

Burke County, Georgia
Multi-Hazard Pre-Disaster Mitigation Plan
Original Plan Approval: 05/06/2009
Update Plan Approval: 01/04/2015
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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	There have been numerous changes to the GEMA -PDM planning template since the 2014 approval. 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 Burke County Update is the review and improvement to our Multi-Hazard Pre-Disaster Mitigation Plan approved on May 6, 2009 and updated on January 4, 2015. The plan fulfills the requirements of the Federal Disaster Mitigation Act of 2000 (DMA2K). 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 plan has involved multiple community partners including elected officials, city and county personnel, fire, emergency management, law enforcement, and public works. The ultimate goal of this plan is to identify natural hazards and develop strategies to lessen their impact on our

community.

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 update covers all of Burke County to include the cities of Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro. The plan will identify all-natural disasters that could threaten the lives and properties of our community. The scope of the update includes both short and long-term mitigation strategies, implementation policies and possible sources of project funding. It also identifies mitigation strategies implemented since the last plan update.

The plan also contains the following information on:

- The vision of mitigation in our community;
- The profile of Burke 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;
- Burke 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 Burke 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 Burke 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 Burke County, Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro. Realizing that identifying the community's risks and working collectively toward the prevention of disasters in the community is in the county's best interest, the Burke 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 Burke County, Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro.

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

SECTION II. LOCAL METHODOLOGY, PLAN UPDATE PROCESS AND PARTICIPANTS

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

EMA Director Jesse E. Rusty Sanders assembled the Hazard Mitigation Planning Committee. The table below identifies the 2019 members.

Name	Agency/Title	Jurisdiction
Merv Waldrop	County Administrator	Burke County
Jerry Coalson	City Manager	City of Waynesboro
Amylia Lester	Public Info. Office BCEMA	Burke County
Tommy L Henderson	Waynesboro Police Dept. Operations Commander/Police Chief	City of Waynesboro
Scott Lee	Burke Building Official	Burke County
Paul D. Burke	Burke County Road Supervisor	Burke County
Peter L Williams	Burke County Animal Service Director	Burke County
Jesse Burke	Waynesboro Public Works Director	City of Waynesboro
Loren Barnhart	Facility & I.T. Director	Burke County
Augustus Palmer III	Waynesboro Police Chief	City of Waynesboro
Cedric Duncan	Waynesboro Police Dept. Major	City of Waynesboro
Inez Penrow	Burke County Health Dept Nurse	Burke County
Robert Parrish	Waynesboro Police Deputy Chief	City of Waynesboro
Carol Edmonds	Mayor	City of Sardis
Jennie Johnson	City Clerk	City of Sardis
L Myron Williams	GFC Chief Ranger	Burke County
Jessica Hood	Burke County Development Authority Director	Burke County
Kim Reddick	City Clerk	City of Girard
Trinetta Skinner	Community Development Dir.	City of Waynesboro
Rosemary Baughman	Mayor Vidette	City of Vidette
Meschary Pollard	City Administrator	City of Keysville
Sara E. Cook	City Clerk	City of Midville

The 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 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:

- Burke County School District was responsible for providing structural replacement and content values for all schools as well as square footage and occupancy limits.
- Police Departments for the Cities of Midville, Sardis and Waynesboro provided staff support and were responsible for providing structural replacement and content values for all critical facilities located in their respective cities as well as square footage and occupancy limits.
- Burke County Sheriff's Office provided staff support to the planning effort.
- Burke County Health Department identified vulnerable populations. They also provided replacement value estimates for their properties.
- Fire Departments of Burke County and the City of Waynesboro provided staff support and assisted with identifying occupancy limits for some of the critical structures and replacement value estimates.
- City officials from the Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro provided information relative to their jurisdictions and provided replacement value estimates for their critical facilities.
- Georgia Forestry Commission provided data on wildfire events and assisted with the formulation of mitigation measures.
- Burke County Chamber of Commerce assisted in identifying major businesses.
- Burke County Board of Commission County Administrator provided information about Burke County government buildings including their respective replacement and content values and square footages.
- Burke 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.
- CSRA Regional Commission's Geographical Information System (GIS) Department produced several of the maps. Maps are located in Appendix A and C.

Several resources were consulted to facilitate the development of the update. Data was collected from numerous sources, including the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI), Spatial Hazard Events and Losses Database for the United States (SHELDUSTM), 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. The table below provides a list of existing planning documents used during the update.

Record of Review		
Existing planning mechanisms	Reviewed (Yes/No)	Method of use in Hazard Mitigation Plan
Burke County Joint 2018-2028 Comprehensive Plan	Yes	Development trends, capability assessment, mitigation strategies
Local Emergency Operations Plan	Yes	Identifying hazards; Assessing vulnerabilities; Capability assessment

Record of Review		
Existing planning mechanisms	Reviewed (Yes/No)	Method of use in Hazard Mitigation Plan
Georgia Emergency Operations Plan	Yes	Identifying hazards; Assessing vulnerabilities;
Flood Damage Protection Ordinance	Yes	Mitigation strategies, capability assessment
Building and Zoning Codes and Ordinances	Yes	Development trends; Future growth, capability assessment, mitigation strategies
Mutual Aid Agreements	Yes	Assessing vulnerabilities, determine assets added to disaster relief and response.
State Hazard Mitigation Plan	Yes	Risk assessment, review of recommended strategies
Land Use Maps	Yes	Assessing vulnerabilities; Development trends; Future growth
Critical Facilities Maps	Yes	Locations
Community Wildfire Protection Plan	Yes	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 five meetings over a 22-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 evaluating the plan updating critical facilities and hazard information, as well as 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.

The table below 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 five meetings, two

were advertised in *The True Citizen*, 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: Columbia, Glascock, Hancock, Jefferson, Jenkins, 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.

Meeting Date	Purpose of Meeting
February 26, 2018	Advertisement ran in <i>The True Citizen</i> for public meeting on February 14, 2018 for the 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 last update.
May 11, 2018	This meeting was to ensure all data collected to date was correct for critical facilities and to reviewed mitigation strategies and action steps
February 11, 2019	This meeting was a continuation of the May 11, 2018 meeting. Ensured all data collected was correct for critical facilities. And review of discussions of strategies.
February 21, 2019	Meet with GEMA to review HASUZ report.
June 10, 2019	Committee meet to review draft before submission to GEMA. Final over view of plan to ensure all jurisdictional information was correct and review final mitigation strategies.
June 12, 2019	Waynesboro fire department meet to review the plan and HASUZ report
<i>To Be Added after FEMA Approval</i>	Advertisement ran in <i>The True Citizen</i> Advertising for public review and the final meeting <i>date will be added after FEMA approval</i>
<i>To Be Added after FEMA Approval</i>	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 the previous update. 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 Burke County and all jurisdictions.

SECTION IV. ORGANIZATION OF THE PLAN

The estimated time to complete the plan update was approximately 22 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 are 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 mitigation opportunities in each vulnerable area based on the input from the committee members, relevant government agencies, local businesses, and Burke County citizens.

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

The committee, early in the update process, established a set of goals and objectives to ensure the effectiveness of this plan. These goals and objectives established the paradigm for the planning process and proved very successful by the many accomplishments since the 2015 update. These goals and objectives are as follow:

- To actively involve and gain support from Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro and unincorporated Burke 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 Burke County and all jurisdictions.
- Monitor, evaluate, and update the progress of the plan as needed.
- To form partnerships among local, state, and federal agencies to make Burke 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 Burke County and all jurisdictions.

An HRV assessment was accomplished by compiling and reviewing historical data on the location of specific hazards, the value of existing structures/properties in hazard locations, and analyzing the risk to life, property and the environment that could potentially result from future hazard

events. The committee accomplished the HRV goals and objectives by completing the following steps:

Inventory of Critical Facilities: Critical facilities are crucial for providing essential services necessary for preserving the safety and quality of life of its residents. In addition, these facilities fulfill important public safety, emergency response, and/or disaster recovery functions. All critical facilities were added to the Georgia Mitigation Information System (GMIS). Critical facilities for Burke County, Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro were identified, updated and mapped (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 eight major hazards that have the potential to affect Burke County: flooding, dam failure, drought, wildfire, tornados, tropical storms, severe weather (thunderstorms, lightning, and hail) and winter storms. Appendix A provides an updated comprehensive table for each hazard event.

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

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

Estimating Losses: Using the best available data, tax digest data, parcel maps and GMIS reports and maps for critical facilities allowed the committee to estimate damages and financial losses that might occur in a geographic area. Describing vulnerability in terms of dollar losses provides the county with a common framework in which to measure the effects of hazards on critical facilities. All information in this section has been updated (*Appendix A and Appendix D*).

Mitigation Goals and Objectives: After ensuring that all interested persons had been given ample opportunity to contribute to strategy development, mitigation action steps were next given priority status by committee members. To evaluate priorities, committee members used as a guide a planning tool prepared by FEMA known as STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) criteria. Each mitigation strategy step was evaluated using STAPLEE criteria as the guiding principle to identify those steps best for Burke 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

Burke County, Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro 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 Burke County Multi-Hazard Pre-Disaster Mitigation Plan.

The municipalities were notified in October 2017 of the requirement concerning the update to the plan. Representatives from all seven jurisdictions 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 goals are to work in partnership with municipal partners toward a common mitigation strategy that significantly reduces vulnerability of natural disasters. Most natural threats overlap jurisdictions and are all susceptible to their affects. Burke County, Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro share the same passion and desire for protecting and reducing risk through the mitigation projects. Specific risks and areas were identified through working relationships and data collection from all areas of the county and are identified in this plan.

SECTION VII. ADOPTION, IMPLEMENTATION, MONITORING AND EVALUATION

Adoption Date

Jurisdiction	Adoption Date
Burke County	<i>To Be Added after FEMA Approval</i>
City of Girard	<i>To Be Added after FEMA Approval</i>
City of Keysville	<i>To Be Added after FEMA Approval</i>
City of Midville	<i>To Be Added after FEMA Approval</i>
City of Sardis	<i>To Be Added after FEMA Approval</i>
City of Vidette	<i>To Be Added after FEMA Approval</i>
City of Waynesboro	<i>To Be Added after FEMA Approval</i>

The plan was submitted to GEMA for review and then to FEMA for approval. Their respective governing bodies have formally adopted the 2019 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 public awareness concerning individual preparedness, building safer, disaster resistant communities.

- Develop strategies for long term community sustainability during natural 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 Burke 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 Burke 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 natural 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 Burke 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, Burke County will develop steps to ensure public participation throughout the plan maintenance process. Finally, this section describes how Burke County will incorporate the mitigation strategies identified in this plan into other relevant planning documents such as the Burke County Joint Comprehensive Plan, Short-Term Work program (STWP) and Local Emergency Operations Plan (LEOP).

SECTION VIII. COMMUNITY DATA

Political Boundaries – Burke County



Burke County



*GA Department of Community Affairs
Region 7*



Georgia

History: Burke County was created February 5, 1777 and is one of the eight original counties. Originally organized as the Parish of St. George, Burke County was named for English political writer, member of the British Parliament and supporter of the colonies' interests, Edmond Burke. Known as the "Bird Dog Capital of the World," Waynesboro was named for General Anthony "Mad Anthony" Wayne, a famous Revolutionary soldier.

Burke County is a rural county covering 835 square miles. Burke County is one of 13 counties that comprise the Central Savannah River Area (CSRA). There are 6 incorporated cities in Burke County: Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro which is the county seat.

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

Burke County contains six municipalities, all of which operate under a mayoral system of government with additional officials providing services to residents.

Burke County Georgia: Municipal Governments	GIRARD	KEYSVILLE	MIDVILLE	SARDIS	VIDETTE	WAYNESBORO
Mayor	X	X	X	X	X	X
# Council Members	5	4	4	5	3	6
City Clerk	X	X	X	X		X
City Coordinator/Administrator		X				X

Burke County Georgia: Municipal Governments	GIRARD	KEYSVILLE	MIDVILLE	SARDIS	VIDETTE	WAYNESBORO
City Attorney	X	X	X	X	X	X
Police Chief			X	X		X
Fire Chief						X
City Engineer						
Public Works Director						X
Gas Superintendent						X
Water Superintendent	X	X	X	X	X	X
Wastewater Superintendent			X	X		X
Sanitation Superintendent			X			X
Code Enforcement						X
Municipal Court Judge			X	X		X
Municipal Court Clerk		X	X	X		X

Source: Georgia Municipal Association

Demographics: Presently, Burke County has a population of 23,316 persons. Below is a table comparison of all jurisdictions.

Category	Burke County	Girard	Keysville	Midville	Sardis	Vidette	Waynesboro
Population	23,316	156	332	269	999	112	5,813
Number of Households	8,533	73	100	103	371	40	2,022
Average Household Size	2.70	2.14	2.69	2.61	2.69	2.8	2.77
Race - White	47.5%	67.9%	38.0%	48.0%	43.6%	67.9%	26.4%
Race - Black	49.5%	31.4%	56.6%	49.8%	54.9%	27.7%	70.7%
Race - Hispanic	2.6%	0.6%	3.6%	1.9%	0.7%	0.9%	2.0%
Race - Other	1.1%	0.6%	1.8%	0.4%	0.1%	0.0%	1.6%
Median HH Income	\$31,597	\$23,594	\$26,250	\$30,300	\$27,946	\$36,250	\$24,911

Source: US Census Bureau

Economy: In the year 2018, the average weekly wage for employment sectors was \$1,488, compared to the statewide average of \$993. The February 2019 unemployment rate was 5.2

percent. In 2018, the labor force in Burke County totaled 12,581. Of the total work force, 41.0 percent were employed in the service providing sector, followed by 47.0 percent in the goods producing sector and 11.8 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. The table below provides a list of jobs, number of establishments and jobs along with average weekly wages per job for 2018 in Burke County.

Annual Industry Distribution of Jobs and Average Wage in 2013 (NAICS)	Establishments	Jobs	Annual Average Wage Per Job
Total Covered Employment and Wages	390	12,581	\$1,488
Total Private Sector	359	11,095	\$1,583
Total Government	31	1,486	\$779
Agriculture, forestry, fishing, hunting	29	204	\$698
Mining, Quarrying, and Oil and Gas Extraction	0	0	\$0
Construction	30	5,253	\$1,971
Manufacturing	9	458	\$850
Wholesale trade	31	801	\$1,179
Retail trade	61	856	\$490
Transportation, warehousing	9	95	\$934
Utilities	3	*	*
Information	6	34	\$1,072
Finance and Insurance	19	125	\$789
Real Estate, rental, leasing	11	19	\$555
Professional, Scientific, Technical services	25	379	\$2,836
Mgmt. of companies, enterprises	2	*	*
Administrative and support and waste management and remediation services	12	77	\$877
Educational services	3	*	*
Health care, social assistance	36	518	\$540
Arts, entertainment, recreation	2	*	*
Accommodation and food services	31	55	\$248
Other services, except public administration	20	65	\$477
Unclassified-Industry not assigned	20	24	\$694

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

Climate: According to the National Weather Service, Burke 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. 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. The average date of the last freeze is in mid-to-late March.

Burke County averages 46 inches of rain per year. The number of days with any measurable precipitation is 88. On average, there are 218 sunny days per year in the county. The average July high is around 92 degrees and the average January low is around 34 degrees.

Physical Features: Burke County encompasses an area of roughly 835 square miles or 534,400 acres and is Georgia's second largest county. Burke 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. Three major drainage ways flow through the county to the east. The Savannah River drains the northern part of the county, Brier Creek drains the middle part, and the Ogeechee River drains the southern part.

Soils on uplands in the southern part of Burke County are predominantly well drained and are nearly level to gently sloping. Soils on flood plains or in depressions are poorly drained, nearly level and in places flooded or ponded in winter and spring. Most of the well-drained soils have a sandy surface layer or a sandy surface layer and thick, sandy subsurface layer and a mainly brownish loamy subsoil. The poorly drained soils have a loamy or sandy surface layer and a loamy or clayey subsoil or soils are sandy throughout.

Soils on uplands on the northwestern part of the county are well drained and are mainly nearly level to strongly sloping; soils on flood plains are poorly drained, nearly level, and frequently flooded in winter and spring. The well drained soils have a surface layer that is sandy or loamy and a reddish, loamy or clayey subsoil, or a sandy surface layer and thick, sandy subsurface layer and a reddish, loamy subsoil.

Soils on uplands north of Brier Creek in the eastern part of the county are predominantly well drained, and mainly range from very gently sloping to steep. Soils on flood plains are mainly poorly drained, nearly level, and frequently flooded in winter and spring. Most of the soils on uplands are used for farming and truck crops. The soils in upland depressions and on flood plains and stream terraces are mainly wooded. A map of the soil types, wetlands and flood plains are located in Appendix A.

Transportation

Vehicle Traffic *Vehicle Traffic:* U.S. 25 passes through Burke County from north to south. The Savannah River Parkway, a new four-lane connector between Augusta, Interstate 16 in Statesboro and Savannah follows U.S. 25 in its north-south route through the County. In terms of east-west highway transportation, the Savannah River serves as a barrier, as there is presently no bridge linking Burke County directly to South Carolina.

Mileage by Route and Road System Report 445 for 2014			
	Total Road Mileage	Lane Mileage	Vehicle Miles Traveled (VMT)
State Route	205.114	463	636,999
County Road	804.143	1,608	287,149
City Street	69.503	139	60,289
Total	1,078.760	2,210	984,436

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: Rail service is provided by Norfolk Southern (NS), which passes through Burke County with a stop in Waynesboro. In the state of Georgia, Class I railroads, CSX and NS, operate four major general freight corridors in and through Georgia. The third largest volume corridor is north-south along the eastern border of the state from Augusta through Savannah to Jacksonville, Florida. Most of the outbound traffic in Georgia originates in the middle and northwest areas of the state, with the most tonnage concentrated in the Central Savannah River Area.

Air Service: Burke County has a public airport with a lighted 4,035' runway is located south of the city limits of Waynesboro and is suitable for small, private aircraft. The majority of air traffic is classified as transient flights (67 percent), with the balance being local flights. Commercial air travel is available at Augusta Regional Airport at Bush Field, located seven miles south of downtown Augusta.

Utilities

Electricity: Residential electrical service is provided by three companies: Georgia Power, Planters EMC, and Oglethorpe Power Corp. As part of Georgia's modern integrated electrical transmission system, Burke County has excellent ability to supply industrial electricity demands. Coal accounts for 84 percent of fuel used by the state's power generating plants compared to 47 percent for the U.S. 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 Waynesboro. The service is available to residents of Waynesboro and some residential customers in the unincorporated area of the county. Natural gas is also furnished by the City of Louisville to the City of Vidette and a small number of customers in the unincorporated area.

Sewer: Public sewer service is provided in Waynesboro, Sardis and Midville. The unincorporated areas of the County are not served with public sanitary sewer service.

Municipality	Sewer and Wastewater Systems
Girard	Septic tanks only.
Keysville	Septic tanks only.
Midville	Wetlands Sewerage Plant using oxidation pond with 5 lift stations.
Sardis	Wetlands Sewerage Treatment System with 4 lift stations
Vidette	Septic tanks only.
Waynesboro	Wastewater Treatment Plant with 4 lift stations

Water: Public water supply is provided in each of the cities located within the County. The unincorporated areas of the County are not served with a public water supply. Waynesboro provides water service to a relatively small number of customers located outside their city limits. Sardis and Midville also provide water service to a small number of customers outside their city limits.

Municipality	Water Distribution System
Girard	Two wells, distribution lines, two elevated water storage tanks.
Keysville	Two wells, distribution lines, one water storage tank.
Midville	Two wells, 1 storage tank
Sardis	Water distribution lines, two water storage tank, 2 wells
Vidette	Water distribution lines, 2 wells
Waynesboro	Complete water distribution and treatment system: 2 wells and a surface water treatment plant, 4 elevated storage tanks and 2 surface level storage tanks

Solid Waste: Burke County provides solid waste collection in the unincorporated areas of the county as well as the cities of Girard, Sardis, Midville, Vidette and Keysville by placing trash containers in these areas. Waynesboro provides weekly curb side service for its residents. Sardis and Midville also provide curb side collection service. Sardis transports some of its solid waste to the Burke County Sanitary Landfill and in addition also places some of its solid waste in containers furnished by the County. Midville places its solid waste in containers furnished by the County which is transported to the landfill.

Communications: Burke County's communication services is provided by three companies provider is AT & T, Comcast Communication, and Pineland Telephone. Local print media consists of *The True Citizen* (which serves as the legal organ of the county) and *The Augusta Chronicle*. Burke County is served by 13 AM radio stations and 16 FM radio stations. There are seven television stations in metro Augusta that broadcast in Burke 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 Burke County EMA. The county has one Red Cross Approved Shelter: Burke County High School located at 1057 Burke Veterans Pkwy having a maximum capacity of 600.

Fire, EMS and Rescue: Fire protection is provided by the Burke County Emergency Management Agency (EMA) in a special fire district consisting of the unincorporated areas of the County and the cities of Girard, Sardis, Midville, Vidette and Keysville. Twelve stations provide medical emergency and fire protection services are located throughout the County. Funding is provided by a special fire district ad valorem tax. There are 108 full-time employees and each station has cross-trained employees that are either a firefighter/paramedic or a firefighter/emergency medical technician. Burke County currently has an Insurance Services Office (ISO) Public Protection Classification Class 5 rating.

The City of Waynesboro operates a full-time fire department supported by the city's general fund. Fire service is provided by full-time and reserve firefighters 24/7 utilizing three Class A pumpers each rated at 1,250 gallons per minute and carrying 1,000 gallons of water. There are over 550 fire hydrants located throughout the city. The Waynesboro Fire Department currently has an ISO Public Protection Classification Class 4 rating.

Law Enforcement: The Burke County Sheriff's Office provides the County with law enforcement protection. The Sheriff also provides coverage to Keysville, Girard and Vidette. They also provide service to Midville as needed. Sardis and Waynesboro maintain their own police departments. The Sheriff's Office operates the Burke County jail, which is also used by each city.

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

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

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 six hazards mentioned, the entire County is exposed to four: 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.

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

SECTION I. FLOODING

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

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

Flooding occurs when the volume of water exceeds the ability of a water body (stream, river, or lake) to contain it within its normal banks. Floodplains serve three major purposes: Natural water storage and conveyance, water quality maintenance, and groundwater recharge. These three purposes are greatly inhibited when floodplains are misused or abused through improper and unsuitable land development. For example, if floodplains are filled to construct a building, valuable water storage and recharge areas are lost. This causes unnecessary flooding in previously dry areas and can damage buildings and other structures.

Burke County, Keysville, Midville, and Waynesboro participate in the NFIP and 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 County Code Enforcement Officer and Building Permit Office for Burke County. Burke County also assist Keysville and Midville with enforcement. Waynesboro Planning and Zoning handles their own enforcement. Girard, Sardis, and Vidette are looking into the possibility of adopting flood plain ordinances. Presently these three cities do not have the staff to enforce the flood ordinances. The three cities would need to adopt and enter into an Intergovernmental Agreement with the County to enforce compliance since they have no code enforcement office. The following table provides information about each jurisdiction's participation level.

Community Name	Init FHBM Identified	Init. FIRM Identified	Curr. Eff. Map Date	Reg-Emer Date	Sanction Date
Burke County	03/10/78	09/15/89	12/17/10	09/15/89	
Girard	09/06/74	12/17/10	12/17/10		09/06/75
Keysville		12/17/10	12/17/10(M)	12/17/10	
Midville	07/11/75	07/03/86	12/17/10(M)	07/03/86	
Sardis		12/17/10	12/17/10		12/17/11
Vidette		12/17/10	12/17/10		12/17/11
Waynesboro	06/14/74	08/01/87	12/17/10	08/01/87	

Source: FEMA Community Status Book

- B. Hazard Profile:** Severe flooding within Burke County is a relatively infrequent event. The county has 85 streams/rivers, 53 reservoirs and nine lakes which makes the potential for flooding significant. The committee examined historical data from the NCEI, past newspaper articles and conducted interviews during its research of past flooding events.

In the last 90 years there have been twelve reported flooding events where six occurred countywide, three in the unincorporated areas and three in Waynesboro. There has been a total of approximately \$1 million in property and crop damages. The rainfall 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 jurisdictions. The most complete data applies to the county as a whole. The table below is a result of information gathered from interviews, newspaper articles, and the NCEI and SHELDUS databases.

Details	Begin Date	Type	PrD	CrD
Result of a hurricane that came ashore at Pensacola Florida	9/30/1929	Flood	0.00	0.00
result of torrential rain that occurred in east-central Georgia	10/11/1990	Flash Flood	500,000	.00
a result of torrential rain that occurred in east-central Georgia. Severe flooding caused by the intense rain occurred in several tributaries to the Ogeechee, Ochopee, and Savannah Rivers.	10/13/1990	Flooding	500,000	0.00
No details available in SHELDUS	10/4/1995	Flash Flood	.00	0.00
EOC reported flash flooding across roads in southern portions of the county. Hwy 56 was temporarily closed along with a few other roads.	7/26/2003	Flooding	0.00	0.00
Highway Dept. reported flooding on secondary roads off of Hwys 23, 56, and 80 northeast of Waynesboro. Flooding was also reported on secondary roads in the Keysville areas.	9/3/2006	Flooding	0.00	0.00
Fire Dept. reported Hwy 24 near Rosedale road closed due to flooding and high water. Half a mile of Hwy 24 was closed as well as secondary roads a few miles west to northwest to north of Sardis.	5/24/2009	Flooding	4,000	10,000.0
Sheriff reported heavy rain flooding streets and other low-lying areas. Water was up to 4 feet deep in low lying areas. Streams and ditches in the area also flooded over their banks.	7/31/2010	Flooding	4,000	0.00
Spotter reported Tennis Court Circle flooded and impassable.	5/18/2018	Flash Flooding	100	100
Burke Co dispatch reported that Hwy 56 was flooded and closed near Buckhead Creek.	5/18/2018	Flash Flooding	100	100
Burke Co Fire Stn 8 reported that Herndon Rd was flooded and impassable between Kelly Plantation Rd and Byne Sunshine Rd. Time estimated. Duration	5/18/2018	Flash Flooding	100	100
City of Waynesboro PD reported water covering the roadway about four to six inches deep on the US Hwy 25 Bypass and on Davis Rd.	5/18/2018	Flood	100	100

Source: NCEI and SHELDUS

There have been two major flood events recorded: one in 1929 and one in October 1990. The flood of 1929 had maximum discharge of 46,000 cubic feet per second for the Ogeechee River near

Louisville and 64,000 cubic feet per second for Brier Creek near Millhaven. According to the October 5, 1929 issue of *The True Citizen* the Flood of October 1929 was the greatest in the recollection of Burke County's oldest inhabitants. Local plantation owners believe this was the greatest flood since white men settled in this area (Source: *Department of the Interior: Floods in Georgia Frequency and Magnitude, Geological Survey Circular 100*).

The flood on October 10-12, 1990 was a result of torrential rain that occurred in east-central Georgia. Severe flooding caused by the intense rain occurred in several tributaries to the Ogeechee, Ohooppee, and Savannah Rivers. Maximum discharges of streams in east-central Georgia had recurrence intervals ranging from 2-years to more than 100 years. Record-high stages and discharges occurred at 14 sites in east-central Georgia where stage and discharge data were collected.

The most severe flooding occurred on Big Creek near Louisville, Brushy Creek near Wrens and Buckhead Creek near Waynesboro where the maximum discharges were much greater than the respective 100-year discharges. Known dam failures upstream of the gaged sites on Big Creek and Brushy Creek contributed to the severity of the flooding. Also, there were at least six other streams within about a 50-mile radius of Augusta that experienced maximum discharges equal to or greater than those having a 100-year recurrence interval. All sites where discharge equaled or exceeded the 100-year discharge within this 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 was the largest since 1929. (*Summary of Floods in the United States during 1990 and 1991 USGS*)

While severe flooding within the county is a relatively infrequent event, there is a potential for flooding. Flooding usually occurs from fall to mid-spring. Flash flooding is the most prominent flooding event that takes place as riverbanks overflow due to rainfall. Significant damage caused by flooding has been minimal and approximately \$1 million in property and crop damages reported. There are no NFIP mitigated properties and no properties have encountered repetitive flooding. The GMIS flood hazard maps for each jurisdiction, located in Appendix A, assigns the following flood zone ratings:

- Flood zone rating of zero for the unincorporated parts of the County, Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro where there are no identified flood hazards.
- Flood zone rating of three for Burke County, Girard, Keysville, Midville, Sardis, Vidette and Waynesboro where floodplains are known.

The magnitude of a major flood event could have approximately 75 percent of the county experiencing some damage from flooding. The GMIS flood hazard maps show the following conditions:

- the unincorporated areas of the County flood prone areas along waterways and the rest of the unincorporated areas are outside of known flood hazard areas;
- Waynesboro has flood prone areas running throughout the city;
- Midville has flood prone areas running along the entire southern portion of the city and one area running from North to South;

- Girard has a small flood prone area at the northwestern portion and one in the lower southwestern corner of the city;
- Keysville's flood prone areas run across the city from the southeastern to the northwestern side of the city;
- Vidette has a small flood prone area on the eastern side of the city; and
- Sardis has two small flood prone areas on in the northeast and on at the North West areas of the city.

Based on a 20-year hazard cycle the chance of an annual flooding event occurring is 40 percent for all of Burke County; 25 percent for unincorporated areas of Burke County; 10 percent for Girard, Keysville, Midville, Sardis and Vidette; and 25 percent for Waynesboro. (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:

- Girard has 2 structures/properties valued at approximately \$134,423 with a population of 0;
- Keysville has 10 structures/properties valued at approximately \$207,058 with an estimated population of 25;
- Midville has 139 structures/properties valued at approximately \$2.1 with an estimated population of 47;
- Sardis has 3 structures/properties valued at approximately \$110,643 with a population of zero;
- Vidette has 2 structures/properties valued at approximately \$64,743 with a population of zero;
- Waynesboro has 68 structures/properties valued at approximately \$4.2 million with a population of 186; and
- Unincorporated Burke County has 930 structures/properties valued at approximately \$70 million with an estimated population of 645.

All 1,151 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. The extent of each flood varies according to the amount of rainfall in a given area. If a complete loss of the 1,151 structures/properties located within flood zones would result in approximately \$79.9 million in damages assuming 100 percent loss, a 75 percent loss would represent approximately \$59.9 million, a 50 percent loss would represent approximately \$39.9 million, and a 25 percent loss would represent approximately \$19.9 million.

The GMIS has two critical facilities with a hazard score of three: the Waynesboro Waste Water Treatment Plant and the Midville Lift Station #1. The 120 remaining critical facilities have a hazard score of zero with a value slightly less than \$210 million. The table below shows the breakdown of critical facilities by jurisdiction, flood hazard score, replacement value, content value, and daily occupancy.

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value \$	Content Value \$	Occupancy	
					Day	Night
Burke County	0	55	119,066,094	28,716,067	6,606	159
Girard	0	6	1,710,000	25,000	2	0
Keysville	0	5	6,216,000	234,000	89	64
Midville	3	1	85,000	00	0	0
Midville	0	10	5,766,055	51,200	8	2
Sardis	0	16	11,143,037	459,000	87	14
Vidette	0	3	257,065	00	0	0
Waynesboro	3	1	148,000	00	0	0
Waynesboro	0	25	65,763,691	2,899,400	86	6
TOTAL		122	210,154,942	32,384,667	6,878	245

The GMIS has no repetitive flooding NFIP property and no NFIP mitigated properties or properties that have encountered repetitive flooding 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 Burke 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. The results of this scenario are as follows:

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
Keysville					
Residential	124	1	\$8,599,015	\$37,518	0.44%
Midville					
Residential	268	4	\$28,612,222	\$32,627	0.11%
Waynesboro					
Residential	1,684	3	\$239,813,262	\$208,856	0.09%
Unincorporated					
Residential	7,845	34	\$742,935,809	\$800,856	0.11%
County Total					
	9,921	42	\$1,019,960,308	\$1,079,857	

- **Essential Facility Losses:** The analysis identified no essential facilities being subject to damage.
- **Flood Shelter Requirements:** The scenario estimates 339 households are subject to displacement. Displaced households represent 1,017 individuals, of which 419 may require short-term publicly provided shelter.
- **Flood Debris:** Hazus-MH estimates that an approximate total of 3,295 tons of debris might be generated by the flood. The model breaks debris into three general categories:
 - Finishes (dry wall, insulation, etc.) – 1,353 tons generated;
 - Structural (wood, brick, etc.) – 682 tons generated; and
 - Foundations (concrete slab, concrete block, rebar, etc.) – 1,259 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 is on it or not. The communities are rural and agriculture is an important industry. All parcels are included in our analysis, not just structures.

- D. Land Use and Development Trends:** The Burke County Comprehensive Plan 2018-2028 present future development scenarios for Burke County and its municipalities is 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 Burke County, Waynesboro, Sardis, Keysville, Girard, Midville, and Vidette areas that:
- Presently have unique or special characteristics that need to be preserved
 - Have potential to evolve into unique areas
 - Require special attention because of unique development issues

The Preserve 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
- Provide opportunities for low-impact recreation (e.g. canoeing, fishing, hunting, hiking, etc.) and environmental education

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 will have a decrease in forest and agriculture land that will be converted to residential. Most future development will take place along the northwestern regions of Burke County from south of Waynesboro to the Richmond County Line and over to the Jefferson County Line. 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 in flood prone areas.

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 Maps and Tables for each jurisdiction can be found in Appendix B*)

- E. Multi-Jurisdictional Concerns:** Burke County, Keysville, Midville, and Waynesboro 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 County Code Enforcement Officer and Building Permit Office for Burke County. Burke County also assist Keysville and Midville with enforcement. Waynesboro Planning and Zoning handles their own enforcement. Girard, Sardis, and Vidette do not participate because they do not have the staff to enforce the flood plain ordinances. They are working with Burke County to ensure their participation. Not participating in the NFIP will affect the ability to control development in flood prone areas.

During a large-scale flood event, many portions of Burke 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. All of Burke County and its municipalities could potentially be impacted. Since flooding has the potential to affect all of Burke County, any mitigation steps taken related to flooding should be undertaken on a countywide basis and include all incorporated jurisdictions.

- F. Hazard Summary:** While severe flooding within Burke County is a relatively infrequent event. The county has 85 streams/rivers, 53 reservoirs and nine lakes which makes the potential for flooding significant. There are 12 recorded flooding events in the last 90 years. These events resulted in school closings, roads washing out and minimal property damage. The hazard frequency table calculates a 45 percent chance of an annual flooding event for Burke County. Hazard frequency tables are in Appendix D for all jurisdictions. Severe flooding, although a relatively rare occurrence, has the potential to inflict significant damage. Mitigation of flood damage requires the community to know where flood prone areas are, what roads and bridges may be affected, and which facilities fall below anticipated flood levels. The committee recognized the potential for losses caused by flooding and identified it as a hazard requiring mitigation measures.

Based on tax data, parcel and flood maps all or a portion of 1,151 known structures/properties valued at approximately \$79.9 million and a population of 903 located in known floodplains. The committee identified specific mitigation goals, objectives and action items related to flood hazards, which can be found in Chapter III, Sections II and 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.

B. Hazard Profile: Based on the current data from the National Inventory of Dams there are 62 dams located in Burke County. Of the 62 dams, 53 are low hazard and nine are unknown. The average dam age is 50 years and 11% of the dams are regulated by state and none are regulated by federal agencies. While there has never been a reported dam failure event to date, the committee felt that it was important to address the issue. 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 no dam failure has occurred within the last 68 years. Based on a 20-year hazard cycle the chance of an annual dam failure occurring is less than one percent for all of Burke 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 Burke County residents and the number of residents living downstream from these potentially hazardous dams is unknown at this time. Based on best available data, the cities of Girard, Keysville, Midville, Sardis, and Vidette appear not to be at risk due to dam failure. The data is not available at this time for the committee to determine what assets are exposed to risk due to dam failure in the unincorporated areas of Burke County and Waynesboro. The GMIS report has critical facilities replacement at more than \$328 million with a population of 7,123. The County has population of 23,316 and 44,604 structures/properties valued at more than \$10 billion at risk of potential loss. (*See Appendix A and Appendix D*).

D. Land Use and Development Trends: 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 will have a decrease in forest and agriculture land that will be converted to residential. Most future development will take place along the northwestern regions of Burke County from south of Waynesboro to the Richmond County Line and over to the Jefferson County Line. 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 and projections are in Appendix B. A dam break analysis study is recommended in Chapter III, Sections 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 Burke 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. 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 44,604 structures/properties in the county totaling slightly more than \$10 billion with a population of 23,316. The committee identified specific mitigation goals, objectives and action items related to dam failure, which can be found in Chapter III, Section III.

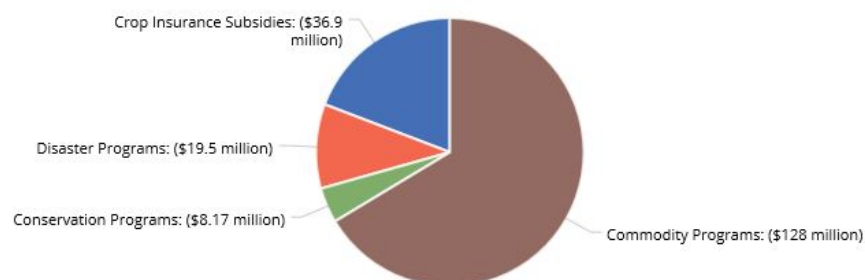
SECTION III. DROUGHT

- A. Hazard Identification:** The committee reviewed historical data from the Palmer Drought Index, NCEI, DNR, and USDA in researching drought conditions in Burke 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 will be addressed in a separate HRV.
- B. Hazard Profile:** Drought is not spatially defined and has the potential to affect the entire planning area equally. Burke County consist of 534,400 acres with 191,790 acres (35.9 percent) dedicated to agricultural and 332,257 acres (62.2 percent) dedicated to forestry. According to the USDA 2017 Census of Agriculture 38,936 head of livestock. Agricultural losses due to drought have been the primary losses. No critical facilities have sustained any damage or functional downtime due to dry weather conditions. The last drought event began in April 2018 and ended in May 2018.

County-wide, in the last 69 years 27 drought events have occurred, two since the last plan update, with estimated crop losses at \$20 million. According to the EWG Farm Subsidies Database, from 1995-2019, Burke County received \$192 million in farm subsidy payments of which \$19.5 million was for disaster assistance. The pie chart below depicts amounts and type of assistance.

Burke County, Georgia Farm Subsidy Information

Farmers received \$192 million in subsidies 1995-2019



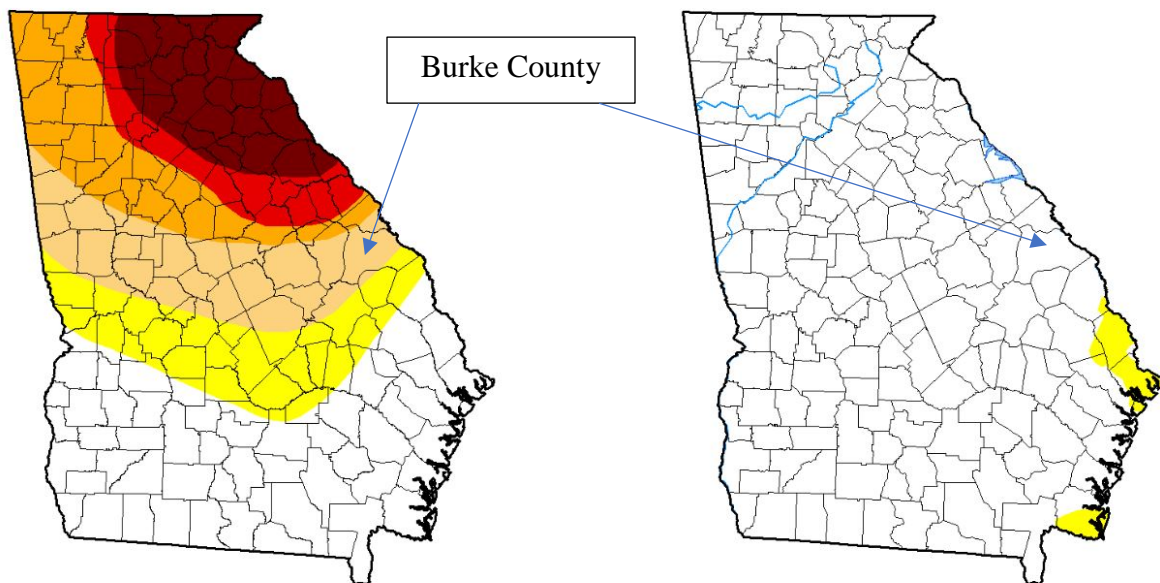
Source: <https://farm.ewg.org>

Historical data is only for the county as a whole. A severe, prolonged drought would mainly affect the 98 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 135% chance of an annual drought event. The chance for an annual drought event is the same for the county as well as all jurisdictions (*Appendix D for Worksheet 3a and Hazard Frequency Tables*)

NCEI data for surrounding counties and a review of The Palmer Index (from <https://droughtmonitor.unl.edu/Data/DataDownload/ComprehensiveStatistics.aspx>) reveals there have been 27 drought events with two occurring since the last plan update. One of the longest running droughts in recent history began in April 2011 and ended in January 2013. The County was in extreme drought conditions from May 2011 to July 2012 and exceptional drought conditions from August 2012 to January 2013. The last drought ran from April 2018 to May 2018. The drought of 2018 the county was in a moderate drought on the Palmer Index. The average based on historical data is a -3.00 on the Palmer Index. The maps below show drought conditions for December 2008 and 2018.

Drought Classification

None D0 (Abnormally Dry) D1 (Moderate Drought) D2 (Severe Drought) D3 (Extreme Drought) D4 (Exceptional Drought)



December 2, 2008



December 4, 2018

Based on the weekly data from the US Drought Monitor (<https://droughtmonitor.unl.edu/Data/DataTables.aspx>) from April 2002 to July 2019 the county has experienced the following drought conditions:

- 207 weeks where all or a portion of the county has experienced of D0 - Abnormally Dry;
- 113 weeks where all or a portion of the county has experienced of D1 - Moderate Drought;
- 67 weeks where all or a portion of the county has experienced levels of D2 - Severe Drought;

- 68 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 98 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 135 percent chance of an annual drought event for the county and all jurisdictions (*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:

- Girard has 48 structures/properties valued at approximately \$3.2 million with an estimated population of 15.
- Keysville has 14 structures/properties valued at approximately \$480,427 with an estimated population of 35.
- Midville has 31 structures/properties valued at \$902,880 with an estimated population of 60.
- Sardis has 12 structures/properties valued at approximately \$442,572 with an estimated population of 13;
- Vidette has 20 structures/properties valued at approximately \$647,430 with a population of 0;
- Waynesboro has 19 structures/properties valued at \$1.9 million with a population of 8;
- Unincorporated Burke County has 7,151 structures/properties valued at approximately \$700 million with an estimated population of 227.

There is a total of 7,295 agricultural/forestry properties in all of Burke County valued at more than \$708 million with a population of 272 that are at the greatest risk due to a drought event (*Appendix A and Appendix D*).

D. Land Use and Development Trends: Burke 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 all six water departments.

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.

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 will have a decrease in forest and agriculture land that will be converted to residential. Most future development will take place along the northwestern regions of Burke County from south of Waynesboro to the Richmond County Line and over to the Jefferson County Line. 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. Vulnerability in terms of future buildings, infrastructure and critical facilities is not known at this time. Land use tables and projections are in Appendix B.

E. Multi-Jurisdictional Concerns: Agricultural losses associated with drought are more likely to occur in the rural, less concentrated areas of the county. Although all incorporated jurisdictions are less likely to experience drought related losses, they should not be excluded from mitigation considerations. Drought creates a deficiency in water supply that affects water availability and water quality. Drought may increase the likelihood of wildfires and flooding. Water shortages can impede firefighting efforts at all levels.

Droughts can and have severely affected municipal and industrial water supplies, agriculture, stream water quality, recreation at major reservoirs hydropower generation, navigation, and forest resources. All six municipalities have water systems and may be impacted differently based on their water supply. Another threat is to private wells for some County residents. Therefore, an additional goal is to conserve water to protect these private water supplies during periods of drought.

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 not only the agricultural interests in Burke County, but to the entire State of Georgia. The potential negative effects of sustained drought are numerous. ***Historical data is available only for the county as a whole.*** Based on a 20-year cycle hazard history along with available data there is a 135% chance of an annual drought event in Burke 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 Burke County as a whole, there are a total of 7,295 agricultural/forestry properties valued at approximately \$708 million and include 38,936 head of livestock and an estimated population of 272 which have the greatest potential to be damaged by drought. There is a population of 23,316 and approximately 44,604 structures/properties in the county with a value just slightly more than \$10 billion 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:** Burke County is comprised of 534,400 acres with 191,790 acres (35.9 percent) dedicated to agricultural and 332,257 acres (62.2 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 Burke County.

The committee reviewed historical data from the Georgia Forestry Commission, which is not found in the NCEI database, to research wildfire events. The GFC provides wildfire occurrences for the county as a whole and not for individual jurisdictions. According to Georgia Forestry data, from 1957 to 2018, there have been 6,347 fire events burning a total of 64,147 acres for an average extent of 10.12 acres. Based on best available data these 6,347 wildfire events occurred in the unincorporated areas of the county. Based on a 20-year hazard cycle there is a 6,595 percent chance of an annual wildfire. The drier the condition the more susceptible the county is to wildfire (*See Appendix A*).

GMIS assigned the following wildfire hazard scores for each jurisdiction:

- Hazard score of four (high wildfire risk)
 - Unincorporated areas of the county – approximately 10 percent
 - Girard- approximately five percent of the city

- Keysville – approximately 10 percent of the city
- Midville - approximately 10 percent of the city
- Sardis - approximately 15 percent of the city
- Vidette - approximately 10 percent of the city
- Waynesboro - approximately 12 percent of the city
- Hazard score of three (moderate wildfire risk)
 - Unincorporated areas of the county – approximately 10 percent
 - Girard- approximately 25 percent of the city
 - Keysville – approximately 55 percent of the city
 - Midville - approximately 25 percent of the city
 - Sardis - approximately 65 percent of the city
 - Vidette - approximately 20 percent of the city
 - Waynesboro - approximately 55 percent of the city
- Hazard score of two (low wildfire risks)
 - Unincorporated areas of the county – approximately 15 percent
 - Girard- approximately 20 percent of the city
 - Keysville – approximately 30 percent of the city
 - Midville - approximately 25 percent of the city
 - Sardis - approximately seven percent of the city
 - Vidette - approximately 15 percent of the city
 - Waynesboro - approximately eight percent of the city
- Hazard score of one (very low wildfire risk)
 - Unincorporated areas of the county – approximately 15 percent
 - Girard- approximately 10 percent of the city
 - Keysville- approximately five percent of the city
 - Midville - approximately 15 percent of the city
 - Sardis - approximately seven percent of the city
 - Vidette - approximately 15 percent of the city
 - Waynesboro - approximately five percent of the city
- Hazard score of zero (no houses, agriculture, water, or city)
 - Unincorporated areas of the county – approximately 50 percent
 - Girard- approximately 40 percent of the city
 - Keysville- approximately 97 percent of the city
 - Midville - approximately 25 percent of the city
 - Sardis - approximately six percent of the city
 - Vidette - approximately 30 percent of the city
 - Waynesboro - approximately 20 percent of the city

C. Assets Exposed to Hazard and Estimate of Potential Losses: While wildfires are more likely to occur in the county outside of the incorporated areas. The committee concluded that wildfires present a threat to all existing buildings, infrastructure and critical facilities since wildfires can spread throughout the county and into the urban areas. Damages as a result of a wildfire event are more likely to occur in areas of the county where forestry and woodland are prevalent. 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 Burke County, as well as the value of these structures/properties and

the population. The following assets by jurisdiction could potentially be exposed to wildfire hazard:

Jurisdiction	Number of Structure/Properties	Value	Population
Burke County (Unincorporated)	33,949	\$9,523,677,060	15,682
Girard	325	\$9,603,172	156
Keysville	460	\$7,497,912	332
Midville	1,164	\$24,019,487	269
Sardis	1,537	\$30,595,862	999
Vidette	232	\$4,858,977	112
Waynesboro	6,937	\$434,272,435	5,766
TOTAL FOR COUNTY	44,604	\$10,034,525,905	23,316

Source: Burke County Tax Assessor

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

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value \$	Content Value \$	Occupancy	
					Day	Night
Burke County	4	2	\$700,000	\$800,000	4	4
Burke County	3	13	\$35,657,134	\$11,602,586	1,813	45
Burke County	2	2	\$4,755,405	\$1,600,000	2	2
Burke County	1	7	\$8,734,921	\$1,659,095	425	8
Burke County	0	31	\$69,218,634	\$13054386	4362	100
Girard	3	6	\$1,710,000	\$25,000	2	0
Keysville	4	3	\$966,000	\$25,000	82	64
Keysville	3	1	\$250,000	\$25,000	0	0
Keysville	2	1	\$5,000,000	\$184,000	7	0
Midville	4	1	\$85,000	\$0	0	0
Midville	3	6	\$2,031,055	\$51,200	8	2
Midville	2	3	\$3,650,000	\$0	0	0
Midville	1	1	\$85,000	\$0	0	0
Sardis	4	1	\$4,000,000	\$0	1	1
Sardis	3	14	\$6,968,037	\$459,000	85	12
Sardis	1	1	\$175,000	\$0	1	1
Vidette	4	1	\$187,255	\$0	0	0
Vidette	3	2	\$69,810	\$0	0	0
Waynesboro	4	1	\$102,900	\$0	0	0
Waynesboro	3	12	\$48,108,875	\$956,200	30	0
Waynesboro	2	1	\$2,397,000	\$37,000	0	0
Waynesboro	1	1	\$20,000	\$80,000	0	0
Waynesboro	0	11	\$15,282,916	\$1,826,200	56	6

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value \$	Content Value \$	Occupancy	
					Day	Night
TOTAL		122	\$210,154,942.00	\$32,384,667.00	6,878	245

The GMIS has nine critical facilities with a hazard score of four (high), 54 with a hazards score of three (moderate), seven with a hazard score of two (low) and 10 with a hazard score of one (very low probability). The remaining 42 critical facilities have a hazard score of zero. The 80 critical facilities with a wildfire hazard score greater than zero have an estimated potential loss of more than \$125 million. The loss for all critical facilities is \$210,154,942. According to FEMA Worksheet #3a there are 44,604 structures/properties with a population of 23,316 with a value of slightly more than \$10 billion worth of assets countywide. If a wildfire started, it is not likely that all of these structures/properties would be affected (*See Appendix A 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. Burke 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 Burke 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 Burke 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:** Burke County is comprised of 534,400 acres with 191,790 acres (35.9 percent) dedicated to agricultural and 332,257 acres (62.2 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 6,347 fire events burning a total of 64,147 acres for an average extent of 10.12 acres. Based on best available data these 6,347 wildfire events occurred in the unincorporated areas of the county. Based on a 20-year hazard cycle there is a 6,595 percent chance of an annual wildfire.

The GMIS wildfire report on critical facilities has nine with a wildfire hazard score of four (high probability), 54 with a hazard score of three (moderate probability), seven with a hazard score of two (low probability) and 10 with a hazard score of one (very low probability). The remaining 42 critical facilities have a hazard score of zero. The 80 critical facilities with a wildfire hazard score greater than zero have an estimated potential loss of more than \$125 million. The loss for all critical facilities is \$328,905,013. According to FEMA Worksheet #3a there are 44,604 structures/properties with a population of 23,316 with a value of slightly more than \$10 billion worth of assets countywide. Mitigation Goals and Objectives concerning wildfires are in Chapter III, Section III.

SECTION V. TORNADOS

A. Hazard Identification: 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. Tornadoes are among the most unpredictable and destructive of weather phenomena and can strike at any time of the year if the essential conditions are present. The damage from a tornado is a result of the high wind velocity and wind-blown debris. The positions of the subtropical and polar jet streams often are conducive to the formation of storms in the Gulf region. The table below shows the original Fujita Scale and the Enhanced Fujita Scale (in use since 2007) to rate the intensity of a tornado by examining the damage caused by the tornado after it has passed over a man-made structure.

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

Source: NOAA

B. Hazard Profile: Since the exact time and location of a tornado is not always predictable, all of Burke County is vulnerable. Based on 144 years of historical data, there have been 23 reported tornadoes in the planning area with four occurring since the last update. The highest magnitude reported was an EF3 in 1990. Reported property damages for all 23 events totaled more than \$4 million in property and crop damages with 28 injuries reported. Tornadoes tend to strike in somewhat random fashion, making the task of calculating a recurrence interval extremely difficult. Using a 20-year hazard cycle, frequency tables calculates an annual chance for a tornado event at:

- 85 percent for Burke County as a whole;
- 40 percent for Unincorporated Burke County;
- 5 percent for Girard,
- 10 percent for Sardis
- 15 percent for Keysville, Midville and Waynesboro.
- 20 percent for Vidette

The following table was produced from interviews, *The True Citizen*, the NCEI and SHELDUS™ and shows the event, severity and estimate cost of damages reported. (See Appendix A and Appendix D).

Date	Location	Mag	Inj	PD	CrD
3/20/1875	Burke	UNKNOWN		\$0	\$0
9/28/1963	Burke	F2	5	\$16,666	\$160
4/23/1971	Burke	F3	0	\$500	\$0
1/13/1972	Burke	F3	19	\$250,000	\$0
4/23/1983	Burke	F0	0	\$250,000	\$0
4/14/1984	Burke	F1	0	\$25,000	\$0
9/15/2002	Waynesboro	F0	0	\$4,500	\$0
12/28/2005	Midville	F1	0	\$15,000	\$0
12/28/2005	Sardis	F0	0	\$0	\$0
1/2/2006	Girard	F1	0	\$0	\$0
5/27/2006	Waynesboro	F0	0	\$0	\$0
3/15/2008	Keysville	EF2	0	\$0	\$0
3/15/2008	Sell Bluff	EF1	0	\$100,000	\$0
5/11/2008	Vidette	EF0	0	\$5,000	\$0
5/20/2008	Vidette	EF0	0	\$56,000	\$0
4/10/2009	Torbit Station	EF3	4	\$5,000	\$0
4/10/2009	Keysville	EF0	0	\$3,000,000	\$0
11/16/2011	Shell Bluff	EF1	0	\$200,000	\$0
3/18/2013	Rosier	EF1	0	\$120,000	\$0
4/19/2015	Greens Cut	EF2	0	\$0	\$0
1/21/2017	Midville	EF0	0	\$0	\$0
1/21/2017	Rosier	EF0	0	\$0	\$0
1/21/2017	Waynesboro	EF1	0	\$0	\$0

Source: NCEI and SHELATUS

- C. Assets Exposed to Hazard and Estimate of Potential Losses:** All structures and facilities within Burke 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. The table below provides data from FEMA Worksheet #3a that estimates the potential loss for each jurisdiction.

Jurisdiction	Number of Structure/Properties	Value	Population
Burke County (Unincorporated)	33,949	\$9,523,677,060	15,682
Girard	325	\$9,603,172	156
Keysville	460	\$7,497,912	332
Midville	1,164	\$24,019,487	269
Sardis	1,537	\$30,596,862	999
Vidette	232	\$4,858,977	112
Waynesboro	6,937	\$434,272,435	5,766
TOTAL FOR COUNTY	44,604	\$10,034,525,905	23,316

Source: Burke County Tax Assessor

The table below shows the number of critical facilities by jurisdictions, replacement value, content value, and daily occupancy.

Jurisdiction	# of Critical Facilities	Replacement Value \$	Content Value \$	Occupancy	
				Day	Night
Burke County (Unincorporated)	55	\$119,066,094	\$28,716,067	6,606	159
Girard	6	\$1,710,000	\$25,000	2	0
Keysville	5	\$6,216,000	\$234,000	89	64
Midville	11	\$5,851,055	\$51,200	8	2
Sardis	16	\$11,143,037	\$459,000	87	14
Vidette	3	\$257,065	\$0	0	0
Waynesboro	26	\$65,911,691	\$2,899,400	86	6
TOTAL FOR COUNTY	122	\$210,154,942	\$32,384,667	6,878	245

GMIS critical facility reports for wind can be found in Appendix A behind Severe Weather documentation. FEMA Worksheet #3a is located in Appendix D.

- 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. Burke 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. Information on current land use and future land use projections can be found in Appendix B.
- E. Multi-Jurisdictional Concerns** – All of Burke 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. Tornados 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 be evacuated, 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 144 years of historical data, there have been 23 reported tornados in the planning area with four occurring since the last update. The highest magnitude reported was an EF3 in 1990. Reported property damages for all 23 events totaled more than \$4 million in property and crop damages with 28 injuries reported. Tornados tend to strike in somewhat random fashion, making the task of calculating a recurrence interval extremely difficult. There is an 85 percent annual chance of a tornado event at for Burke 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 122 critical facilities have a wind hazard score of two with a replacement cost of more than \$210 million. To summarize, there are approximately 44,604 structures/properties in the county totaling slightly more than \$10 billion with a population of 23,316. 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, SHELDUSTM, newspapers and citizen interviews in researching the past effects of Tropical Storms in Burke 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. Burke County is not likely to experience a hurricane or storm surges.

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 curtainwall 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 Burke County is vulnerable to the threats of severe weather. Based on 69 years of historical data there have been 17 tropical storms reported in Burke County by the NCEI and SHELDUSTM with property and crop damages of approximately \$152,988. Only one has occurred since the last plan update. Damages as a result of the storms were due to power outages, downed trees and flash flooding with no injuries reported. The tropical storms affected the entire planning area. Data for each jurisdiction is not

available. Based on a 20-year hazard frequency cycle, there is a 60% chance of an annual tropical storm event for all jurisdictions (*See Appendix D*).

Details	Date	PrD	CrD
as a result of Hurricane Dora	9/9/1964	\$147,000	1,470
as a result of Hurricane Alma	6/8/1966	1,470	1,470
as a result of Hurricane Cleo	8/28/1964	1,136	113
as a result of Tropical Storm Abby	6/6/1968	14	0
as a result of Hurricane Angus	6/19/1972	0	315
as a result of Result of Hurricane Floyd	9/14/1999	0	0
as a result of Tropical Storm Hanna	9/14/2002	0	0
as a result of Tropical Depression Bill	7/1/2003	0	0
as a result of Hurricane Frances	9/6/2004	0	0
as a result of Hurricane Ivan	9/16/2004	0	0
as a result of Hurricane Jeanne	9/26/2004	0	0
as a result of Tropical Storm Arlene	6/12/2005	0	0
as a result of Hurricane Dennis	7/10/2005	0	0
as a result of Hurricane Katrina	8/29/2005	0	0
as a result of Tropical storm Tammy	10/5/2005	0	0
Tropical Depression as a result of Debby	7/3/2012	0	0
Tropical Storm Michael downed approximately 120 to 130 trees across the county. Over 2200 power outages	10/10/2018	0	0

- 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 table below provides data from FEMA Worksheet #3a that estimates the potential loss for each jurisdiction.

Jurisdiction	Number of Structure/Properties	Value	Population
Burke County (Unincorporated)	33,949	\$9,523,677,060	15,682
Girard	325	\$9,603,172	156
Keysville	460	\$7,497,912	332
Midville	1,164	\$24,019,487	269
Sardis	1,537	\$30,596,862	999
Vidette	232	\$4,858,977	112
Waynesboro	6,937	\$434,272,435	5,766
TOTAL FOR COUNTY	44,604	\$10,034,525,905	23,316

Source: Burke County Tax Assessor

All 122 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. The table below shows the number of critical facilities by jurisdictions, hazard score, replacement value, content value, and daily occupancy.

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value \$	Content Value \$	Occupancy	
					Day	Night
Burke County (Unincorporated)	2	55	\$119,066,094	\$28,716,067	6,606	159
Girard	2	6	\$1,710,000	\$25,000	2	0
Keysville	2	5	\$6,216,000	\$234,000	89	64
Midville	2	11	\$5,851,055	\$51,200	8	2
Sardis	2	16	\$11,143,037	\$459,000	87	14
Vidette	2	3	\$257,065	\$0	0	0
Waynesboro	2	26	\$65,911,691	\$2,899,400	86	6
TOTAL FOR COUNTY		122	\$210,154,942	\$32,384,667	6,878	245

GMIS critical facility reports for wind can be found in Appendix A behind Severe Weather documentation. FEMA Worksheet #3a is located in Appendix D.

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. Burke 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 –

During a natural hazard it is imperative that all emergency personnel 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 their county.

Another concern for all jurisdictions is the lack of animal friendly shelters.

Tropical storm events are usually area-wide, and no difference in severity is expected. However, the impact may be more severe in places with higher population density due to more people being in danger, more people needing to be evacuated, more debris from damaged buildings, and other impacts associated with higher population density. 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. The entire county has the potential to be affected by tropical storms. As a result, any mitigation steps taken related to tropical storms 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.

In the last 69 years there have been 17 tropical storms with property and crop damages of approximately \$152,988. Based on a 20-year hazard frequency cycle, there is a 60% chance of an annual tropical storm event for all jurisdictions (See Appendix D).

The GMIS has the entire county with a wind hazard score of two, where wind speed is between 90 to 99 mph. All 122 critical facilities have a wind hazard score of two with a replacement cost of more than \$210 million. To summarize, there are approximately 44,604 structures/properties in the county totaling slightly more than \$10 billion with a population of 23,316. A breakdown of information for individual jurisdictions can be found in Appendix A and Appendix D. Specific mitigation actions for severe weather events are identified in Chapter III, Section III.

SECTION VII. SEVERE WEATHER THUNDERSTORM WINDS, LIGHTNING, AND 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 Burke 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 as a result 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 third 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 Burke 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 202 events recorded in the last 69 years with over 1.2 million in property and crop damages reported with 4 injuries. Wind speeds of 50 to 75 knots have been reported with these events. Since the last update 41 events have been recorded. The table below breaks down the thunderstorm events by jurisdiction. A complete table of thunderstorm wind events can be found in Appendix A.

Location	# of Events	County-Wide Events*	# per jurisdiction
Burke County (Unincorporated)	43	66	109
Girard	11	66	77
Keysville	14	66	80
Midville	11	66	77
Sardis	12	66	78
Vidette	3	66	69
Waynesboro	42	66	108
TOTAL FOR COUNTY	136	66	202

*Source: NCEI and SHEL DUS * It is assumed that all 60 county-wide events reported occurred in each jurisdiction*

Using a 20-year hazard cycle, frequency tables calculates an annual chance for a thunderstorm event producing high winds at:

- 340 percent for the unincorporated areas of the county
- 180 percent for Girard Midville;
- 185 percent for Keysville;
- 175 percent for Sardis;

- 140 percent for Vidette; and
- 300 percent for Waynesboro

Burke County as a whole has an overall probability for a significant thunderstorm event of 745%. Hazard frequency tables for individual jurisdictions can be found 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 nine reported lightning events to the NCEI and SHELDS over 69 years with slightly more than \$94,000 in property and crop damages. There have been 141 lightning strikes recorded in the same time frame that resulted in wildfires. When these datasets are combined there has been 150 lightning strikes recorded with nine occurring since the last plan update. No injuries have been recorded as a result of lightning. Burke 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).

The exact location of the nine NCEI reported events within the county is incomplete as data is not available. Based on a 20-year hazard cycle there is a 350 percent chance a lightning strike will occur in Burke County.

The third weather event is hail. In the last 69 years there have been 84 hail events reported to the NCEI and SHELDS™ databases with slightly more than \$659,000 in property and crop damages. There have been 12 hail events since the last plan update. Hail ranges from .25 to 1.75 inches in size. Using a 20-year hazard cycle, frequency tables calculates an annual chance for a hail event at:

- 85 percent for the unincorporated areas of the county;
- 20 percent for Girard and Keysville;
- 15 percent for Midville;
- 25 percent for Sardis;
- > 0 percent for Vidette; and
- 105 percent for Waynesboro.

Overall, there is a 265 percent chance that an annual hail event in Burke 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. The table below provides data from FEMA Worksheet #3a that estimates the potential loss for each jurisdiction.

Jurisdiction	Number of Structure/Properties	Value	Population
Burke County (Unincorporated)	33,949	\$9,523,677,060	15,682
Girard	325	\$9,603,172	156

Keysville	460	\$7,497,912	332
Midville	1,164	\$24,019,487	269
Sardis	1,537	\$30,596,862	999
Vidette	232	\$4,858,977	112
Waynesboro	6,937	\$434,272,435	5,766
TOTAL FOR COUNTY	44,604	\$10,034,525,905	23,316

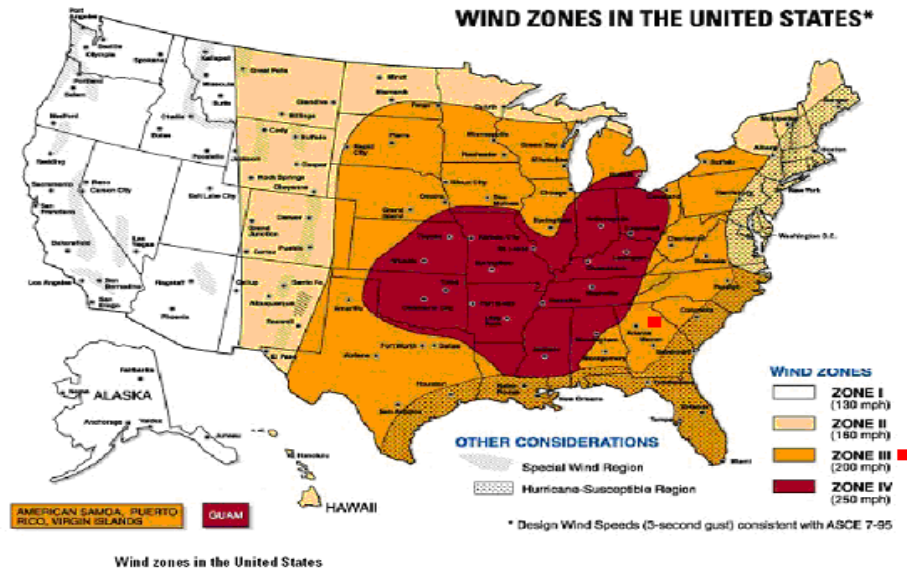
Source: Burke County Tax Assessor

All 122 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. The table below shows the number of critical facilities by jurisdictions, hazard score, replacement value, content value, and daily occupancy.

Jurisdiction	Hazard Score	# of Critical Facilities	Replacement Value \$	Content Value \$	Occupancy	
					Day	Night
Burke County (Unincorporated)	2	55	\$119,066,094	\$28,716,067	6,606	159
Girard	2	6	\$1,710,000	\$25,000	2	0
Keysville	2	5	\$6,216,000	\$234,000	89	64
Midville	2	11	\$5,851,055	\$51,200	8	2
Sardis	2	16	\$11,143,037	\$459,000	87	14
Vidette	2	3	\$257,065	\$0	0	0
Waynesboro	2	26	\$65,911,691	\$2,899,400	86	6
TOTAL FOR COUNTY		122	\$210,154,942	\$32,384,667	6,878	245

GMIS critical facility reports for wind can be found in Appendix A. FEMA Worksheet #3a is located in Appendix D.

- 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. Burke County is located in FEMA wind zone III, which is associated with 200-mph wind speeds. Currently, the county has no land use or development trends related to tornados, tropical storm, thunderstorm winds, lightning, or hail events. Information on current land use and future land use projections can be found in Appendix B.
- E. Multi-Jurisdictional Concerns** – All of Burke 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 ZONE			
		I	II	III	IV
NUMBER OF TORNADOES PER 1,000 SQUARE MILES	<1	LOW RISK	LOW RISK	LOW RISK	MODERATE RISK
	1 - 5	LOW RISK	MODERATE RISK	HIGH RISK	HIGH RISK
	6 - 10	LOW RISK	MODERATE RISK	HIGH RISK	HIGH RISK
	11 - 15	HIGH RISK	HIGH RISK	HIGH RISK	HIGH RISK
	>15	HIGH RISK	HIGH RISK	HIGH RISK	HIGH RISK

LOW RISK

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

MODERATE RISK

Shelter should be considered for protection from high winds

HIGH RISK

Shelter is preferred method of protection from high winds

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

During a natural hazard it is imperative that all emergency personnel 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 their county.

Another concern for all jurisdictions is the lack of animal friendly shelters.

The entire county has the potential to be affected by severe weather. However, the impact may be more severe in places with higher population density due to more people being in danger, more people needing to be evacuated, more debris from damaged buildings, and other impacts associated

with higher population density. 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. The table below provides a summary of severe events

Weather Event	#	Fatalities	Injuries	Approximate Property/Crop Damage
Thunderstorm Winds	202	0	4	\$1,249,761
Lightning	150	0	0	\$94,373
Hail	84	0	1	\$659,000

The GMIS has the entire county with a wind hazard score of two, where wind speed is between 90 to 99 mph. All 122 critical facilities have a wind hazard score of two with a replacement cost of more than \$210 million. To summarize, there are approximately 44,604 structures/properties in the county totaling slightly more than \$10 billion with a population of 23,316. A breakdown of information for individual jurisdictions can be found in Appendix A and Appendix D. Specific mitigation actions for severe weather 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 Burke County. There have been 34 winter storm events recorded in the county over the last 107 years with an estimated property damage of \$1.3 million reported. No winter storms have occurred since the last plan update.

The ice storm on February 11-13, 2014 had travel halted, schools and businesses were closed. The storm produced one inch of ice and produced one to two inches of sleet and snow across Burke County taking down numerous trees and power lines. Approximately 96 percent of Burke County residents were without power at the height of the storm. Power company officials called the devastation to their lines and the ensuing outages historical for this area, which reportedly took the hardest hit of any in the state. In the more rural parts of Burke County individuals were without power for up to 14 days.

The issues faced during the storm were as previously stated: no electricity for 96 percent of Burke County. Planters EMC lost power to the communication tower used by the county. The emergency personnel lost communication and went to an alternate form of communication until power was

restored. Extensive power outages caused a widespread medical panic when oxygen-dependent residents could not power their concentrators. The blackout also created a shortage of portable tanks. Burke Medical Center took in both Burke and Jenkins County patients who needed oxygen. In addition to emergency room visits, a number of residents were transported to “warming shelters” that were set up at three county fire stations, the Keysville Community Center and Waynesboro City Hall. Others were taken to shelters at Burke County High School and the National Guard Armory.

Because a local and state emergency was declared emergency officials were able to request manpower and equipment from the state. That included emergency generators to run water systems in Girard and Keysville, as well as three different seven-man forestry strike teams that cleared the roadways with chainsaws. EMA also requested four pallets of bottled water which were distributed to residents without running water.

According to Burke County Extension Coordinator Peyton Sapp the dairy and beef producers felt

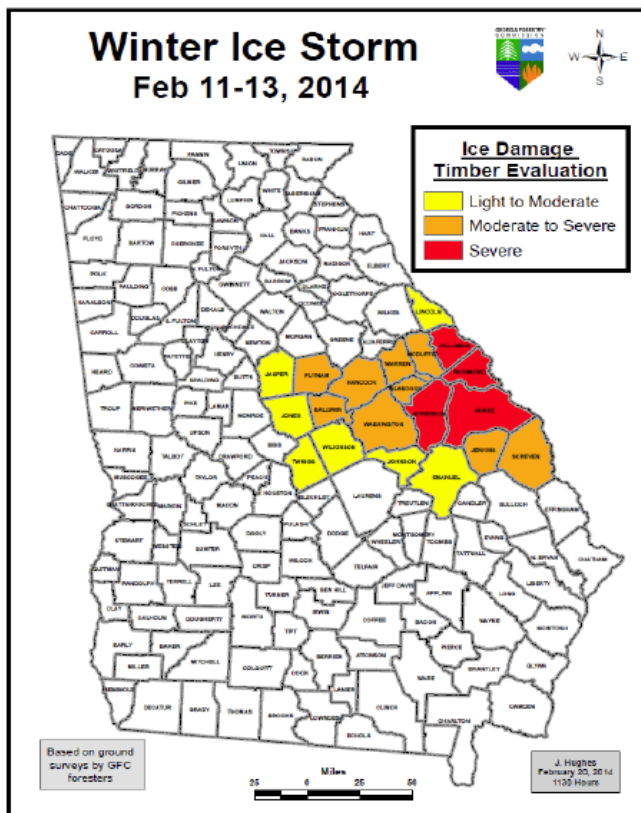
the effects as electric fences lost power, while others were downed by falling trees and limbs. Without power for their pumps many wells were inoperable. The dairy farms in the county relied on generators to milk their cows. Sapp also noted that cows need to increase their calorie intake by 1 percent for every degree the temperature drops below 32 degrees. So if the temperature is 12 degrees, the energy requirement would increase 20 percent.

The after effects of the ice storm left the cities and the county with a massive amount of debris to be cleared. At the height of the storm 60 percent of roads were blocked by debris throughout the county.

The other major after effect was to the timber industry. Burke County was one of the four counties hardest hit by the storm and had 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 severe damage had more than

30 percent of stems broken, tops broken out across the stand, limbs stripped, and trees bent more than 45 degrees.

Senior Forester Cathy Black stated that the timber industry is a business that takes decades to turn a profit. Some land owners will be set back 30 years. Some of the hardest hit areas crops of trees, called stands in the business, have been reduced to splinters. The tops were broken off the pine trees, some trees were snapped in half, and others blown over laying on the ground. When this happens all that can be done is to clear cut it and plant new trees.



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. The percentage is the same for all jurisdictions.

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

Jurisdiction	Number of Structure/Properties	Value	Population
Burke County (Unincorporated)	33,949	\$9,523,677,060	15,682
Girard	325	\$9,603,172	156
Keysville	460	\$7,497,912	332
Midville	1,164	\$24,019,487	269
Sardis	1,537	\$30,596,862	999
Vidette	232	\$4,858,977	112
Waynesboro	6,937	\$434,272,435	5,766
TOTAL FOR COUNTY	44,604	\$10,034,525,905	23,316

Source: Burke County Tax Assessor

The GMIS does not provide a report for winter storm damage but there is slightly more than \$10 billion worth of assets with potential loss to winter storm hazards countywide. The table below shows the number of critical facilities by jurisdiction, replacement value and daily occupancy (See Appendix A and Appendix D).

Jurisdiction	# of Critical Facilities	Replacement Value \$	Content Value \$	Occupancy	
				Day	Night
Burke County (Unincorporated)	55	\$119,066,094	\$28,716,067	6,606	159
Girard	6	\$1,710,000	\$25,000	2	0
Keysville	5	\$6,216,000	\$234,000	89	64
Midville	11	\$5,851,055	\$51,200	8	2
Sardis	16	\$11,143,037	\$459,000	87	14
Vidette	3	\$257,065	\$0	0	0
Waynesboro	26	\$65,911,691	\$2,899,400	86	6
TOTAL	122	\$210,154,942	\$32,384,667	6,878	245

- 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. Burke 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. Land use tables and projections can be found in Appendix B.

- E. Multi-Jurisdictional Concerns:** Burke 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.
- 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 44,604 structures/properties in the county totaling slightly more than \$10 billion with a population of 23,316. The committee recognized the dangers posed by winter storms and identified specific mitigation actions in Chapter III, Section III.

CHAPTER III. MITIGATION STRATEGIES

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

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 Burke County, Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro, 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 significant increase in population that would affect the overall vulnerability of the community from identified hazards. Burke County has adopted zoning regulations.

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. The approximate annual budget for each jurisdiction is:

- Burke County \$39.6 million;
- Girard \$81,000;
- Keysville \$251,700;
- Midville \$489,650;
- Sardis \$978,240;
- Vidette is \$27,401; and
- Waynesboro \$9,529,700.

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

While not all technical and administrative skills are found in-house, all jurisdictions have access to multiple staff through the RC and can contract out with private firms or any professional services needed. Jurisdictions can expand their capabilities measures such as adoption of zoning, land-use practices, and building codes. Additional staff can be hired when funding becomes available. The three tables below identify administrative, technical, legal and fiscal capabilities of each jurisdiction.

Legal and Regulatory Capability (Y/N)

Regulatory Tools (ordinances, codes, plans)	Burke County	Girard	Keysville	Midville	Sardis	Vidette	Waynesboro	Does State Prohibit
Building code	Y	N	Y	N	N	N	Y	N
Zoning ordinance	Y	N	N	N	N	N	Y	N

Regulatory Tools (ordinances, codes, plans)	Burke County	Girard	Keysville	Midville	Sardis	Vidette	Waynesboro	Does State Prohibit
Subdivision ordinance or regulations	Y	N	N	N	N	N	Y	N
Special purpose ordinances (floodplain management, storm water management, soil erosion)	Y	N	Y	Y	N	N	Y	N
Growth management ordinances (also called “smart growth” or anti-sprawl programs)	N	N	N	N	N	N	N	N
Site plan review requirements	Y	N	N	N	N	N	Y	N
General or comprehensive plan	Y	Y	Y	Y	Y	Y	Y	N
A capital improvements plan	Y	N	N	N	N	N	Y	N
An economic development plan	Y	N	N	N	N	N	Y	N
An emergency response plan	Y	Y	Y	Y	Y	Y	Y	N
A post-disaster recovery plan	N	N	N	N	N	N	N	N
A post-disaster recovery ordinance	N	N	N	N	N	N	N	N
Real estate disclosure requirements	N	N	N	N	N	N	N	N

Table 3. 3 Fiscal Capability

Financial Resources	Burke County	Girard	Keysville	Midville	Sardis	Vidette	Waynesboro	Accessible or Eligible to Use (Yes/No)
Community Development Block Grants (CDBG)	Y	Y	Y	Y	Y	Y	Y	Y
Capital improvements project funding	Y	N	N	N	N	N	Y	Y
Authority to levy taxes for specific purposes	Y	Y	Y	Y	Y	Y	Y	Y – Vote required
Fees for water, sewer, gas, or electric service	N	Y	Y	Y	Y	Y	Y	Y

Financial Resources	Burke County	Girard	Keyesville	Midville	Sardis	Vidette	Waynesboro	Accessible or Eligible to Use (Yes/No)
Impact fees for homebuyers or developers for new developments/homes	N	N	N	N	N	N	N	N
Incur debt through general obligation bonds	Y	Y	Y	Y	Y	Y	Y	Y
Incur debt through special tax and revenue bonds	Y	Y	Y	Y	Y	Y	Y	Y – Vote required
Withhold spending in hazard-prone areas	N	N	N	N	N	N	N	N
Other Grants	Y	Y	Y	Y	Y	Y	Y	N

Table 3.4 Administrative and Technical Capacity

Staff/Personnel Resources	Burke County	Girard	Keyesville	Midville	Sardis	Vidette	Waynesboro	Dept./Agency and Position
Planner(s) or engineer(s) with knowledge of land development and land management practices	Y	Y	Y	Y	Y	Y	Y	Building Dept./ Code Enforcement/ Public Works CSRA RC
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Y	Y	Y	Y	Y	Y	Building Dept./ Code Enforcement/ Contracted as needed
Planners or Engineer(s) with an understanding of natural and/or manmade hazards	Y	Y	Y	Y	Y	Y	Y	Public Works/CSRA RC Staff/ Contracted as needed
Floodplain manager	N	N	N	N	N	N	N	
Surveyors	N	N	N	N	N	N	N	Contracted as needed

Staff/Personnel Resources	Burke County	Girard	Keysville	Midville	Sardis	Vidette	Waynesboro	Dept./Agency and Position
Staff with education or expertise to assess the community's vulnerability to hazards	Y	Y	Y	Y	Y	Y	Y	Public Safety/EMA
Personnel skilled in GIS and/or HAZUS	Y	Y	Y	Y	Y	Y	Y	CSRA RC Various
Emergency manager	Y	Y	Y	Y	Y	Y	Y	EMA
Grant writers	Y	Y	Y	Y	Y	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. On this basis 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 modifications 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 Policies, Regulations, Ordinances, and Land Use

Burke County and Waynesboro 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:

- Keysville, Sardis and Vidette have adopted mobile home ordinances to regulating location.
- Midville and Waynesboro have adopted historic preservation ordinances
- Burke County has adopted a Soil Erosion and Sedimentation Control Ordinance
- Burke County has adopted a Solid Waste Management Facility Ordinance
- Burke County, Waynesboro, Keysville, and Midville have flood plain ordinances.
- Waynesboro has adopted a Storm Water Management Ordinance.
- Waynesboro has adopted zoning ordinances and subdivision regulations.

The *Burke County Comprehensive Plan 2018-2028* was adopted by resolution by the Burke County Board of Commissioners and the City Councils of Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro. 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 each municipality. The joint comprehensive plan also examines existing land use and projects future land use. The plan gives a community continuity and stability across administrations and agencies for addressing land use issues and zoning plan allowing the county and its jurisdictions to expand and adjust their capabilities and use their resources wisely.

iii. Community Values, Historic & Special Considerations

Historical-Cultural

There are six National Register of Historic Places in Burke County:

- Burke County Courthouse**, listed in 1980, a "carpenter Romanesque" (perhaps a vernacular Romanesque Revival) building completed in 1857. It is one of just four courthouses in Georgia that were built in the 1850s and still serve as courthouses. L.F. Goodrich is credited as the building's architect (likely for renovations or redesign work). It is a two-story structure built of red brick that is covered with a gritty cement-like mixture "scored to look like very perfect brick"; this treatment does not appear on any other Georgia courthouse but does appear on the Hay House in Macon, Georgia. It has a clock tower that rises in five stages to a pyramidal roof with pediment clocks. A two-story annex was built in 1940 and joined by an open bridge on two levels at the rear of the building.



- Haven Memorial Methodist Episcopal Church**, listed in 1996 is a historic Gothic Revival-style church in Waynesboro, Georgia which was founded by



former slaves in 1866. It is located on Barron Street south of the junction of Barron Street and 6th Street. The Church burned on September 16th, 2017 and was a total loss. Construction of the present church building was begun in 1888.

- Hopeful Baptist Church**, listed in 1993, is a historic church in Keysville, Georgia. It is located on Winter Road east of the junction with Blythe Road. It is a classic Greek Revival, monumental, temple-like building built during 1850–51, and the church is notable for having both white and black members, before the American Civil War. It is made of George longleaf yellow pine (heart pine), on a brick



foundation. It has four masonry front porch columns supporting a large pediment in the front gable. It has an entablature and pilasters and two door openings in the front (north-facing) facade. It has five windows on each side and two on the south end, all windows being original, large 16-pane over 16-pane windows.

- **John James Jones House** (also known as Jones-Cox House and as The Shadows) listed in 1980. It is a historic house located at 525 Jones Avenue in Waynesboro, Georgia. The two-story house is a mix of Greek Revival and Victorian architecture. The home was built for John James Jones.

- **McCanaan Missionary Baptist Church and Cemetery**, listed in 2001. The McCanaan Missionary Baptist Church is an active church in Sardis, Georgia. It serves members in Burke County, Georgia and Screven County, Georgia. The church was organized in 1875 by Rev. Frank Cooper, and a small church was built on the current church's site. Its



membership included sharecroppers at the Millhaven Plantation in Screven County, Georgia. The c.1875 church was replaced in the 1890s and the church was again rebuilt in 1912. In the early 1900s a school was built behind the church which served grades one through six. The property has a cemetery that was started in the 1930s, next to the church, after burials at a church-associated original cemetery on Millhaven Plantation (about 4.5 miles away, to the southeast) were ceased. The cemetery has "simple granite markers". 6 Baptisms associated with the church took place in Brier Creek, about one mile to the north. In its NRHP nomination, the church was deemed significant architecturally as "an excellent example of a rural African-American church with a cemetery" in Georgia, having characteristics identified as typical for the type. It is a wood framed simple building with a church tower and a modest amount of Gothic Revival styling in its windows, gable-ends, and tower. The Millhaven Plantation was a very large operation. A history of the church at its 121st anniversary was written by church member Evelyn Williams in 1996.

- **Sapp Plantation**, listed in 1980. Its plantation house was built in the 1820s with mortise-and-tenon construction. It is a two-story building with one-story additions. The historic plantation located outside of Sardis, Georgia.

Recreation

The Georgia Field Trials began here in Burke County in 1901 and continue to the present making Waynesboro "The Bird Dog Capital of the World." The Field Trials, hosted at Di-Lane Plantation, include the largest open-shooting dog competition in the world and one of only three derby championships in the nation that qualify a dog for the national championship.

Waynesboro also host the annual Boss Hog State Championship Cook-off. Sanctioned by the Kansas City Barbeque Society, the event brings together competition cook teams and some of the best ribs, barbeque, brisket and chicken in the southeast.

Economic Drivers

Burke County consist of 534,400 acres with 191,790 acres (35.9 percent) dedicated to agricultural and 332,257 acres (62.2 percent) dedicated to forestry. According to the USDA 2017 Census of Agriculture 38,936 head of livestock. Burke County remains one of Georgia's most important farming counties, with nearly half of its acreage in farmland and timber production and harvesting more than 60,000 acres of crops each year. A bird's eye view of the landscape reveals pine and hardwood forests and patchwork quilt of cotton, corn, soybeans, peanuts and pastureland. The diversified mix of food and fiber crops also includes one of the state's leading organic blueberry operations and a strawberry farm that offers a popular roadside stand and U-pick experience.

Burke County is home to The Alvin W. Vogtle Electric Generating Plant, also known as Plant Vogtle, which is a 2-unit nuclear power plant. In 2010 approval was given to build two new units at Plant Vogtle.

There are several industries that are located in Burke County:

- Sam Dong Co., Ltd, a South Korean based Magnet Wire manufacturer;
- Alstom Grid manufacturer of high-voltage oil-filled instrument transformers for the power industry
- Evercare/Onecare manufactures and distributes fabric care, soft surface, pet care, air care, drain care, and private label products.
- FIAMM Energy manufactures storage batteries;
- Samsons Manufacturing, Corp manufactures window coverings;
- Galaxy is Samson's Distribution Center;
- Legion Industries manufactures stainless and copper cookware.
- Purification Cellutions is a leading manufacturer of activated carbon honeycombs used in the air purification and automotive industries.
- Mr. Golf Cart is the world's largest manufacturer of refurbished golf carts.

The residents of Burke County and all six municipalities value their residential, historic and commercial assets and are committed to protecting them against disasters.

- 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 jurisdictions 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 Burke County together with Girard, Keysville, Midville, Sardis, Vidette and Waynesboro have identified to reduce the effects of natural hazards. Mitigation actions given high priority are in two groups: (1) life safety-related actions that can be accomplished relatively quickly and (2) changes to protect critical facilities on which other emergency management systems are dependent, for example communications focal points. Those actions likely to require extended time frames to accomplish received medium priority status.

SECTION II. NATURAL HAZARDS

A. Flooding Action Plan

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

Objective A1. Improve the effectiveness of existing flood insurance programs.

Objective A2. Evaluate and improve the present drainage infrastructure.

Objective A3. Warn citizens when the potential for flooding exist.

Objective A4. Lessen the impact to existing buildings, critical facilities and infrastructure 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 Burke 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 Burke 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 Burke 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 E1. Minimize damage to property from a tornado events.

Objective E2. Minimize damage to public buildings and critical facilities to ensure continual operations of vital services.

Objective E3. Protect vulnerable populations from the effects of severe weather events.

Objective E4. Educate the public including citizens and business owners on disaster preparedness and safety.

F. Tropical Storm

As with many Georgia communities, if a tropical storm were to strike Burke 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 Burke 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 severe weather 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. Since the exact time and location of a severe weather event is not always predictable, all of Burke County is vulnerable to the threats of severe weather. 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 Burke 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, Burke County and other southeastern communities must be prepared for the damage caused by winter storms. The fact that winter storms hit Burke County infrequently results in other problems, such as lack of equipment and supplies to combat treacherous winter storm conditions. In Burke County, the formation of ice on roads and bridges, tree limbs, and power lines is the cause of most damage. In Chapter II, Section VI 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 Burke 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 Burke County.
- Objective I6.** Guarantee that all Emergency Response Plans are up to date and adequate to meet the needs of citizens of Burke County.
- Objective I7.** Ensure all emergency shelters are ready to meet the needs of the population of Burke County and all jurisdictions.
- Objective I8.** Provide the citizens of Burke County educational information on Emergency Preparedness.
- Objective I9.** Provide the citizens of Burke County with accurate and timely information pertaining to Emergency Preparedness.
- Objective I10.** Collect accurate and complete data pertaining to hazard events within Burke County and all jurisdictions.

SECTION III. MITIGATION ACTIONS

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
1.	Work with Burke County on MOA to assist with flood plain management Adopt floodplain ordinances and participate in the NFIP	Vidette, Girard, Sardis, Burke County	BOC/ City Councils	Flood	A1	1, 2, 4, 5	Non-Structural	Staff Time	General Funds	2019-2021	Ongoing	High
2.	Increase Participation Level in the NFIP and CRS	Burke County, Waynesboro, Keysville, Midville	BOC/ City Councils	Flood	A1, A2	1, 2, 4, 5	Non-Structural	Staff Time	General Funds	2019-2022	Stalled due to cost restraints	Low
3.	Continue to assess stormwater runoff.	Burke County/All Municipalities	Public Works	Flood	A5, C2	2, 6	Non-Structural	Staff time	General Funds	2019-2024	Ongoing As part of work duties	High
4.	Construct as needed, more storm water retention facilities, storm drain improvements and channel improvements to protect existing and new developments.	Burke County/All Municipalities	BOC/City Council/ Public Works	Flood/ Tornado/ tropical Storms/ Severe Weather/ Drought	A5, C2, F1, F2, F3	2, 6	Non-Structural	\$3,000,000	General Funds/ CDBG, USDA, EPA, DNR/ FEMA	2019-2024	Ongoing As funding becomes available	High
5.	Clear run-off and water retention ditches.	Burke County/All Municipalities	Public Works/Road Dept.	Flood	A5	2, 1	Structural	Staff Time	General Funds	2019-2024	Ongoing Ditches are cleared by Road Dept. as part of their work load.	High
6.	Seek funding for communication towers and voice repeater systems.	Burke County/All Municipalities	EMA/ Police/ Sheriff	All hazards	I1, I4	1	Structural	\$750,000	General Fund, FEMA, CJCC, JAG, USDA, DOJ	2019-2024	Ongoing As funding becomes available	High

2019 Multi-Hazard Pre-Disaster Mitigation Plan Update

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
7.	Install an extra monitoring device on Brier Creek	Burke County, Waynesboro	BOC/City Council/ Public Works	Flood	A4, B2, I4,	1, 2, 6	Non-Structural	\$50,000	General Fund, FEMA, DNR	2019-2021	As funding becomes available	Medium
8.	Evaluate existing water systems upgrade as needed	Keysville, Sardis, Girard, Waynesboro, Midville	Public Works	Flood/ Drought/ Wildfire	A7, C1	1, 2, 6	Structural	\$1,500,000	General Fund, CDBG, USDA, EPA, DNR	2019-2024	Ongoing As funding becomes available	High
9.	Investigate methods to reduce non-point source pollution.	Burke County, Waynesboro	Public Works/Planning	Flood	A7	1, 2, 5	Non-Structural	\$500,000	USDA, EPA, DNR	2019-2024	No projects have been identified	Low
10.	Enact a program to educate the residents about water conservation issues	Burke County/All Municipalities	BOC/City Councils/ Public Works	Drought	C1, C2	1, 3	Non-Structural	\$2,000.00	USDA, EPA, DNR, General Funds	2019-2024	Stalled due to staff time	Medium
11.	Increase public awareness of watering restrictions and bans.	All Municipalities	City Councils/ Public Works	Drought	C1, C2	1, 3	Non-Structural	Staff Time	General Funds	2019-2024	This is done during state declared droughts	High
12.	Develop a public awareness campaign to promote water-saving campaigns (i.e. low-flow water saving devices)	Burke County/All Municipalities	BOC/Public Works	Drought	C1, C2	1, 3	Non-Structural	Staff Time	General Funds	2019-2024	Stalled due to staff time	Medium
13.	Continue training of all firefighters to include wildland fire training.	Burke County/ Waynesboro	BOC/ Waynesboro City Council /EMA	Wildfire	D1	1, 2	Non-Structural	\$50,000	General Funds, FEMA	2019-2014	Ongoing Training is ongoing through the year	High
14.	Seek funding for needed firefighting equipment	Burke County/ Waynesboro	BOC/ Waynesboro City Council /EMA	Wildfire	D1	1, 2	Non-Structural	\$120,000	General Funds, FEMA	2019-2014	Ongoing As funding becomes available	High

2019 Multi-Hazard Pre-Disaster Mitigation Plan Update

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
15.	Replace or install more fire hydrants as needed.	Burke County/All Municipalities	BOC/City Council/Public Work's	Wildfire	D1	1, 2	Structural	\$150,000	General Funds,/ FEMA/CDBG	2019-2024	Ongoing As funding becomes available	High
16.	Seek funding for more fire fighting vehicles for local fire departments.	Burke County/ Waynesboro	BOC	Wildfire	D1	1, 2	Non-Structural	\$2,000,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	High
17.	Implement the Firewise Community Initiative where appropriate	Burke County, and all Municipalities	BOC/ Waynesboro City Council /EMA/	Wildfire	D2, D3	1, 2, 3	Non-Structural	\$25,000.00	General Funds, GFC	2019-2024	Stalled as no communities have been identified to participate	Low
18.	Improve public awareness of wildfire techniques and awareness of wildfire dangers.	Burke County and all Municipalities	EMA/ Fire Departments	Wildfire	D2, D3	1, 2, 3	Non-Structural	\$25,000.00	General Funds	2019-2024	Ongoing Info will be added to website and Facebook page as appropriate	High
19.	Adopt Building Codes	Girard, Keysville, Midville, Sardis, Vidette	City Councils	Flood/ Tornado/ tropical Storms/ Severe Weather/ Winter Storms	A5, A6, E1, E2, F1, F2, G1, G2	1, 2, 4, 6	Structural/ Non-Structural	Staff Time	General Fund	2019-2021	Stalled due to lack of staff to enforce	Medium

2019 Multi-Hazard Pre-Disaster Mitigation Plan Update

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
20.	Adopt Zoning Regulations	Girard, Keysville, Midville, Sardis, Vidette,	City Councils	Flood/ Tornado/ tropical Storms/ Severe Weather/ Winter Storms	A5, A6, E1, E2, F1, F2, G1, G2	1, 2, 4, 6	Structural/ Non-Structural	Staff Time	General Fund	2019-2021	Stalled due to lack of funds and staff	Medium
21.	Equip all county and city recreation parks with adequate early severe weather warning and lightning detection devices.	Burke County/All Municipalities	EMA/Fire Depts./ Recreation Dept.	Flood/ Tornado/ tropical Storms/ Severe Weather/ lightning	E3, E4, F3, F4, G3, G4	1, 2, 6	Structural	\$25,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	High
22.	Inspects public buildings and critical facilities and retrofit to reinforce windows, doors, and roofs as needed	Burke County/All Municipalities	Public Works/ Fire Depts. /EMA	Flood/ Tornado/ tropical Storms/ Severe Weather/ Winter Storms	E1, E2, E3, F1, F2, F3, G1, G2, G3	1, 2, 6	Structural	\$500,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available and projects are identified	Medium
23.	Enforce building codes for all new buildings and critical facilities.	Burke County/All Municipalities	Code Enforcement and Building Inspection	Flood/ Tornado/ tropical Storms/ Severe Weather/ Winter Storms	A5, A6, E1, E2, F1, F2, G1, G2,	1, 2, 6	Structural/ Non-Structural	Staff Time	General Funds, FEMA	2019-2024	Ongoing	High
24.	Install lightning rods in high value critical facilities.	Burke County/All Municipalities	BOC/City Councils/ Public Works	Severe Weather/ lightning	G1, G2, G3	1, 2, 6	Structural	\$100,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	High

2019 Multi-Hazard Pre-Disaster Mitigation Plan Update

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
25.	Review current Emergency Response Plan and update when needed.	Burke County EMA	BOC/City Councils/ EMA	All hazards	I6, I8	1, 2, 3	Non-Structural	Staff Time	General Funds	2019-2021	Updated as required Last revision was July 2018	High
26.	Review current evacuation plans paying particular attention to vulnerable populations and update as needed.	Burke County EMA	BOC/City Councils/ EMA	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
27.	Develop a public awareness program about the installation of lightning grounding systems on critical infrastructure, residential and business properties.	Burke County EMA	BOC/City Councils/ EMA	Tornado/ tropical Storms/ Severe Weather, Lightning	E4, F4, G4	1, 2, 3	Non-Structural	Staff Time	General Funds	2019-2021	Stalled due to lack of staff	High
28.	Install generators at critical facilities where needed.	Burke County/All Municipalities	EMA/ Fire Code Enforcement and Building Inspection	All hazards	I7	1, 2, 3, 6	Structural	\$300,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	High
29.	Seek funding to ensure all current and future emergency shelters have back-up generators.	Burke County/All Municipalities	Code Enforcement and Building Inspection	All hazards	I7	1, 2, 3, 6	Structural/ Non-Structural	\$200,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	High

2019 Multi-Hazard Pre-Disaster Mitigation Plan Update

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
30.	Educate the public on shelter locations and evacuation routes	Burke County/All Municipalities	EMA/ Fire/Sheriff/ Police	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
31.	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.	Burke County/All Municipalities	EMA/ Fire/Sheriff/ Police	Flood, Wildfire, Dam Failure, Tornado/ tropical Storms/ Severe Weather, Winter Storm	I8, I9	3	Non-Structural	\$10,000	General Funds, FEMA	2019-2021	Information is posted on Facebook and EMA website as needed	Medium
32.	Implement a winter storm education program to include winterization of home and/or business and what to do before, during and after.	Burke County/All Municipalities	EMA/ Fire/Sheriff/ Police	Winter Storm	H1	3	Non-Structural	\$25,000	General Funds	2019-2021	Information is posted on Facebook and EMA website as needed	Medium
33.	Create a data base to record hazard event information.	Burke County/All Municipalities	EMA/ Fire/Sheriff/ Police	All hazards	I10	1, 2, 3,	Non-Structural	Staff Time	General Funds	2019-2024	Stalled due to lack of staff	Medium
34.	Conduct dam breach analysis to identify assets and population at risk in the event of a failure.	Burke County, Waynesboro	BOC/City Councils/ EMA	Dam Failure	B1, B2	1, 2,	Non-Structural	\$50,000	General Funds, DNR	2019-2021	Stalled due to funding	Medium
35.	Draft ordinance prohibiting development in dam breach zone.	Burke County, Waynesboro	BOC/City Councils/	Dam Failure	B2	1, 2, 4	Non-Structural	Staff Time	General Funds	2019-2021	In progress	Medium

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
36.	Inventory existing road equipment and purchase needed equipment to maintain roads before, during and after a hazard event.	Burke County, Waynesboro	BOC/ City Councils/ EMA	Flood, Tornado/ tropical Storms/ Severe Weather, Winter Storm	I2	1, 2	Non-Structural	\$500,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	Medium
37.	Develop coordinated management strategies for deicing, snow plowing, and clearing roads of fallen trees and debris	Burke County/All Municipalities	BOC/ City Councils/ Planning and Zoning	Flood, Tornado/ tropical Storms/ Severe Weather, Winter Storm	I2	1, 2	Non-Structural	Staff Time	General Funds	2019-2021	Stalled due to staff time	High
38.	Promote the construction of safe rooms in shelter areas and in public buildings.	Burke County/All Municipalities	BOC/ City Councils/ EMA	Flood, Wildfire, Dam Failure, Tornado/ tropical Storms/ Severe Weather, Winter Storm	I3	1, 2, 6	Structural	\$120,000	General Funds, FEMA	2019-2024	Ongoing As funding becomes available	Medium
39.	Update 911 equipment as needed.	Burke County EMA	BOC/ City Councils/ EMA	All hazards	II, i3	1, 2, 6	Structural	\$75,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	High
40.	Request that all new education facilities be designed to serve as public shelters for emergency purposes.	Burke County	BOC/ EMA	All hazards	I7	1, 2, 6	Non-Structural	Staff Time	General Funds	2019-2024	Stalled until next school is designed No new schools have been designed	High

2019 Multi-Hazard Pre-Disaster Mitigation Plan Update

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supported	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
41.	Promote and participate in the following American Red Cross Programs • Disaster Resistant Neighborhoods Program • Business and Industry Preparedness Seminar • Community Disaster Education Preparedness presentations	Burke County/All Municipalities	BOC/ City Councils/ EMA/ Sheriff	All hazards	I4, I8, I9	1, 2, 3	Non-Structural	\$10,000	General Funds, FEMA	2019-2021	Ongoing	Medium
42.	Continue update of EMA website and Facebook page with information pertaining to Emergency Preparedness/ Weather Events and Education.	Burke County EMA	EMA/	All hazards	14, I5, I6, I7, I8, I9.	1, 2, 3	Non-Structural	Staff Time	General Funds	2019-2024	Ongoing updated as needed	High
43.	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.	Burke County/All Municipalities	BOC/ City Councils/ BOE	Flood, Wildfire, Dam Failure, Tornado/ tropical Storms/ Severe Weather, Winter Storm	I9, I10	1, 2, 6	Non-Structural	50,000	General Funds, FEMA	2019-2021	Ongoing As funding becomes available	High
44.	Purchase New UHF System and bring all jurisdictions into the new system	Burke County	BOC/ EMA/	All hazards	I1	1, 2, 6	Structural	\$450,000	General Funds, FEMA	2019-2020	In progress and to be completed within the year.	High
45.	Upgraded water lines to meet FEMA recommendations for firefighting and install fire hydrants.	Vidette	Vidette City Council and Public Works	Wildfire, Drought	C1, D1	1, 2, 6	Structural	\$800,000	General Funds, USDA, GEFA	2019-2023	Ongoing As funding becomes available	High

2019 Multi-Hazard Pre-Disaster Mitigation Plan Update

Action #	Mitigation Action and Description	Jurisdiction	Implement Agency	Hazards Addressed	Objective Supporte d	Goal	Structural/ Non-Structural	Estimated Project Cost	Possible Funding Source(s)	Time frame	Status	Priority
46.	Stormwater flood and drainage Project has been identified at Tyrone Brooks Street, Old Waynesboro Rd to Lee St. Neely Drive	Keysville	City Council and Public Works	Flood, tropical Storms/ Severe Weather	A3, A5, F1, H1	2, 4, 6	Structural	750,000	General Funds, FEMA, CDBG	2019-2023	Ongoing As funding becomes available	Medium
47.	Stormwater flood and Drainage Project has been identified Old Waynesboro Rd to Lee St.	Keysville	City Council and Public Works	Flood, tropical Storms/ Severe Weather	A3, A5, F1, H1	2, 4, 6	Structural	\$1.2 million	General Funds, FEMA, CDBG	2019-2023	Ongoing As funding becomes available	Medium
48.	Stormwater flood and Drainage Project has been identified at Neely Drive	Keysville	City Council and Public Works	Flood, tropical Storms/ Severe Weather	A3, A5, F1, H1	2, 4, 6	Structural	550,000	General Funds, FEMA, CDBG	2019-2023	Ongoing As funding becomes available	Medium
49.	Stormwater flood and Drainage Project has been identified at Hwy 24 W. at Rocky Creek Road	Burke County	BOC/ Public Works/ Road Dept.	Flood, tropical Storms/ Severe Weather	A3, A5, F1, H1	2, 4, 6	Structural	850,000	General Funds, FEMA, CDBG	2019-2023	Ongoing As funding becomes available	Medium
50.	Elevate Antennas on towers or relocate to higher altitudes to lessen dead spots in county and improve communication between jurisdictions.	Burke County	BOC/EMA	All Hazards	A4, I1	1, 2	Structural	\$50,000	General Funds, FEMA,	2019-2023	Ongoing As funding becomes available	High
51.	Seek fund for new communications radios and equipment.	Waynesboro	City Council and Public Works	All hazards	I1, I4	1	Non-Structural	\$150,000	General Funds, FEMA,	2019-2021	Ongoing As funding becomes available	High
52.	Seek funding a Multi-Jurisdictional Emergency Operation Center.	Burke County	BOC/ Public Works/ Road Dept.	All hazards	I1, I4	1	Non-Structural	\$2,500,000	General Funds, FEMA,	2019-2023	Ongoing As funding becomes available	High

- 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. This database should include information such as location (road names, neighborhoods, GPS coordinates, etc.), damages reported, power outages, road closures, county and city personal that are dispatched to the area, etc.

D. Completed and Deleted Action Steps from 2014 Update Plan:

Flood

- Update Floodplain Maps. FEMA updated all maps in 2010.
- Review existing comprehensive, development and land use plans to address flood prone areas. Completed during the 2018-2028 Comprehensive Plan Update.
- Promote the preservation of areas in and around watercourses. Removed as development is restricted due to flood ordinances.
- Add greenspace to known flood prone areas. Removed as flood prone areas are not for development.
- Run HAZUS scenarios once the software is updated and compatible to RC ArcGIS 10.2 and updated estimated losses. Completed

Dam Failure

- Install dam failure alert systems. All dams have alert systems. Completed

Drought

- Water Use Ordinances was removed from the plan. All water departments have adopted GA EPD guidelines. Completed

Wildfire

- Enforce defensible space (30-ft minimum setbacks) between buildings and flammable brush and forestland where possible. This is followed to the greatest extent possible. Completed

- Continue following GFC service of construction and maintenance of firebreaks around forests and structures, along abandoned roadbeds. This is followed to the greatest extent possible. Completed
- Strictly follow GFC's guidelines for control burns and permits. This is followed. Completed

Severe Weather

- Run HAZUS scenarios once the software is updated and compatible to RC ArcGIS 10.2 and updated estimated losses. Completed
- 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. There are no financial funds available. This was deleted due to funding.
- Provide boat owners with safety tie down procedures with boat registration. Removed

Winter Weather

- Purchase a portable sewer transfer pumping unit. Cost benefit is best to rent when needed. Deleted
- Herman Nelson Warming System AIR HEATER w/TRAILER Not cost effect. Deleted
- Review current codes to comply with and enforce the State building code with criteria for design snow load for buildings and structures. All state building codes are enforced. Completed

All Hazards

- Work with local cable and radio providers to enhance and broadcast public education on Emergency Preparedness. Completed
- Inspect all county and municipal critical facilities for proper grounding. Completed
- Install surge protectors on critical facilities' electronic equipment in essential county and city facilities. Completed.

E. Unchanged and/or Continual Action Steps: The following mitigation steps remain in the plan. Based on the STAPLEE Criteria these unchanged action steps were found to be relevant in limiting the damage to people and property from a natural hazard. All action steps have been reformatted to meet the action step criteria established by GEMA and FEMA. STAPLEE worksheet can be found in Appendix D for each action step.

Flood:

- Participate in the NFIP and adopt floodplain ordinances for Vidette, Girard, and Sardis.
- Continue to assess storm water run-off.
- Seek funding to construct more storm water retention facilities, storm drain improvements and channel improvements to protect existing and new developments.
 - i. Waynesboro completed a flood and drainage on Tucker Street for \$23,475

- Clear run-off and water retention ditches.
- Adopt ordinances to control building and development in known flood prone areas.
- Investigate methods to reduce non-point source pollution.
- Install an extra monitoring device on Brier Creek
- Stormwater flood and drainage Project has been identified at Tyrone Brooks Street, Old Waynesboro Rd to Lee St. Neely Drive
- Stormwater flood and Drainage Project has been identified Old Waynesboro Rd to Lee St.
- Stormwater flood and Drainage Project has been identified at Neely Drive
- Stormwater flood and Drainage Project has been identified at Hwy 24 W. at Rocky Creek Road

Dam Failure

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

Drought

- Evaluate existing water systems. Activities under this strategy to date are:
 - i. Waynesboro completed water system improvements for \$117,470.
 - ii. Keysville completed waster system improvements for \$80,000.
 - iii. Girard completed work a new well and well house for \$650,000.
 - iv. Vidette installed a new well for \$300,000
- Increase public awareness of watering restrictions.
 - i. Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro post water restrictions.
- Educate citizens on water conservation.
- Develop a public awareness campaign to promote water-saving campaigns (i.e. low-flow water saving devices)

Wildfire

- Seek funding to install more fire hydrants.
 - i. Keysville installed 23 new hydrants and repaired one for \$40,000.
 - ii. Sardis added a hydrant meter for \$1,255
- Continue training of all firefighters to include wildland fire training.
 - i. All paid firefighters have had 240 hours of annual training.
 - ii. All volunteer firefighters have completed annual fire training requirements.
 - iii. The EMA's Facebook page shows training activities.
- Seek funding for needed firefighting equipment.
 - i. Waynesboro purchased \$15,600 in firefighter turnout gear.
 - ii. Burke County purchased firefighter turnout gear for \$87,676.
- Upgrade water lines to meet FEMA recommendations for firefighting and install fire hydrants for Vidette.
- Seek funding for more firefighting vehicles for local fire departments.

- i. Waynesboro purchased a new pumper fire truck for \$288,556 and a used aerial fire truck for \$50,000.00
- ii. Burke County purchased \$1,486,382 in new fire vehicles and \$801,708 in new EMS vehicles.
- Improve public awareness of wildfire techniques and awareness of wildfire dangers.
 - i. The EMA has set up a Facebook with educational information.
- Participate in the Firewise Community Initiative.

Severe Weather

- Review building codes for proper wind strength and safety regulations and for consistency with state and federal regulations.
- Inspect public buildings and critical facilities and retrofit to reinforce windows, doors, and roofs as needed.
- Install lightning rods in high value critical facilities.
- Equip all county and city recreation parks with adequate early severe weather warning and lightning detection devices.
- Develop a public awareness program about the installation of lightning grounding systems on critical infrastructure, residential and business properties.
- Develop public education and awareness programs regarding severe weather events to include home safety measures, purchase of weather radio and personal safety measures before, during and after severe event weather.
- Promote and participate in the following American Red Cross Programs
 - i. Disaster Resistant Neighborhoods Program (educating communities)
 - ii. Business and Industry Preparedness Seminar (educating businesses on business continuity planning)
 - iii. Community Disaster Education Preparedness presentations (educating adults, children and families)

Winter Weather

- Implement a winter storm education program to include winterization of home and/or business and what to do before, during and after the winter storm event.
- Develop coordinated management strategies for deicing, snow plowing, and clearing roads of fallen trees and debris.

All Hazards

- Seek funding a Multi-Jurisdictional Emergency Operation Center.
- Seek funding for communication towers and voice repeater systems.
- Inventory existing road equipment and purchase needed equipment to maintain roads before, during and after a hazard event.
- Install generators at critical facilities where needed.
 - City of Waynesboro commissioned a generator study that identifies areas that need a generator and the estimated cost of each.
 - Burke County installed a generator at the public works headquarters for \$27,800.
- Review and current Emergency Response Plan and update when needed
 - LEOP was revised 7-16-2018.

- Seek funding to ensure all current and future emergency shelters have back-up generators
- Request that all new education facilities be designed to serve as public shelters for emergency purposes.
- Review current evacuation plans paying particular attention to vulnerable populations and update as needed
- Educate the public on shelter locations and evacuation routes
- Elevate Antennas on towers or relocate to higher altitudes to lessen dead spots in county and improve communication between jurisdictions
- Create a data base to record hazard event information.
- 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.
- Seek funding for new communications radios and equipment.
- Adopt Building Codes
- Adopt Zoning Regulations.
 - Burke County adopt zoning regulations that went into effect 01/2019.
- Enforce building codes for all new buildings and critical facilities.
- Promote the construction of safe rooms in shelter areas and in public buildings.
- Update 911 equipment as needed.
- Continue update of EMA website and Facebook page with information pertaining to Emergency Preparedness/ Weather Events and Education.
- Purchase New UHF System and bring all jurisdictions into the new system
 - This is in progress and should be completed within the year.

CHAPTER IV. PLAN INTEGRATION AND MAINTENANCE

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

Chapter 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	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: Burke County EMA was responsible for overseeing the original planning process and update. Facilitation of the planning process was conducted by the Central Savannah River Area Regional Commission. The Burke County Board of Commissioners has authorized the submission of this plan to GEMA and FEMA for their respective approvals. The Burke County Board of Commissioners and the City Councils of Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro 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 Burke County Board of Commissioners and the Mayors of all incorporated jurisdictions will be responsible for assigning appropriate staff members to implement the action steps identified in this plan for their jurisdictions. The EMA Director, or his designee, shall be authorized to call the committee to review and update this plan periodically (at least annually) throughout the useful life of the plan, not to exceed five years.

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

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

cost effectiveness, availability of potential funding sources, overall feasibility, measurable milestones, multiple objectives, and both public and political support for the proposed actions.

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

The committee was asked to review the STAPLEE score sheet 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 appropriate. The County along with all six jurisdictions 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 Hazard Mitigation Plan will be reviewed by the County along with all six jurisdictions. The requirements of this Hazard Mitigation Plan will be taken into consideration and will be incorporated into Comprehensive Plans, Five-Year Short-Term Work Program, Local Emergency Operations Plans, and all other such Plans as appropriate. This hazard plan will be reviewed and incorporated into the Joint Comprehensive plan and STWP update as needed. 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 were included in the revision of the Local Emergency Operations Plan in 2018. This hazard plan update will also be reviewed in the next update of the LEOP.

Once this plan is approved, it will be used by the consultants and planning committees responsible for the update process for the Joint Comprehensive Plan, Short-Term Work Programs, and all other plans that could incorporate the requirements of this plan. To facilitate inclusion of this Plan, Burke County and all cities 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, Burke 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.**
- Each hazard will be reviewed. Any new information pertaining to new and/or previous events will be added to the plan.
 - Any new critical facilities will be added to the plan.
 - Critical facilities information will be updated as needed.
 - 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.
 - New mitigation activities will be added if necessary.
 - Public participation will be monitored and documented.
- C. Responsibility:** At the direction of the EMA Director, the committee shall be reconvened for the revision process that will include a schedule, timeline, and a list of the agencies or organizations participating in the plan revision. Burke 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.

Jurisdiction	Hazard Mitigation Update Committee	Review
	Point-of-Contact	Schedule
Burke County	Emergency Management Director	Annually
Girard	City Official	Annually
Keysville	City Administrator	Annually
Midville	City Official	Annually
Sardis	City Official	Annually
Vidette	City Official	Annually
Waynesboro	City Manager	Annually

- D. Timeframe:** The committee has set the second Monday 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:** Burke 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 Burke 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, Burke 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, Burke 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 True Citizen*, providing Burke 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. Tornadoes 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 Burke 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 Burke County Pre-Disaster Hazard Mitigation Planning Committee is to *"Make the citizens, businesses, communities and local governments of Burke 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 Burke 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 True Citizen
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](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/subject/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>
National Climatic Data Center www.ncdc.noaa.gov
SHELDUS™ | Spatial Hazard Events and Losses Database for the United States
<https://sheldus.asu.edu/SHELDUS/>
National Inventory of Dams <http://crunch.tec.army.mil/nid/webpages/nid.cfm>
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/subject/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
Burke County, Girard, Keysville, Midville, Sardis, Vidette, and Waynesboro
Burke County Board of Education
Burke County Hospital
Burke 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 H – 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