hiking and biking trails, camping facilities, three playgrounds, a swimming pool, picnic areas, and many more amenities for visitors.

The Ogeechee River runs through Jenkins County and it is one of the county's largest tourist attractions. The Ogeechee is the largest continuous flowing river east of the Mississippi River. People enjoy fishing, boating, swimming, camping and other recreational activities on the Ogeechee.

Economic Drivers

The County lies strategically between Augusta and Savannah and is striving to benefit from the growth of both regional centers. The county has access to I-20, I-16 and I-95 via U.S. 25. The Savannah River Parkway, a four-lane divided highway connects Augusta to Savannah. Millen, Georgia is the HUB of this Parkway and the 4-lane highway that continues from Millen on to Statesboro and to I-16.

Jenkins County also has convenient access to the international Port of Savannah, serviced by over 100 daily motor carriers and the capacity to handle thousands of containers. Other transportation related opportunities include rail service provided by Norfolk Southern Railway. Millen serves as the switching station for the Norfolk Southern Railway from Atlanta to Savannah, to Augusta, etc. With direct access to the ports of Savannah, hundreds of trains are routed through Millen and switched to many different destinations.

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 or low priority status.

The committee used the STAPLEE worksheet to select and prioritize the most appropriate mitigation alternatives. This methodology requires that seven categories be considered when reviewing potential actions. This process helped ensure that the most equitable and feasible actions would be undertaken based on each jurisdiction's capability. Table 3.5 provides information regarding the review and selection criteria for alternatives.

Table 3.5

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?
• It is 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 that Jenkins County together with Millen 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 or low 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 as a result of 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 62% 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 IV, wildfires have the potential to cause costly damage in Jenkins 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. Tornado

Since the exact time and location of a tornado is not always predictable, all of Jenkins County is vulnerable. A tornado can cause 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 Jenkins County as a result of a tornado event. 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.

Objective G1. Minimize damage to property from a tornado events.
Objective G2. Minimize damage to public buildings and critical facilities to ensure continual operations of vital services.
Objective G3. Protect vulnerable populations from the effects of severe weather events.
Objective G4. Educate the public including citizens and business owners on disaster preparedness and safety.

F. Tropical Storm

As with many Georgia communities, if a tropical storm were to strike Jenkins 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 Jenkins County as a result of a tropical storm. 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

Objective F1. Minimize damage to property from tropical storm events.

Objective F2. Minimize damage to public buildings and critical facilities to ensure continual operations of vital services.

Objective F3. Protect vulnerable populations from the effects of tropical storm events.

Objective F4. Educate the public including citizens and business owners on disaster preparedness and safety.

G. Severe Weather (Thunderstorm Winds, Lightning, Hail) Thunderstorm winds, lightning and hail can affect the entire county given the right conditions. As with many Georgia communities, if a tornado or tropical storm were to strike Jenkins 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 Jenkins County as a result of a severe weather event. 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 thunderstorm winds, lightning and hail to both new and existing structures.

Objective G1. Minimize damage to property from severe weather events.

Objective G2. Minimize damage to public buildings and critical facilities to ensure continual operations of vital services.

Objective G3. Protect vulnerable populations from the effects of severe weather events.

Objective G4. Educate the public including citizens and business owners on disaster preparedness and safety.

H. Winter Storms Action Plan

Within Jenkins 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, Jenkins County and other southeastern communities must be prepared for the damage caused by winter storms. The fact that winter storms hit Jenkins County infrequently results in other problems, such as lack of equipment and supplies to combat treacherous winter storm conditions. In Jenkins County, the formation of ice on roads and bridges, tree limbs, and power lines is the cause of most damage. In Chapter II, Section VIII 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 H1. Educate the public on preparedness and safety issues for winter storm events.

Objective H2. Prevent property damage as a result of a winter storm event.

Objective H3. Minimize power outages during winter storms.

I. 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 I1. Ensure communication capabilities exist between all Emergency Service Personnel and Agencies.

Objective I2. 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 I3. Protect critical facilities from the effects due to power outages as a result of all hazards to ensure a continuation of all vital services.

Objective I4. Provide adequate notification to citizens of Jenkins County pertaining to hazard event.

Objective I5. Guarantee all evacuation plans are up to date and adequate to meet the needs of the citizens of Jenkins County.

Objective I6. Guarantee that all Emergency Response Plans are up to date and adequate to meet the needs of citizens of Jenkins County.

Objective I7. Ensure all emergency shelters are ready to meet the needs of the population of Jenkins County and Millen.

Objective I8. Provide the citizens of Jenkins County educational information on Emergency Preparedness.

Objective I9. Provide the citizens of Jenkins County with accurate and timely information pertaining to Emergency Preparedness.

Objective I10. Collect accurate and complete data pertaining to hazard events within Jenkins County and all jurisdictions.

SECTION III. MITIGATION ACTIONS

Table 3.6

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source	Time Frame	Status	Priority
1.	Continue to assess storm water runoff.	Jenkins County/ Millen	Public Works	Flood	A5, C2	2, 6	Non-Structural	Staff time	General Funds	2019-2024	Ongoing Done as part of public works job	High
2.	Construct as needed, more storm water retention facilities, storm drain improvements and channel improvements to protect existing and new developments. Identified projects to date: • West Old Savanah Road. • Elam Road between Hwy 25&121 • Clayton Road • Johnson & Herndon Roads • Washington Street Neighborhood	Jenkins County/ Millen	BOC/City Council/ Public Works	Flood/ Drought	A3, A5, C2	2, 6	Structural	$3,000,000	General Funds	2019-2024	Ongoing As funding becomes available	High
3.	Clear run-off and water retention ditches.	Jenkins County/ Millen	Public Works/ Road Dept.	Flood	A5	2, 1	Structural	Staff Time	Staff Time and General Funds	2019-2024	Ongoing Ditches are cleared by Road Dept. as part of their work load.	High
4.	Seek funding for communication towers and voice repeater systems.	Jenkins County/ Millen	BOC/City Council/ EMA/Police /Sheriff	All hazards	I1, I9	1	Structural	$750,000	General Fund, FEMA, CJCC, JAG, USDA, DOJ	2019-2022	Ongoing As funding becomes available	High
5.	Evaluate existing water system upgrade as needed	Millen	Public Works	Flood/ Drought/ Wildfire	A6, C1, D1	1, 2, 6	Structural	2,000,000	General Fund, CDBG, USDA, EPA, DNR	2019-2024	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	Time Frame	Status	Priority
6.	Investigate methods to reduce non-point source pollution.	Jenkins County/ Millen	Public Works	Flood	A1	1, 2, 5	Non-Structural	$1,000,000	USDA, EPA, DNR	2019-2022	No projects have been identified	Low
7.	Enact a program to educate the residents about water conservation issues	Jenkins County/ Millen	BOC/City Council/ Public Works	Drought	C1, C2	1, 3	Non-Structural	$2,000.00	USDA, EPA, DNR, General Funds	2019-2024	Stalled due to staff time	High
8.	Increase public awareness of watering restrictions and bans.	Jenkins County/ Millen	Public Works	Drought	C1, C2	1, 3	Non-Structural	Staff Time	General Funds	2019-2024	This is done during state declared droughts	High
9.	Develop a public awareness campaign to promote water-saving campaigns (i.e. low-flow water saving devices)	Jenkins County/ Millen	Public Works/ Building Inspection	Drought	C1, C2	1, 3	Non-Structural	Staff Time	General Funds	2019-2024	This is done as part of building permits and water department	Low
10.	Continue training of all firefighters to include wildland fire training.	Jenkins County/ Millen	BOC/City Council /EMA/Fire Dept.	Wildfire	D1	1, 2	Non-Structural	$50,000	General Funds, FEMA	2019-2024	Ongoing Training is ongoing through the year	High
11.	Seek funding for needed firefighting equipment	Jenkins County/ Millen	BOC/City Council /EMA/Fire Dept.	Wildfire	D1	1, 2	Non-Structural	$100,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	High
12.	Inventory and replace or install more fire hydrants as needed.	Jenkins County/ Millen	BOC/City Council/ Public Works	Wildfire	D1	1, 2	Structural	$50,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	High
13.	Seek funding for fire engines, wildland brush truck, and tankers for local fire departments.	Jenkins County/ Millen	BOC/City Council /EMA/Fire Dept.	Wildfire	D1	1, 2	Non-Structural	$750,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	High
14.	Implement the Fire wise Community Initiative where appropriate	Jenkins County/ Millen	BOC/City Council/ EMA/ Planning	Wildfire	D2, D3	1, 2, 3	Non-Structural	$25,000	General Funds, GFC	2019-2024	Stalled as no communities have been identified to participate	Low

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source	Time Frame	Status	Priority
15.	Improve public awareness of wildfire techniques and awareness of wildfire dangers.	Jenkins County/ Millen	EMA/Fire Dept.	Wildfire	D2, D3	1, 2, 3	Non-Structural	Staff time	General Funds	2019-2024	Ongoing Info will be added to website and Facebook page as appropriate	High
16.	Equip all county and city recreation parks with adequate early severe weather warning and lightning detection devices.	Jenkins County/ Millen	BOC/City Council/ Recreation Dept.	Tornado, Severe Weather	E1, E2. E3 G1, G2, G3	1, 2, 6	Structural	$50,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	High
17.	Inspects public buildings and critical facilities and retrofit to reinforce windows, doors, and roofs as needed	Jenkins County/ Millen	Code Enforcement and Building Inspection	Tornado/ tropical Storms/ Severe Weather/ Winter Storm	E1, E2. E3 F1, F2, F3 G1, G2, G3	1, 2, 6	Structural	$100,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available and projects are identified	Medium
18.	Enforce building codes for all new buildings and critical facilities.	Jenkins County/ Millen	Code Enforcement and Building Inspection	Flood, Tornado/ tropical Storms/ Severe Weather/ Winter Storm	A5, A6, E1, E2, F1, F2, G1, G2	1, 2, 6	Structural/ Non-Structural	Staff time	General Funds, FEMA	2019-2024	Ongoing Enforced when Building Permits are issued.	High
19.	Install lightning rods in high value critical facilities.	Jenkins County/ Millen	Public Works/ Building Dept.	Lightning	G1,G2, G3	1, 2, 6	Structural	$100,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	High
20.	Review current Emergency Response Plan and update when needed.	Jenkins County	EMA	All hazards	I6, I8	1, 2, 3	Non-Structural	Staff Time	General Funds	2019-2021	Updated as required Update is in process now. Should be completed by the end of the year.	High

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source	Time Frame	Status	Priority
21.	Review current evacuation plans paying particular attention to vulnerable populations and update as needed.	Jenkins County	EMA/ Board of Education	Flood, Wildfire, Dam Failure, Tornado/ tropical Storms, Severe Weather, Winter Storm	I5, I8	1, 2, 3	Non-Structural	Staff Time	General Funds	2019-2021	Updated as required	High
22.	Develop a public awareness program about the installation of lightning grounding systems on critical infrastructure, residential and business properties.	Jenkins County/ Millen	EMA/ Code Enforcement and Building Inspection/ Public Works	Lightning	G4	1, 2, 3	Non-Structural	Staff Time	General Funds	2019-2021	Stalled due to lack of staff	Low
23.	Inventory all critical facilities and assess generator needs. Install generators where needed.	Jenkins County/ Millen	BOC/City Council/ EMA/ Fire Dept./ Sheriff/ Public Works	All hazards	I3	1, 2, 3, 6	Structural/Non-Structural	$100,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	High
24.	Seek funding to ensure all current and future emergency shelters have back-up generators.	Jenkins County/ Millen	BOC/City Council/ EMA/ Board of Education	All hazards	I7	1, 2, 3, 6	Structural/	$50,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	High
25.	Educate the public on shelter locations and evacuation routes	Jenkins County/ Millen	EMA	Flood, Wildfire, Dam Failure, Tornado/ tropical Storms, Severe Weather, Winter Storm	I8, I9	3	Non-Structural	Staff Time	General Funds	2019-2024	Information is posted on Facebook and EMA website as needed	High

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source	Time Frame	Status	Priority
26.	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.	Jenkins County/ Millen	EMA	Flood, Wildfire, Dam Failure, Tornado/ tropical Storms, Severe Weather, Winter Storm	I8, I9	3	Non-Structural	$10,000 and Staff Time	General Funds, FEMA	2019-2024	Information is posted on Facebook and EMA website as needed	Medium
27.	Implement a winter storm education program to include winterization of home and/or business and what to do before, during and after.	Jenkins County/ Millen	EMA/ Building Dept.	Winter Storm	H1	3	Non-Structural	$10,000 and Staff Time	General Funds	2019-2021	Information is posted on Facebook and EMA website as needed	Medium
28.	Create a data base to record hazard event information.	Jenkins County/ Millen	BOC/City Council/ EMA	All hazards	I10	1, 2, 3,	Non-Structural	Staff Time	General Funds	2019-2021	Stalled due to lack of staff	Low
29.	Conduct dam breach analysis to identify assets and population at risk in the event of a failure.	Jenkins County/ Millen	BOC/City Council/ EMA	Dam Failure	B1, B2	1, 2,	Non-Structural	$100,000	General Funds, DNR	2019-2024	Stalled due to funding	Low
30.	Draft ordinance prohibiting development in dam breach zone.	Jenkins County/ Millen	BOC/City Council/ Planning and Zoning	Dam Failure	B2	1, 2, 4	Non-Structural	Staff Time	General Funds	2019-2020	In progress	Medium
31.	Inventory existing road equipment and purchase needed equipment to maintain roads before, during and after a hazard event.	Jenkins County/ Millen	BOC/City Council/ EMA/Public Works/ Road Dept.	Flood, Tornado/ tropical Storms/ Severe Weather, Winter Storm	I2	1, 2	Non-Structural	$150,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	Medium

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source	Time Frame	Status	Priority
32.	Develop coordinated management strategies for deicing, snow plowing, and clearing roads of fallen trees and debris	Jenkins County/ Millen	BOC/City Council/ EMA/Public Works/ Road Dept.	Flood, Tornado/ tropical Storms/ Severe Weather, Winter Storm	I2	1, 2	Non-Structural	Staff Time	General Funds	2019-2021	Stalled due to staff time	Low
33.	Promote the construction of safe rooms in shelter areas and in public buildings.	Jenkins County/ Millen	BOC/City Council/ EMA	Flood, Wildfire, Dam Failure, Tornado/ tropical Storms/ Severe Weather, Winter Storm	I3	1, 2, 6	Structural	$100,000	General Funds, FEMA	2019-2024	Ongoing as funding becomes available Have applied for a FEMA Grant in 2019	Medium
34.	Promote and participate in the following American Red Cross Programs • Disaster Resistant Neighborhoods Program • Business and Industry Preparedness Seminar • Community Disaster Education Preparedness presentations	Jenkins County/ Millen	BOC/ City Council/ EMA	All hazards	I4, I8, I9	1, 2 ,3	Non-Structural	$10,000	General Funds, FEMA	2019-2022	Ongoing	Low
35.	Continue update of EMA website and Facebook page with information pertaining to Emergency Preparedness/ Weather Events and Education.	Jenkins County	EMA	All hazards	I4, I5, I6, I7, I8, I9.	1, 2 ,3	Non-Structural	Staff Time	General Funds	2019-2024	Ongoing updated as needed	High
36.	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.	Jenkins County/ Millen	BOC/ City Council/ EMA/ Fire Dept./	All hazards	I9, I10	1, 2, 6	Non-Structural	$50,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	Low

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source	Time Frame	Status	Priority
37.	Pave Roads in county that are unpassable due to flooding.	Jenkins County	Road Dept.	Flood/ Tornado/ tropical Storms/ Severe Weather			Structural	$1,500,000	General Funds T-SPLOST FEMA, DOT	2019-2024	Ongoing As funding becomes available	High
38.	Purchase a Wheeled Excavator	Jenkins County/ Millen	BOC/City Council/ EMA/ EMS	All Hazards	I2	1, 2	Non-Structural	$250,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	High
39.	Provide NOAA weather radios to elderly and handicap populations	Jenkins County/ Millen	BOC/City Council	Flood, Wildfire, Dam Failure, Tornado/ tropical Storms/ Severe Weather, Winter Storm	14, 18, 19	1, 2,3	Non-Structural	$50,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	Medium
40.	Seek funding to purchase two 6x6 off road UTV transport vehicles for Jenkins County EMS.	Jenkins County/ Millen	BOC/City Council/ EMA/ EMS	All hazards	E3, F3, G3,	1	Non-Structural	$90,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	High
41.	Preform procurement to contract with debris removal firm to have contract in place before hazards to ensure firm can move in immediately.	Jenkins County/ Millen	BOC/City Council	Winter Storm, Tornado/ tropical Storms/ Severe Weather, Flood, Wildfire,	I2	1, 2	Non-Structural	Staff Time	General Funds	2019-2022	Stalled due to staff time and funding	Low

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 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 all hazard 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/ UNCHANGED AND/OR CONTINUAL ACTION STEPS

Table 3.7

Action #	Completed and Deleted Action Steps Unchanged and/or Continual Action Steps	Hazards	Status	Comments / Accomplishments
1.	Investigate greater participation Level in the NFIP and CRS	Flood	Deleted	The cost of participation in the CRS is too costly for this small city and county
2.	Continue to assess storm water runoff.	Flood	Continual/ Unchanged	
3.	Construct as needed, more storm water retention facilities, storm drain improvements and channel improvements to protect existing and new developments.	Flood/ Drought	Continual/ Unchanged	Jenkins County complete a flood and drainage project on Brannen Road and Edgar Lane Road $100,000 using Community Development Block Funds and General Funds. Millen will start another flood/drainage project in Oct 2019 in the Washington Street Neighborhood
4.	Clear run-off and water retention ditches.	Flood	Continual/ Unchanged	
5.	Seek funding for communication towers and voice repeater systems.	All hazards	Continual/ Unchanged	
6.	Adopt ordinances to limit and control building and development in known flood prone areas.	Flood	Completed	Both Jenkins County and Millen have adopted flood plain ordinances
7.	Promote the preservation of areas in and around watercourses.	Flood	Deleted	Development is limited due to flood ordinances.

Action #	Completed and Deleted Action Steps Unchanged and/or Continual Action Steps	Hazards	Status	Comments / Accomplishments
8.	Add greenspace to known flood prone areas.	Flood	Deleted	
9.	Evaluate existing water system upgrade as needed	Drought/ Wildfire	Continual/ Unchanged	
10.	Investigate methods to reduce non-point source pollution.	Flood	Continual/ Unchanged	
11.	Promote increased surface water usage and surface artesian flow for irrigation.	Drought	Deleted	
12.	Enact a program to educate the residents about water conservation issues	Drought	Continual/ Unchanged	
13.	Increase public awareness of watering restrictions and bans.	Drought	Continual	GA EPD water restrictions are posted and advertised as required by law.
14.	Develop a public awareness campaign to promote water-saving campaigns (i.e. low-flow water saving devices)	Drought	Continual/ Unchanged	
15.	Continue training of all firefighters to include wildland fire training.	Wildfire	Continual/ Unchanged	All paid firefighters have had 240 hours of annual training. All volunteer firefighters have completed annual fire training requirements
16.	Seek funding for needed firefighting equipment	Wildfire	Continual/ Unchanged	Millen purchased 10 sets of turnout gear for $20,000
17.	Inventory and replace or install more fire hydrants as needed.	Wildfire	Continual/	Millen installed seven fire hydrants for $24,605
18.	Seek funding fire engines and tankers for local fire departments.	Wildfire	Continual/ Unchanged	
19.	Enforce defensible space (30-ft minimum setbacks) between buildings and flammable brush and forestland where possible.	Wildfire	Completed	This is followed to the greatest extent possible
20.	Continue following GFC service of construction and maintenance of firebreaks around forests and structures, along abandoned roadbeds.	Wildfire	Completed	This is followed to the greatest extent possible
21.	Strictly follow GFC's guidelines for control burns and permits.	Wildfire	Completed	This is strictly enforced
22.	Implement the Fire wise Community Initiative where appropriate	Wildfire	Continual/ Unchanged	
23.	Improve public awareness of wildfire techniques and awareness of wildfire dangers.	Wildfire	Continual/ Unchanged	
24.	Adopt Building Codes	Flood, Severe Weather, Winter Storm	Completed	Both Jenkins County and Millen have adopted building codes. These are revised and revised as needed and during the Comprehensive Plan Update
25.	Adopt Zoning Regulations	Flood, Severe Weather, Winter Storm	Completed	Both Jenkins County and Millen have adopted zoning regulations. These are revised and revised as needed and during the Comprehensive Plan Update

Action #	Completed and Deleted Action Steps Unchanged and/or Continual Action Steps	Hazards	Status	Comments / Accomplishments
26.	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.	Severe Weather	Deleted	No funding exists for this activity.
27.	Equip all county and city recreation parks with adequate early severe weather warning and lightning detection devices.	Severe Weather	Continual/ Unchanged	Have applied for a grant for a lightning detection system.
28.	Inspects public buildings and critical facilities and retrofit to reinforce windows, doors, and roofs as needed	Severe Weather, Winter Storms	Continual/ Unchanged	
29.	Enforce building codes for all new buildings and critical facilities.	Flood, Severe Weather, Winter Storm	Continual/ Unchanged	This is accomplished when new building permits are issued and inspections take place.
30.	Inspect all county and municipal critical facilities for proper grounding.	Flood, Severe Weather, Winter Storm	Completed	All facilities have proper grounding
31.	Install lightning rods in high value critical facilities.	Severe Weather, Lightning	Continual/ Unchanged	
32.	Install surge protectors on critical facilities' electronic equipment in essential county and city facilities.	Severe Weather, Lightning , Winter Storm	Completed	All facilities have surge protectors.
33.	Review current Emergency Response Plan and update when needed.	All hazards	Continual/ Unchanged	LEOP is under revision and should be completed this year.
34.	Review current evacuation plans paying particular attention to vulnerable populations and update as needed.	Flood, Wildfire, Dam Failure, Severe Weather, Winter Storm	Continual/ Unchanged	
35.	Provide boat owners with safety tie down procedures with boat registration.	Severe Weather, Winter Storm	Deleted	
36.	Develop a public awareness program about the installation of lightning grounding systems on critical infrastructure, residential and business properties.	Severe Weather, Lightning	Continual/ Unchanged	
37.	Inventory all critical facilities and assess generator needs. Install generators where needed.	All hazards	Continual/ Unchanged	

Action #	Completed and Deleted Action Steps Unchanged and/or Continual Action Steps	Hazards	Status	Comments / Accomplishments
38.	Seek funding to ensure all current and future emergency shelters have back-up generators.	All hazards	Continual/ Unchanged	
39.	Educate the public on shelter locations and evacuation routes	Flood, Wildfire, Dam Failure, Severe Weather, Winter Storm	Continual/ Unchanged	The EMA has set up a Facebook with educational information
40.	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.	Flood, Wildfire, Dam Failure, Severe Weather, Winter Storm	Continual/ Unchanged	The EMA has set up a Facebook with educational information
41.	Implement a winter storm education program to include winterization of home and/or business and what to do before, during and after.	Winter Storm	Continual/ Unchanged	The EMA has set up a Facebook with educational information
42.	Review current codes to comply with and enforce the State building code with criteria for design snow load for buildings and structures.	Winter Storm	Completed	Both Jenkins County and Millen adhere to State building Codes
43.	Create a data base to record hazard event information.	All hazards	Continual/ Unchanged	
44.	Conduct dam breach analysis to identify assets and population at risk in the event of a failure.	Dam Failure	Continual/ Unchanged	
45.	Draft ordinance prohibiting development in dam breach zone.	Dam Failure	Continual/ Unchanged	
46.	Install dam failure alert systems.	Dam Failure	Deleted	All dams have an alert system
47.	Inventory existing road equipment and purchase needed equipment to maintain roads before, during and after a hazard event.	Flood, Severe Weather, Winter Storm	Continual/ Unchanged	
48.	Develop coordinated management strategies for deicing, snow plowing, and clearing roads of fallen trees and debris	Flood, Severe Weather, Winter Storm	Continual/ Unchanged	
49.	Promote the construction of safe rooms in shelter areas and in public buildings.	Flood, Wildfire, Dam Failure, Severe Weather, Winter Storm	Continual/ Unchanged	Have applied for a FEMA grant for a safe room.

Action #	Completed and Deleted Action Steps Unchanged and/or Continual Action Steps	Hazards	Status	Comments / Accomplishments
50.	Update 911 equipment as needed.	All hazards	Continual/ Unchanged	
51.	Request that all new education facilities be designed to serve as public shelters for emergency purposes.	All hazards	Deleted	All emergency shelters have been removed from schools. They do not want to remove children from schools to house evacuees.
52.	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 hazards	Continual/ Unchanged	
53.	Create an EMA website with information pertaining to Emergency Preparedness.	All hazards	Continual/ Unchanged	EMA website is updated as needed
54.	Work with local cable and radio providers to enhance and broadcast public education on Emergency Preparedness.	All hazards	Completed	The county and city have a good relationship with media
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.	Flood, Wildfire, Dam Failure, Severe Weather, Winter Storm	Continual/ Unchanged	
56.	Purchase a portable sewer transfer pumping unit	Flood, Severe Weather, Winter Storm	Deleted	It is more cost effect to rent one if need than to won and have to maintain.
57.	Herman Nelson Warming System AIR HEATER w/TRAILER	Winter Storm	Deleted	Not cost effective.
58.	Purchase New UHF System and bring all jurisdictions into the new system	All hazards	Completed	Both the city and county are on the UHF.
59.	Storm Drainage Improvements on Plum Street by the Community House.	Flood/	Completed	Storm Drainage Improvements on Plum Street by the Community House. Millen in 2016 for $565,000 using Community Development Block Funds and General Funds
60.	Purchase a Brush Fire Truck	Wildfire	Continual/ Unchanged	**Moved to action step # 13 in Table 3.6**
61.	Purchase a Bucket Truck to Remove Limbs along county road right-of-ways	Flood, Severe Weather, Winter Storm	Deleted	Limbs are removed by Electric Companies.
62.	Pave Roads in county that are unpassable due to flooding	Flood, Severe Weather,	Continual	Reagan Road, Brannen Road and Edgar Lane Road were paved for 400,000 using CDBG and local funds

Action #	Completed and Deleted Action Steps Unchanged and/or Continual Action Steps	Hazards	Status	Comments / Accomplishments
63.	Storm Drainage Improvements on West Old Savanah Road.	Flood, Severe Weather,	Unchanged	**Moved to Action Step #2 in Table 3.6**
64.	Storm Drainage Improvements Elam Road between Hwy 25&121	Flood, Severe Weather,	Unchanged	**Moved to Action Step #2 in Table 3.6**
65.	Storm Drainage Improvements on Clayton Road.	Flood, Severe Weather,	Unchanged	**Moved to Action Step #2 in Table 3.6**
66.	Purchase generators for the following critical facilities: County Annex, .E.M.S. station, Court House, County Maintenance Shop, County Road Department Headquarters, and County Fuel Port (which supports Fire, E.M.S., Sheriff, City Police, School Busses, City Utility, County Road Department and Landfill.)	All hazards	Continual	Jenkins County installed a generator at the fuel station maintenance shop for $76,600. **Moved to Action Step #23 in Table 3.6**
67.	Work with hospital and nursing home to ensure their generators are operational	Flood, Wildfire, Dam Failure, Severe Weather, Winter Storm	Completed	The EMA director has worked with the facilities and all is operational. He checks them twice a year for maintenance.
68.	Storm Drainage Improvements at Johnson & Herndon road	Flood, Severe Weather,	Unchanged	**Moved to Action Step #2 in Table 3.6**
69.	Purchase a Wheeled Excavator	Wildfire	Continual/ Unchanged	
70.	Identify property owners who reside on Plum Ave that are continually subject to flooding and relocate or mitigate.	Flood/ Severe	Deleted	The problems have been resolved as a result of the storm drainage project listed in Action Step # 59 above
71.	Provide NOAA weather radios to elderly and handicap populations (moved to all hazards).	Flood, Wildfire, Dam Failure, Severe Weather, Winter Storm	Continual	Purchased 300 NOAA radios under a grant for 7,500 and will purchase 250 more with grant funds within the next year.
72.	Seek funding for Code Red System	All Hazards	Completed	Jenkins County has implemented Code Red.
73.	Seek funding to construct a lake/reservoir as an alternate water source	Drought	Deleted	Not cost effective
74.	Seek funding to purchase two off road UTV transport vehicles for Jenkins County EMS.	All hazards	Continual/ Unchanged	
75.	Seek funding for a 50kw generator to use at the EMS station	All hazards	Completed	

Action #	Completed and Deleted Action Steps Unchanged and/or Continual Action Steps	Hazards	Status	Comments / Accomplishments
76.	Seek funding for a wildland brush truck.	Wildfire	Unchanged	**Moved to Action Step #13 in Table 3.6**
77.	Install a safe room in the new school that is being constructed.	Severe Weather	Deleted	
78.	Preform procurement to contract with debris removal firm to have contract in place before hazards to ensure firm can move in immediately.	Winter Storm, Severe Weather, Flood, Wildfire,	Continual/ Unchanged	
79.	Run HAZUS scenarios once the software is updated and compatible to RC ArcGIS 10.2 and updated estimated losses.	Flood/ Severe Weather	Completed	A copy can be found in Appendix C
80.	Install Tornado outdoor emergency warning sirens	Tornado	Completed	While this was not in the mitigation strategies the county installed two for $60,000

CHAPTER IV. PLAN INTEGRATION AND MAINTENANCE

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

Table 4.1

Chapter I. Section	Updates to Section
I. Implementation Action Plan	General text edits based on current conditions and schedules; elaborated on how HMP is incorporated into other plans.
II. Evaluation, Monitoring, Updating Note whether the original method and schedule worked	Text edits based on previous experiences and future public involvement.
III. Plan update and maintenance	Regulated update and maintenance schedule and public involvement

SECTION I. Implementation Action Plan

A. Administrative Actions: Jenkins County Emergency Management Agency was responsible for overseeing the original planning process and the plan update. Facilitation of the planning process was conducted by the Central Savannah River Area Regional Commission. The Jenkins County Board of Commissioners has authorized the submission of this plan to both GEMA and FEMA for their respective approvals. The Jenkins County Board of Commissioners and the City Council of Millen have formally adopted this plan after approval from GEMA and FEMA.

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 Jenkins County Board of Commissioners and the Mayor of Millen 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 and list of mitigation actions. Each action item was discussed and a consensus reached by the group on the importance of each item. A score of high, medium or low was assigned to each to each item to help determine the priority level.
    - High: Strategies that would have a direct, large impact on mitigation of hazards. A project that meets multiple plan goals and objectives, benefits exceed cost, has funding secured under existing programs or authorizations, or is grant-eligible, and can be completed in 1 to 5 years. It may also be a project that just requires staff time but has great benefit, i.e., adoption of flood plain ordinances.
    - Medium: Strategies that meet at least one plan goal and objective, benefits exceed costs, funding has not been secured or requires substantial staff time and can be completed in 1 to 5 years.
    - Low: Strategies that are important but requires substantial staff time, or addition of staff and resources that are not readily available to implement.

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 2014 plan was reviewed to determine if any of the mitigation activities need to be added to the above-mentioned documents. The requirements of this Hazard Mitigation Plan were taken into consideration and incorporated into Comprehensive Plans, Five-Year Short-Term Work Program, Local Emergency Operations Plans, and all other such Plans as part of the planning process and incorporated as needed. The County along with Millen worked jointly to produce these planning documents.

The STWP will be updated in 2023 and the Joint Comprehensive Plan is due for an update in 2028. The RC facilitates the planning process for both documents and updates both plans. The County takes the lead and all jurisdictions must participate to complete the comp plan and STWP. This update will be reviewed by the County and Millen. The current update 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. Goals and strategies will be incorporated in the land use section of the comprehensive plan update. Mitigation strategies will be listed in the STWP to ensure their eligibility for funding from the state if available. In addition, relevant sections will be included in the revision of the LEOP which is currently being updated.

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, Jenkins County 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

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, Jenkins County is required to review the PDM 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 which will include a schedule, timeline, and a list of the agencies or organizations participating in the plan revision. Jenkins County and all incorporated jurisdictions 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.

Table 4.2

Jurisdiction	Hazard Mitigation Update Committee	Review
	Point-of-Contact	Schedule
Jenkins County	Emergency Management Director	Annually
Millen	City Manager	Annually

D. Timeframe: The committee has set the third Thursday of every January 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: Jenkins 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 was not as successful as anticipated in ensuring community involvement. With this in mind, two weeks before the annual January review meeting, a notice will be published in the legal organ of Jenkins 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 new EMA website will also provide ongoing information about the plan and its implementation.

B. Timeframe -- Pursuant to the requirements set forth in the Disaster Mitigation Act of 2000, the community is again required to update and evaluate the plan no more than five years after its adoption. At least one year prior to the end of the required five-year update period, the EMA Director will begin the planning process for a new update to this plan. This will consist of establishing a new planning committee that will be tasked with completing the update following the same process used for this update.

No later than the conclusion of the five-year period following approval of the plan update, the EMA Director shall submit a revised Hazard Mitigation Plan to GEMA for its approval. It is important to note that the plan update process, as established by the planning committee, is subject to change, depending upon subsequent regulations and/or requirements set forth by GEMA and FEMA.

CHAPTER V. Conclusion

SECTION I. Summary

Through the update process of this plan, Jenkins 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 have been compiled and prioritized that would reduce the risk of lives and property as a result of the identified hazards. 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 PDM planning process, Jenkins 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 Millen News*, providing Jenkins 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 Jenkins 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 Jenkins County Pre-Disaster Hazard Mitigation Planning Committee is to "*Make the citizens, businesses, communities and local governments of Jenkins 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 Jenkins 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 Millen News
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

Web Sites:

FEMA www.fema.gov
GEMA www.gema.state.ga.us
Georgia Department of Community Affairs http://www.dca.state.ga.us/
Georgia Forestry Commission http://weather.gfc.state.ga.us
NOAA NCEI www.ncdc.noaa.gov
SHELDUS™ | Spatial Hazard Events and Losses Database for the United States
https://sheldus.asu.edu/SHELDUS
National Inventory of Dams https://nid.sec.usace.army.mil/
http://www.placenames.com
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, 2017 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
Jenkins County, City of Millen
Jenkins County Board of Education
Jenkins County Tax Assessor

APPENDICES

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

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

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

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

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

V. Hazard E - Tornado
   a. Description
   b. Historical Event Table
   c. Data – GEMA Critical Facility Inventory Report
   d. Maps

VI. Hazard F – Tropical Storms
   a. Description
   b. Historical Event Table
   c. Data – GEMA Critical Facility Inventory Report
   d. Maps

VII. Hazard G – Severe Weather, Including Thunder Storms, Lightning, Hail
   a. Description
   b. Historical Event Table
   c. Data – GEMA Critical Facility Inventory Report
   d. Maps

VIII. Hazard F – Winter Storm
   a. Description

b. Historical Event Table
c. Data – GEMA Critical Facility Inventory Report
d. 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. Executive Summary GEMA State Emergency Operations
III. Hazard Risk Analysis
IV. Flood Insurance Study
V. Community Wildfire Protection Plan
VI. Timber Impact Assessment GFC
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