CHEROKEE COUNTY
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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CHEROKEE COUNTY NATURAL HAZARD MITIGATION PLAN

Section 1 PLANNING PROCESS

1.1 Introduction

The Cherokee County Natural Hazard Mitigation Plan was developed to reduce the human suffering and economic costs of natural disasters in Cherokee County, City of Gaffney and the Town of Blacksburg. The plan was compiled by the Cherokee County Natural Hazard Mitigation Plan Committee, with Emergency Management as lead, in accordance with the requirements of the Federal Emergency Management Agency (FEMA) Section 322 local hazard mitigation planning regulations, as is required by the Federal Emergency Management Agency (FEMA).

Additional guidance documents were provided by FEMA and the South Carolina Emergency Management Division. The plan describes and documents the process used to develop the plan. This includes how it was prepared and who was involved in the process, including participation by local governments. It also describes the time period in which the plan was prepared.

Opportunities for comment on the Natural Hazard Mitigation Plan have been made available for the public, agencies, businesses, academia, and other private and public interests. After formal review of the plan by the South Carolina Emergency Management Division and FEMA, and after having received the "approvable pending adoption" status from FEMA, the Natural Hazard Mitigation Plan Committee will bring the plan to the public for final comment and local leadership for formal adoption.

1.2 Disaster Mitigation Act of 2000

The Natural Hazard Mitigation Plan (2005) adopted by Cherokee County was written as a regional plan by the Appalachian Council of Governments as a response to the passage of the Disaster Mitigation Act of 2000 (DMA2K). On October 30, 2000, DMA2K was signed into law by the U.S. Congress in an attempt to stem the losses from disasters, reduce future public and private expenditures, and to speed up response and recovery from disasters. This act (Public Law 106-390) amended the Robert T. Stafford Relief and Emergency Assistance Act. The following is a summary of the parts of DMA2K that pertain to local governments:

* The act establishes a new requirement for local governments to prepare FEMA through the Pre-Disaster Mitigation Assistance Program and Hazard Mitigation Grant Program.
* The act establishes a requirement that natural hazards such as tornadoes, floods, and wildfires, need to be addressed in the risk assessment and vulnerability analysis parts of the Hazard Mitigation Plan.
* The Act authorizes up to seven percent of Hazard Mitigation Grant Program funds available to a state after a federal disaster to be used for development of state, local and tribal organization All Hazard Mitigation Plans.
* The Act establishes November 1, 2004 as the date by which local

governments and tribal organizations are to prepare and adopt their respective plans in order to be eligible for the FEMA Hazard Mitigation Grant Program and November 1, 2003 for the Pre-Disaster Mitigation Program.

This Natural Hazard Mitigation Plan was developed for Cherokee County and the two municipalities of the City of Gaffney and the Town of Blacksburg which are contained within county boundaries.

1.3 Parts of the Plan

The plan is divided into five sections to address FEMA requirements for a local mitigation plan. The five sections are:

- Section 1 – Planning Process
- Section 2 – Planning Area
- Section 3 – Risk Assessment
- Section 4 – Mitigation Strategy
- Section 5 – Plan Maintenance and Adoption Process

1.4 Planning Process

Cherokee County's Emergency Management Office took the lead in the Hazard Mitigation Plan re-write and update process by notifying local Government Officials, along with key agencies that the current Natural Hazard Mitigation Plan would expire on September 26, 2011. Initially written as a regional plan by Appalachian Council of Governments, it was agreed to rewrite it as a local plan to address mitigation issues of Cherokee County, City of Gaffney and Town of Blacksburg only. During this correspondence, invitations were issued to serve or appoint a representative to serve on the Natural Hazard Mitigation Plan Planning Committee.

TABLE 1 – Natural Hazard Mitigation Plan Committee

Member	Representation
Josh Parker	Cherokee County Fire Chief's Assoc.
Mike Teague	Public Works, City of Gaffney
Elliott Hughes	Broad River Electric Cooperative
Mitch Stewart	UCMC Emergency Medical Service
Chuck Bobo	Building & Fire Safety, Cherokee County
James Blanton	Public Works, Cherokee County
Rick Peterson	Cher. Co. Emergency Management
Beverly Carver	Cher. Co. Emergency Management
Rob Weaver	Cher. County Tax Assessor
Bill Moore	Mapper, Cher. Co. Tax Assessor

The initial kick off meeting of the Natural Hazard Mitigation Plan was held on March 3, 2011 at the Cherokee County Emergency Operations Center. There were no new jurisdictions participating in this plan, or any in the last plan that did not participate. The committee held follow up meetings also. See Appendix 1 for attendance sign-in sheets.

1.5 Involvement from Local Governments

TABLE 2: (PARTICIPATION BY JURISDITION)

JURISDICTION	ATTENDED MEETINGS	RETURNED SURVEYS	PROVIDED DRAFT PLAN COMMENTS
City of Gaffney	x	x	x
Town of Blacksburg	**x**	**x**	**x**
Cherokee County	**x**	**x**	**x**

Changes from the Last Plan

At the time of this 2022 plan update, Cherokee County is experiencing a world-wide health emergency due to the COVID-19 pandemic. Public meetings were held in person but committee meetings were held virtually utilizing Microsoft Teams. Information exchange by emails and phone were also important venues of information exchange. All jurisdictions participated by and / or attending meetings, providing draft plan comments or distributing & returning public surveys.

Due to retirements and changes in represented departments, the following persons made up the Hazard Mitigation Committee for the 2022 Plan update:

1a: 2022 MULTI- JURISDICTION SUMMARY SHEET

Jurisdiction Name	Juris-diction Type	Point of Contact	Department	Position / Title	Mailing Address
Gaffney	**City**	**Jamie Caggiano**	**Gaffney Fire Department**	**Chief**	**205 N. Limestone Street, Gaffney, S.C. 29340**
Blacksburg	**Town**	**Dalton Pierce**	**Admini-stration**	**Administr ator**	**P.O. Box 487 Blacksburg, S.C. 29702**
Cherokee County	**County**	**Dale Gibert**	**Building Safety**	**Building Official**	**110 Railroad Avenue, Gaffney S.C. 29340**
		Alan Peeler	**GIS / Mapping**	**Supervisor**	
		Brian Hamrick	**GIS / Mapping**	**Mapper II**	
		Robert Weaver	**Assessor's Office**	**Assessor**	
Gaffney, Blacksburg, Cherokee		**Steven Ellis**	**SC DOT**	**Supervisor**	**1868 Old Georgia Hwy., Gaffney, S.C. 29340**

Cherokee Blacksburg	**County Town**	**Josh Parker**	**Buffalo Volunteer Fire Department**	**Chief**	**Blackwell Road, Blacksburg, S.C.29702**
Gaffney Blacksburg Cherokee	**City Town County**	**Beverly Carver**	**Cherokee County Emergency Management**	**Administra-tive Assistant**	**1434 North Limestone Street, Gaffney, S.C. 29340**

1a, Part II: 2022 MULTI-JURISDICTION SUMMARY SHEET

Requirements Met (Y / N) *=HHPD						
	A Planning Process	**B Hazard Identification & Risk Assessment**	**C Mitigation Strategy**	**D Plan Review, Evaluation & Implementation**	**E. Plan Adoption**	**F. State Requirements**
Jamie Caggiano	**Y**	**Y**	**Y**	**Y**		
Dalton Pierce	**Y**	**Y**	**Y**	**Y**		
Dale Gibert	**Y**	**Y**	**Y**	**Y**		
Alan Peeler	**Y**	**Y**	**Y**	**Y**		
Brian Hamrick	**Y**	**Y**	**Y**	**Y**		
Robert Weaver	**Y**	**Y**	**Y**	**Y**		
Steven Ellis	**Y**	**Y**	**Y**	**Y**		
Josh Parker	**Y**	**Y**	**Y**	**Y**		
Beverly Carver	**Y**	**Y**	**Y**	**Y**		

The initial kick off meeting was held on November 16, 2021 virtually. There were no new jurisdictions participating in this plan, or any in the last plan that did not participate. Follow up meetings were also conducted. See Appendix 1a for attendance records.

1.6 **Public Participation**

To encourage public involvement from agencies, businesses, academia non- profits and other interested parties to get involved, a public hearing was held on March 21, 2011 at 5 P.M. in Cherokee County Council chambers. It was held during the regularly scheduled County Council Meeting to reach a larger audience. The public hearing was

advertised five days in advance in The Gaffney Ledger, The Cherokee Chronicle and The Blacksburg Times. All three papers are distributed county- wide. The notice contained the date, time, place and purpose of this meeting. Refer to Appendix 2 for a copy of the advertised notice.

Rick Peterson (Director, Cherokee County Emergency Management) represented the Natural Hazard Mitigation Plan Committee as speaker. He explained the need to update / rewrite the plan, as well as the updating process. At the conclusion, he asked the public for any comments or questions concerning hazard mitigation. No comments were received or questions asked. 41 people attended (this total excludes Council members and staff). Refer to Appendix 3 for copy of sign-in sheet and minutes

To solicit additional public input, a Community Survey was created by the Natural Hazard Mitigation Plan Committee and distributed electronically and by hand. Our return rate for the surveys was 11%. Refer to Appendix 4 for a copy of the survey.

Changes from the Last Plan

To encourage public involvement from agencies, businesses, academia, non-profits and other interested parties, a public hearing was held on December 20, 2021 at 5 p.m. in Cherokee County Council Chambers during the regularly scheduled County Council Meeting to reach a larger audience. The public hearing was advertised in The Gaffney Ledger and The Cherokee Chronicle, local newspapers that are distributed County-wide. The notices contained the date, time, place and purpose of the meeting. Refer to Appendix 2a for a copy of the advertised notices. Josh Parker and Beverly Carver attended the meeting to represent the Natural Hazard Mitigation Plan Committee. No one was present to address the Hazard Mitigation Plan.

To solicit additional public input, the Community Survey used in the last update was reviewed / updated and distributed electronically and by hand. The survey was also placed on the Cherokee County website. Surveys were returned for all municipalities. Refer to Appendix 4a for a copy of the revised survey and compiled results received.

1.7 Review of Existing Information

Emergency Management personnel began a preliminary review of existing plans, reports, and information prior to the kick off meeting. This served to verify data pertinent to Cherokee County, City of Gaffney, and Town of Blacksburg, which were included in the original Appalachian Regional Natural Hazard Mitigation Plan and to document any changes or updates to existing information. Each jurisdiction's hazards, risks and vulnerabilities were then reassessed by reviewing reports of past hazards, inventorying any new assets and estimating potential losses which could result from them. The following list of sources and plans were accessed and / or reviewed during the process:

- Cherokee County Emergency Operations Plan
- 2004 Cherokee County Comprehensive Plan
- Appalachian Region Natural Hazard Mitigation Plan
- South Carolina Hazard Mitigation Plan
- Wayne County Hazard Mitigation Plan
- Arbor County Hazard Mitigation Plan
- FEMA Mitigation "How to" Guides
- South Carolina Forestry Commission

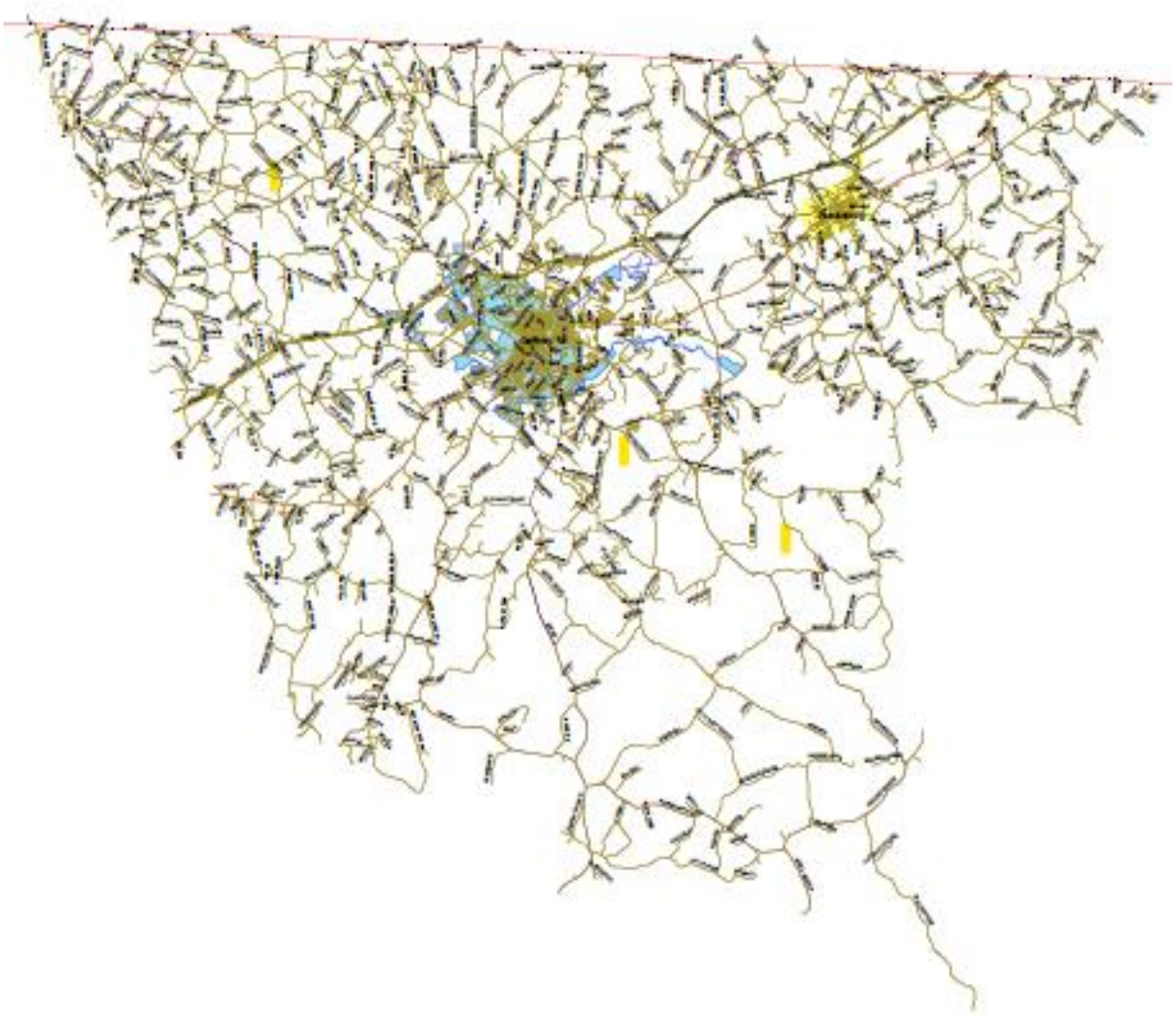
- U.S. Census Bureau
- Hazard & Vulnerability Research Institute (University of South Carolina)
- www.Wikipedia.com
- www.city-data.com
- www.nationalregister.sc.gov
- Cherokee County S.C. (EPODUNK)
- Cherokee County Chamber of Commerce
- SCIWAYS
- NCDC) National Climatic Data Center
- (DNR) Department of Natural Resources
- Earthquake.usgs.gov
- Spatial Hazard Events & Losses Database for the United States (SHELDUS)

All of the listed plans, studies, and data sources were incorporated into the Cherokee County Natural Hazard Mitigation Plan. These sources developed the plan's hazard risk, and vulnerability assessment sections that in return led to the establishment of meaningful mitigation actions.

Changes from the Last Plan

Emergency Management began a preliminary review of existing plan information for updates and new additions. Two additional hazards were added to the plan, heat & wind.

SECTION 2 PLANNING AREA
TABLE 3 - CHEROKEE COUNTY JURISDICTIONS MAP
(Cherokee County GIS)



Gaffney – Located in middle of county (Blue)
Blacksburg – Located on right of map (Yellow)

2.1 General Geography

The City of Gaffney, which is located at latitude 35.071N and longitude -81.65W, is the county seat. Founded in 1872 by its founding forefather Michael Gaffney, this area is composed of 7.86 square miles, of which 0.04 is square miles of water. According to the 2000 census, there were 12,968 people, 5,304 households and 3,336 families residing in the city. Population density was 1,649.7 people per a square mile.

Newly released 2010 census data shows the population to have dropped to 12,414. (In combination with one or more of the other races listed. The six numbers may add to more than the population and six percentages may add to more than 110% because individuals may report more than 1 race.

TABLE 4 – City of Gaffney Racial Makeup

White	6,214
Black	5673
American Indian	31
Asian	108
Pacific Islander	11
Other Race	180
Two or More	197
Hispanic	381
Total Population	**12,795**

TABLE 4a- City of Gaffney Racial Makeup (2022)

White	6,409
Black	5,618
American Indian	37
Asian	25
Pacific Islander	0
Other Race	182
Two or More	452
Total Population	**12,723**

Changes from the Last Plan

2020 Census data indicated the population of Gaffney has experienced a slight population decrease to 12,723 individuals. The following increases were seen: the white race increased by 195, American Indian increase by 6, Other Race increased by 2, and the greatest increase was seen in the 2 or more races categories of 255. A decrease of 55 was seen in Blacks, 83 in Asians, and 11 of Pacific Islander. The overall population for Gaffney is 12,723, which is an overall decrease of 72 people.

The **Town of Blacksburg**, located at latitude 35.100616 and longitude 81.470938, was originally named Stark's Folly but received a name change in 1888 in honor of Mr. John G. Black and became Blacksburg. In 1890, the town received the name, "Iron City" from the large amounts of iron ore, which were discovered there. The town consists of 1.9 square miles of land, and according to the 2000 U.S. Census had a population of 1,880 people, and 785 households, with a median income of $35,208. Population density was 1,018.8 people per square mile. 2010 Census data shows that the total population dropped to 1,848 people. Refer to Table 5 for racial makeup.

TABLE 5 Town of Blacksburg Racial Makeup

Black	519
American Indian	6
White	1286
Asian	15
Pacific Islander	0
Two or More	46
Hispanic	17
Total Population	**1,890**

(In combination with one or more of the other races listed. The six numbers may add to more than the population and six percentages may add to more than 100% because individuals may report more than one race).

TABLE 5a –Town of Blacksburg Racial Makeup, 2022

Black	520
American Indian	6
White	1349
Asian	14
Pacific Islander	16
Two or More	33
Hispanic	0
Total Population	**1,888**

Changes from the Last Plan

With the 2020 census, Blacksburg's population decreased by 2 individuals. (1,888). Increases were seen in the following categories: White 63, Blacks 1, and Pacific Islander 16. Decreases were seen in the categories of Asian 1, 2 or more races 13, and Hispanic 17. Medium Income has experienced a decrease to $19,219, while number of households remained the same at 785.

Cherokee County, named for the Cherokee Indians which once made it their home, sits in the foothills of the Blue Ridge Mountains. Formed in 1897 from parts of York, Union, and Spartanburg counties, the county is comprised of 397 square miles, of which, 393 square miles is land and 5 square miles of it is water. Cherokee County is predominantly rural characterized by undeveloped land, pine forest, agriculture, and sparsely populated residential areas. The more urbanized areas include the incorporated jurisdictions of The City of Gaffney and Town of Blacksburg and adjacent lands. Recently, some rapid commercial/industrial growth has appeared along the I-85 Corridor, and residential development have sprung up in areas north of I-85 near Cherokee National Golf Club and in other select locations. Additionally, growth has occurred on the SC 11 corridor and the City of Chesnee has annexed into Cherokee County. For further analysis of the county's land use, the county is divided into four planning areas, as depicted in the next few paragraphs.

Northwest Sector

The Northwest Sector is perhaps the most dynamic sector of Cherokee County in terms of land use and development. Interstate-85 forms it's southern border while North Carolina forms its northern edge; to the west, Spartanburg County; to the east, the Broad River. Combining large tracts of agricultural lands—peaches and dairy among them, with a rapidly growing suburban residential pattern, the Northwest Sector shows signs of potential urban/rural conflict. The area north of the interstate, centered around Cherokee National Golf Club, has developed five single family residential subdivisions in the past few years. This portion of the county is experiencing the largest demand for residential development.

However, the Northwest Sector remains largely undeveloped and agricultural. Large tracts, including the area between SC Hwy 150 and the Broad River and an area between SC Hwy 11 and the Interstate, have not yet felt the demands of residential growth. Anticipated population growth has indicated that those rural areas in the Northwest Sector will soon feel some pressure for development.

The Northwest Sector is also characterized by its scenic and recreational amenities. There are five noteworthy amenities in the Northwest Sector which can enhance the quality of life of Cherokee County citizens: Scenic Highway 11, Cherokee National Golf Club, Cowpens National Battlefield Park, Lake Whelchel and last but not least-The Peachoid, Cherokee County's nationally recognized landmark and centerpiece of the annual Peach Festival.

Commercial and industrial uses in the Northwest Sector are generally clustered in nodes created by Interstate 85 interchanges. Significant growth on the Interstate 85 portion of this section is apparent as new interchanges and road widening projects at SC 105 and SC 11 are occurring. The Outlet Mall at Interstate 85 and new Ingles on SC11 are recent examples of the commercial growth in this sector. This sector has experienced the majority of the county's growth over the last ten years. A fairly large portion of the land directly north and adjacent to I-85 is undeveloped and may be compatible for either commercial or industrial development.

Changes from the Last Plan

- In February 2018, Kapstone Paper and Packaging Corp. and Home Fashions International announced a $6 Million investment in new equipment in its Cowpens, S.C. facility. This equipment will increase speed, efficiency and quality of its products.

- In May 2021. Kerns Trucking, Inc. a regional transportation and logistics company announced that it will invest $7.9 million to establish its corporate headquarters in Cherokee County. The new facility will increase the company's capacity to meet growing demands and create 136 new jobs. The facility is expected to be completed in late 2022.

With the changes in the Northwest Sector, disasters occurring here would present with higher damage costs and with a greater concentration of population in the area, injuries and deaths could be higher.

Northeast Sector

The Northeast Sector comprises the entire portion of Cherokee County northeast of the Broad River—the area that surrounds the Town of Blacksburg. The Northeast Sector is largely rural and undeveloped, characterized by large forested and agricultural tracts. Although undeveloped at present, development potential for this area will increase upon the completion of the SC5 widening project. When the upgrade is completed, travelers will have a multi-lane alternative route to Charlotte, NC, via York, SC.

Interspersed throughout the countryside are sparse residential enclaves with small single- family homes and a substantial number of manufactured homes, including mobile homes and newer modular homes. Residential uses are for the most part extremely low density, single lot, and single family oriented. Two newer subdivisions exist, in addition to at least seven manufactured housing rural parks. US Highway 29 and interchanges around the interstate north of Blacksburg contain most of the unincorporated commercial and industrial uses. The commercial nodes in this portion of the county are mainly comprised of gas and convenience retail uses.

The Northeastern Sector is home to one of the Upstate' s most historic sites—Kings Mountain National Military Park. Kings Mountain is the site of a Revolutionary War battle and is currently a well visited recreational area. The Broad River is this area's other important amenity. Many Cherokee citizens utilize this river for a variety of recreational uses such as boating, canoeing, and fishing. This sector is also home to a former quarry/converted lake that has a natural spring water source. The County and Town of Blacksburg are studying this site as a potential alternative water source.

Changes from the Last Plan

In the last five years, the greatest growth increase has occurred in the Northeastern Sector.

- In 2018, China based Green Tech solution announced it would open a $75 million recycling facility with 200 jobs in Blacksburg
- Milliken broke ground in May 2019 on an expansion of its Allen Plant in Blacksburg, the company's largest specialty chemical plant. The expansion will create dozens of new jobs, from skilled manufacturing positions to research chemists, chemical engineers, marketing and sales. The expanded facility will boost production of a clarifying product used in food storage containers.

This growth increases the population concentration in the Northeastern sector which could present with higher injury / death numbers during disasters in the area. Allen Plant, a chemical plant, could also increase the need for additional hazard materials equipment.

Central Sector

The most urbanized planning area in Cherokee County is the Central Sector. This area essentially surrounds the City of Gaffney. Again, though highly urbanized in some location, portions of the Central Sector are still rural, and there are large tracts of agricultural land.

The Central Sector contains the only truly highly concentrated commercial and industrial clusters in the county—particularly along US Hwy, 29, SC11, and SC Hwy. 18.

In fact, land uses are more mixed along US Hwy 29 than anywhere else in the county. From the Gaffney City boundary to the Spartanburg County line are a variety of uses-including industrial (Timken and Stouffers), convenience commercial, single family residential, a rail line, and a substantial number of manufactured homes on singe tracts as well as in dense mobile home clusters.

Changes from the Last Plan

In June 2021, Nestle USA, a leading food and beverage company, unveiled plans to expand operation in Cherokee County. The $100 million investment will create approximately 160 new jobs. The expanded operation would increase the population concentrations in this area and present with a higher injury / death toll in this area.

Cherokee County has built a recreational sports complex in the Central Sector, west of Gaffney, and the Gaffney Country Club is also located in this sector. Other amenities associated with this part of the county are retail and other services associated with the urban center of Gaffney. The City of Gaffney offers a wide variety of amenities, including county government offices, movie theaters, restaurants, shopping and higher education facilities (Limestone College).

The expansion for Nestle would increase the population concentrations in this area and could present with a higher injury / death toll in this area.

Southern Sector

The Southern Sector of Cherokee County is the most undeveloped and rural area. Agricultural uses dominate the landscape, especially along SC Hwy. 211 in the most southern portion of the county. Most residential uses are located in the western portion of the planning sector, between SC Hwy. 150 and the Spartanburg county line. Residential uses are predominantly single family, with a mixing of both small homes and manufactured housing. Older mobile homes are in great evidence. And one newer subdivision has been developed between Hwy. 18 and Hwy. 105.

The Southern Sector contains no noticeable commercial or industrial nodes, and in fact contains very few commercial or industrial uses at all. There are also very few recreational areas. However, the beauty of this particular rural landscape should not be overlooked. The agricultural character includes large horse farms, dairy and other land intensive uses. This part of the county is the least populated with large expansive undeveloped forested areas.

According to the 2000 Census, the population for Cherokee county was 52,537 and contained 20,495 households with and average size of 2.53. There were 14,612 families residing within the county with and average size of 3.01. Median income for a family was $39, 393. Population Density was 133.7 people per square mile. 2010 newly released data by the U.S. Census Bureau, advanced the County populations to 55,342.

TABLE 6 – Racial Makeup, Cherokee County

White	41,525
Black	11,278
Native American	199
Asian	313

Pacific Islander	17
Other Races	1223
2 or More Races	787
TOTAL POPULATION	**55,342**

(In combination with one or more of the other races listed. The six numbers may add up to more than the total population and the six percentages may add up to more than 100% because individuals may report more than 1 race**)** 2000 & 2020 U.S. Census figures were used in this plan unless noted elsewhere.

TABLE 6a – Racial Makeup, Cherokee County, 2022

White	42,949
Black	11,580
Native American	281
Asian	337
Pacific Islander	56
Other Races	2,586
2 or More Races	956
TOTAL POPULATION	**58,745**

Changes from the Last Plan

According to new 2020 Census information, Cherokee County had a population increase of 3,679 individuals. Racial Makeup increases were seen in every category. Whites 1,424, Blacks 302, Native American 82, Asian 24, Pacific Islander 69, Other races 1,363. The number of households increased by 4,354 (24,849 total) but the size of the average family decreased to 2.71. Medium income decreased by $2,510. The 2020 average of people per square mile was 140.9, an increase of 7.2 persons from 2010. The increase per square mile presents with a potentially higher injury/death toll during disasters.

Civil Divisions

Cherokee County is governed by a Council – Administrator form of government, while Gaffney's government infrastructure consists of a mayor, administrator, and city council. Blacksburg has a local government consisting of a mayor, administrator, and town council.

2.2 Transportation

Roadways

Cherokee County is mainly defined by Interstate 85, which cuts directly through it for twenty miles. Along the route there are eight interchanges that link the two US Highways, ten SC primary routes, numerous state secondary and county roads. US 29 which parallels I-85 is used mostly for local traffic. SC highways 11, 150, and 18 serve the Gaffney area, while SC highway 5 serves the Blacksburg area**.**

Changes from the Last Plan

A new $430 million I-85 widening project was started in August of 2019. The 20-mile project will widen the interstate from 4 to 6 lanes through its entire length in the county and include the reconstruction of several interchanges and the replacement of a bridge near the Auriga Polymers plant. The project is projected to be completed in 2023. This expansion will increase the traffic volume on the interstate, thereby presenting a greater chance of accidents, increases of hazardous materials being transported through the county and a higher number of individuals that could be affected by a disaster (tornados, winter storms, high wind, etc.).

Railways

Norfolk Southern Railway's dual-track line passes through Gaffney and Blacksburg as it crosses Cherokee County. The line runs parallel to US Hwy. 29. In Gaffney there is rail service that connects area businesses with several spurs along this route. Another branch off the main line in Blacksburg provides access to Cherokee Falls. A north/south line, running roughly parallel to SC Hwy. 5, passes through Blacksburg connecting Shelby, NC and York, SC.

2.3 Emergency Services and Facilities

Public emergency services are an important resource to hazard mitigation planning because these services will have direct involvement in a hazard event.

Police

Gaffney and Blacksburg each have their own police departments that patrol the incorporated city limits. The Cherokee County Sheriff's Department, covers the unincorporated areas in the county. The Cherokee County Law Enforcement Center is located in the City of Gaffney. The South Carolina Highway Patrol also has an office in Gaffney.

Fire

Gaffney City fire department serves Gaffney, while Blacksburg VFD serves the Town of Blacksburg. There are an additional eleven fire departments distributed through-out the county. Fire services in Cherokee County are provided on a volunteer basis with the exception of Gaffney Fire Department's main station and three sub stations which are the only paid departments in the county.

EMS

Upstate Carolina's Emergency Medical Service (a division of Ambu-Star) provides the majority of ambulance services to the citizens of Cherokee County, however there is an additional ambulance service located within Cherokee county boundaries, American Transmed. All fire departments provide personnel trained to First Responder level to assist EMS with prompt first aid in each of their fire districts also.

Changes from the Last Plan

In August 2019, Lifeguard Ambulance Service signed an agreement to provide Emergency Medical Services to the citizens of Cherokee County. Two additional EMS

agencies, Upstate Carolina's Emergency Medical Service (a division of Ambu-Star) and American Transmed also provide ambulance and transport services in Cherokee County. This increases the additional resources in the county.

To coordinate these services and other county resources, Cherokee County created an Emergency Operations Plan. Updated annually, the EOP provides general steps of action and chain of command for the County and municipal emergency response personnel when responding to various disasters.

2.4 Parks

Parks are susceptible to high winds, heavy precipitation, ice and surface water contamination due to a variety of hazards.

Cherokee County is unique in that it is the only county have three National Parks located within county boundaries. These are the Overmountain Victory National Historic Trail (which follows the path of major victories of American troops during Revolutionary War which spans South Carolina, North Carolina, Virginia, and Tennessee.) Kings Mountain National Military Park, and Cowpens National Battlefield. There are also additional 20 parks/sports complexes within the County and Municipalities. See Chart 7 below.

TABLE 7 - CHEROKEE COUNTY RECREATION & PARKS LOCATIONS (courtesy of Cherokee County Parks & Recreation District)

Name	Address	Municipality
J. Lowry Love Football Field	533 Twin Lakes Road	County
Commissioners Field	538 Twin Lakes Road	County
Babe Ruth Field	553 Twin Lakes Road	County
Irene Skate Park	310 W. Montgomery St.	Gaffney
Thomson Park	601 S. Limestone St.	County
Frederick Street/Skate Park	198 Willow Street	County
Mayberry Park	1410 Old Georgia Hwy.	Gaffney
South Johnson Street	906 S. Johnson Street	County
Old Ford Road Complex	771 Ford Road	County
Park Place	603 Lyman Street	County
Youth Sports Complex	230 Midway Road	County
McCluney Park	510 Granite Drive	Gaffney
Azell Robbs Park	203 Gaffney Avenue	Gaffney
Fuller Field	550 Twin Lakes Road	County
Troublefield	413 W. Pine Street	Blacksburg
Blacksburg Youth Baseball Field	310 E. Lime Street	Blacksburg
Hershell Porter Park	820 W. Lime Street	Blacksburg
Blacksburg Playground	302 W. Clairborne St.	Blacksburg
Blacksburg Football Practice	200 Hill Street	Blacksburg
Silas Steps Playground	121 Public Works Dr.	County

Changes from the Last Plan

Irene Park has been developed into a Skate Park, the first in the county. Silas Steps Playground was opened in July 2021. It is the first fully accessible playground where children with and without disabilities can play alongside each other. This addition could result in a higher number of injuries / deaths, in a concentrated area during a disaster and an increased need for specialized resources and considerations during response.

With the population changes of individuals traveling through, playing and working in the county, since the 2016 plan update, it is evident that injury and death tolls could be higher during disasters and additional resources could be needed. The cost of disasters could be much higher, as well.

Future mitigation and planning efforts should be focused on awareness of these changes.

2.5 National Registry & Historic District Properties (www.nationalregister.sc.gov)

The Gaffney Commercial Historic District (map courtesy of Cherokee County Tax Assessor's Office) consists of a total of sixty-seven resources, with forty-one contributing resources, located in downtown Gaffney. Most of the buildings were built after 1900 and before 1930 and retain their historic character. The buildings in the district are primarily commercial buildings in vernacular commercial interpretations of the Italianate, Romanesque Revival, Renaissance Revival, Art Deco, and Neo-Classical styles of the turn of the century. A number are notable for their excellent detailing and craftsmanship. All of the buildings are of brick construction and vary from one to four stories in height.

The downtown area, which continues to be a center of Gaffney commerce, retains much of its early twentieth century character. The Commercial District encompasses a three-block area which has been the commercial center of the city since ca. 1875. This area evolved as the primary business center of Gaffney due to the proximity of the railroad and depot. Listed in the National Register March 27, 1986.

The Gaffney Residential Historic District (map courtesy of the Cherokee County Tax Assessor's Office) contains 111 contributing resources in an 18-block area. Although some infill construction has taken place in the past 50 years, the majority of the resources were built between ca. 1890 and ca 1930. Most of these resources are houses sited on large urban lots and oriented towards wide, tree-lined streets. Homes are generally of frame or brink construction with fine examples of the Queen Anne, Colonial Revival, Neo-Classical, Victorian and Bungalow styles as well as traditional vermicular forms. The majority of the buildings have been well maintained and the district basically retains its early twentieth century character. The residential historic district is the largest concentration of historic residential architecture remaining in Gaffney. Included in the district are homes of textile mill executives, merchants and other professionals who lived in Gaffney during its boom period at the turn of the century. Listed in the National Register March 27, 1986.

The Limestone Springs Historic District (map courtesy of the Cherokee County Tax Assessor's Office) includes ten buildings and one site associated with Limestone College and the community of Limestone Springs. The district is a significant collection of properties reflecting the history of the area in the nineteenth and early twentieth centuries as a popular resort, as a center of lime production, and as a center of female education. The focal point of the district is the historic section of Limestone College campus, which contains nine buildings constructed between ca. 1837 and 1941. The buildings on the campus are oriented towards a central lawn and fountain. The buildings are classically inspired and include architectural styles such as Gothic Revival and Neo-Classical and also a meeting house form of church.

Also included in the district is a limestone quarry that was mined in the nineteenth and early twentieth century and a mid-nineteenth century church building. The limestone quarry is located adjacent to the historic section of the campus and the Limestone Springs Baptist Church is adjacent to the quarry. Listed in the National Register May 27, 1986.

TABLE 8 – ADDITIONAL HISTORIC PROPERTIES (www.national register.sc.gov)

NAME	JURISDICTION	DATE ADDED
Cowpens National Battlefield	County	10/15/66
Coopersville Ironworks Site Susan Furnace Site	County	11/13/76
Winnie Davis Hall	Gaffney	7/29/77
Archaeological Site 38CK1	County	12/10/80
Archaeological Site 38CK44	County	12/10/80
Archaeological Site 38CK45	County	12/10/80
Irene Mill Finishing Plant	Gaffney	3/27/86
Jefferies House	Gaffney	3/27/86
Settlemyer House	Gaffney	3/27/86
Cowpens Furnace Site	County	5/8/87
Ellen Furnace Site		5/8/87
King's Creek Furnace Site	County	5/8/87
Nesbitt's Limestone Quarry	County	5/8/87
Thicketty Mountain Ore Pits	County	5/8/87
Zeno Hicks House	County	2/9/89

Carnegie Free Library	Gaffney	6/2/00
Magness-Humphries House	County	10/20/01
Nuckolls-Jefferies House	County	4/18/07
Kings Mountain State Park Historic District		

2.6 Critical Community Facilities

Critical Community facilities are of particular importance in hazard mitigation planning for a number of reasons. These types of facilities can house large numbers of people and are also important to the day-to-day function of a community; therefore, they are vulnerable to damages caused by hazards. Those same facilities may also be needed to provide shelter or medical care during a hazard event. For example, hospitals are needed to treat people who have been injured in a hazard event. Likewise, if a hospital were to be hit by a tornado, patients and staff would be in danger, and millions of dollars' worth of medical equipment could be lost or damaged. See Table 9 below.

TABLE 9 – Critical Community Facilities (* Denotes Shelters)

NAME	JURIDICTION	SPECIFIC VULNERABILITY
Gaffney City Hall	Gaffney	
Gaffney Police Dept.	Gaffney	
Gaffney Fire Dept.	Gaffney	
Overbrook Fire Substation	Gaffney	
East Gaffney Fire Substation	Gaffney	
Cher. County. Public Library	Gaffney	
Cherokee Medical Center	Gaffney	
Lifeguard Ambulance Service	Gaffney	
*First Baptist Church	Gaffney	
*Cherokee Avenue Baptist Church	Gaffney	
*Gaffney High School	Gaffney	
Blacksburg Town Hall	Blacksburg	
Blacksburg Police Dept.	Blacksburg	
*Broad River Baptist Church	Blacksburg	
*Voice of Triumph Worship	Blacksburg	
*Blacksburg Elementary Sch.	Blacksburg	
*Blacksburg High School	Blacksburg	
Blacksburg Library	Blacksburg	
County Administration Bldg.	Gaffney	
Cher. County Courthouse	Gaffney	
Cher. Co. Sheriff's Office	Gaffney	
Macedonia Vol. Fire Dept.	County	
Twin Rivers Vol. Fire Dept.	County	
Grassy Pond Vol. Fire Dept.	County	
Cherokee Creek V.F.D.	County	

Corinth Vol. Fire Dept.	County	
Antioch Vol. Fire Dept.	County	
C.K.C. Vol. Fire Dept.	County	
Goucher-White Plains V.F.D.	County	
Asbury-Rehoboth V.F.D.	County	
Buffalo Vol. Fire Dept.	County	
D.M.W. Vol. Fire Dept.	County	
*Corinth Baptist Church	County	
*Grassy Pond Elem. School	County	
*Grassy Pond Baptist Church	County	
*Providence Baptist Church	County	
*Southside Bap. Ch. Life Ctr.	Gaffney	
*Midway Bap. Ch. Life Ctr.	County	
B.D. Lee Elem. School	Gaffney	
Blacksburg Primary	Blacksburg	
Draytonville Elem. School	County	
Limestone Central Elem Sch.	County	
Luther- Vaughan Elem. Sch.	County	
Northwest Elementary Sch.	County	
Ewing Middle School	County	
Blacksburg Middle School	Blacksburg	
Gaffney Middle School	Gaffney	
Alter. Education Program	County	
Cherokee. County Emergency Operations Center	Gaffney	
Cher. Co. Detention Center	Gaffney	
Cher. Co Communications	Gaffney	

Changes from the Last Plan

Lifeguard Ambulance Service is the new EMS provider in the county. Blacksburg Public Library was omitted during the 2016 Update. Alma, Goucher and Mary Bramlett Elementary Schools were closed and have been removed from the Critical Community Facilities list.

Section 3 RISK ASSESSMENT

Risk assessment is the process of measuring the potential loss of life, personal injury, economic injury, and property damage resulting from natural or man-made hazards.

The first step in the risk assessment process was to update each of the hazards that can occur within Cherokee County, City of Gaffney and Town of Blacksburg. This was accomplished by referring to the lists found in the current Appalachian Regional Hazard Mitigation Plan, and the South Carolina Hazard Mitigation Plan and then reviewing updated statistics from various sources (i.e. NOAH, Hazard & Vulnerability Research Institute (University of South Carolina), and (NCDC) National Climatic Data Center), and gathering information from county and municipal employees and representatives. Hazard

locations were listed from these sources. The findings from these steps, along with input from community surveys were utilized to determine the priority hazards of the county and its municipalities, which will become the focus of the mitigation strategies developed in the remainder of this plan.

3.1 Hazard Identification and Prioritization

It is important to understand the types of hazards that have affected or have the potential to affect Cherokee County, City of Gaffney, and Town of Blacksburg. The extent of the hazard and its future probability are also important to take into consideration when preparing for an event. Hazards which have been identified as having the potential to affect this area are:

1. Tornadoes
2. Winter Storms
3. Flood
4. Hurricanes
5. Hail
6. Heat & Drought
7. Earthquakes
8. Wildfires
9. Wind

Changes from the Last Plan

Heat and wind were added to the hazard list during this update.

When addressing each hazard, the type, location and extent of each is discussed, as well as the probability of future occurrences.

Type: A brief description is provided for each hazard addressed in this section.

Location: The location of past events is mapped or listed in this section.

Extent: The effect and impact of past events is examined in this section for each hazard types.

Probability: To determine the probability of a natural hazard event, the number of events, total number of years those events have been recorded, and annual average number of events must be determined. The recurrence interval is also helpful in portraying how common a certain type of hazard is. Dividing the number of years by the number of events produces the recurrence interval, or how often the event will occur (Years).

A tornado is a "violently rotating column of air extending from a thunderstorm to the ground" (NOAA). Tornadoes can be extremely violent storms that have relatively low wind speeds (less than 73 miles per hour) to very high wind speeds in excess of 300 miles per hour. In the South, tornadoes touch down most frequently during the months of March and May. The Fujita Tornado Scale (with enhanced wind speeds inserted) provides us with an idea of the wind speeds, strength and extent of damages of tornadoes that can occur in Cherokee County. See Table 10 below. Table 10a is the Enhanced

Fujita Tornado Scale and compares the wind speeds in the Fujita Tornado Scale to the ones in the newer Enhanced Fujita Tornado Scale.

TABLE 10 – ***The Fujita Tornado Scale (Utilizing Enhanced wind speeds)***

F0	65 – 85 mph	Light Damage. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged
F1	86 - 110 mph	Moderate Damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off road.
F2	**111-135**	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground
F3	136-165 mph	Severe Damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.
F4	166 - 200 mph	Devastating damage. Well-constructed houses leveled; structure with weak foundations blown off some distance; cards thrown and large missiles generated.
F5	Over 200mph	Incredible damage. Strong frame houses lifted off foundations and swept away. Automobile sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena will occur.

www.noaa.gov/tornadoes.html

Table 10a. - The Enhanced Fujita Tornado Scale

FUJITA SCALE			**OPERATIONAL EF-SCALE**	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	**EF Number**	**3 Second Gust (mph)**
0	40-72	45-78	**0**	**65-85**
1	73-112	79-117	**1**	**86-110**
2	113-157	118-161	**2**	**111-135**
3	158-207	162-209	**3**	**136-165**
4	208-260	210-261	**4**	**166-200**

5	261-318	262-317	**5**	**Over 200**

www.ncdc.noaa.gov

TABLE 11 - Cherokee County Tornado Events (SHELDUS), EM Records

Date	Scale Speed	Length	Width	Loc.	Property Damage	Injuries/ Deaths
2/16/1954	F-1	15YDS	100YDS	County	2.50 K	
5/22/1963	F-1	1mi.	33yds	County	0.25K	
7/16/1964	F-0	1	100Yds.	County	25.00K	
4/18/1969	F-2	.5	86Yds	County	25.00K	
5/27/1973	F-3	19.8	100yds.		2.500M	4 injured
12/5/1977	F-1	02 mi.	17 Yds.		25.00K	1 injury
4/4/1989	F-1	8 mi.	50 yds.	County	2.50K	
1988	F-4				$23.81	
5/5/1989	F4	3mi.	700 yds		$2.500M	
2/10/1990	F1	3mi.	50yds.	County	$250.00K	
4/28/1990	F1	5mi.	40yds.	County	25.00K	
1990	F-1				$9,914.10	
8/16/1994	F2	10 Miles	150 Yards	Gowdeys-ville	$800,000	1 Injury
8/16/1994	F1	3mi.	75 yds.	County	500.00K	
5/1/1995	F-0				$119,034.21	
6/23/2001	Funnel Cloud					
10/8/2017	EF1	.07mi.	100yds.	Grassy Pond	20.00K	
10/23/2017	EF1	3.28 Miles	150 Yds	Grassy Pond	5.00K	
10/23/2017	EF2	4.58	150 Yds	Grassy Pond	250.00K	
5/22/2020	EF1		200yds.			

Location & Extent

Cherokee County has experienced several tornadoes since 1954 (66 Years). The strongest was an F-4, which occurred on May 5, 1989. The funnel left a path of destruction 700 yards wide, 3 miles long and caused 2.500M in damages. No injuries or deaths were associated with this storm. However, an F-3 occurred on May 27, 1973, that caused an additional 2.500 million in damages and injured 4. This tornado was 100 yards wide and 19.8 long. Tornados in Cherokee County have combined damages of $3,632,750 and a total of 6 injuries. No deaths were reported from the storms.

Probability

Cherokee County has experienced 20 tornados in the past 66 years. This presents with a recurrence interval of 3.3 and a hazard frequency of 0.30 % chance of a tornado each year. However, tornadoes can happen anywhere because they are not restricted by any geographic or political boundaries. Tornadoes, by nature, strike at random**.** While it is known that some areas of the country experience tornadoes more than others, predicting exactly what areas have a greater chance of being struck by a tornado is difficult.

Vulnerability

Overall, Cherokee County has a medium level vulnerability to tornadoes. The probability of one or more tornadoes touching down in Cherokee County is 0.30% in any given year. While there hasn't been a large number of tornadoes, it is clear from examining past events that tornadoes have the potential to do significant damage within Cherokee County

Since tornadoes strike randomly, the county and jurisdictions have equal chances of experiencing this hazard, however, the amount of damages and fatality totals could differ greatly. Critical Community Facilities are also located outside the jurisdictions but over a greater distance. Population density in this area is not as great as in the incorporated areas of the City of Gaffney or Town of Blacksburg either. The County too has vulnerable populations, however there are a lower number of facilities which house these populations. Combined, these factors make the County less vulnerable than Gaffney or Blacksburg.

TABLE 12 - Gaffney Tornado Events (SHELDUS), EM Records, NCEI

Date	Scale/ Speed	Length	Width	Location	Property Damage	Crop Damage	Injuries/ Deaths
4/4/1989	F-1				$1,044.98		
5/1/1995	F0	9mi.	50yds.	Gaffney	$70.00K		
5/29/1996	Funnel Cloud						
9/27/2004	F1	.8mi.	50yds.	Gaffney	$88.00K		

Location & Extent

The City of Gaffney has experienced 4 tornadoes since 1989 (15 years). The strongest were both rated as F-1. One on September 27, 2004 was 50 yards wide and .8 miles in length and the costliest. Damages were documented at $88,000. The other occurred on April 4,1989 and caused $1,044.98 in damages. However, not the strongest, an F0 tornado on May 1, 1995 caused Gaffney an additional $70,000 in damages. All tornadoes together combined caused Gaffney $159,044.98 in damages

Probability

The City of Gaffney has experienced 4 tornadoes in the past 15 years. This presents them with a recurrence interval of 3.75 and a hazard frequency of 4.95 chance of a tornado each year.

Vulnerability

The City of Gaffney possess a larger number of historic buildings and critical community facilities located within its jurisdiction. With a higher population density than Blacksburg or the county, a tornado touchdown in this area would have the potential to present with not only a lengthier recovery time, but a much higher number of injuries or fatalities.

TABLE 13 - Blacksburg Tornado Events (SHELDUS), NWS, NCEI, Storm Events Database, Fox Carolina News EM Records

Date	Scale/ Speed	Length	Width	Location	Property Damage	Crop Damage	Injuries/ Deaths
4/18/1969	F-2	.50 MI.	83 YDS.		$25,000		
5/27/1973	F-3	19.8 MI.	100 YDS.		2.5 M		
5/5/1989	F-4	3 MI.	700 YDS.		2.5 M		
4/28/1990	F-1	5 MI.	40 YDS.				
8/16/1994	F-2	4mi.	100yds.	Blacksburg	$500.00K		
1994	F-1			Blacksburg			
1994	F-2			Blacksburg	$43,717.02		
5/29/1996	F-0	02mi.	30yds.	Blacksburg	$3.000		
5/26/2006	EF-1	22					
11/15/2006	EF-0	24					
11/15/2006	EF-1	26					
1/5/2007	EF-0	25					
4/19/2008	EF-1	26					
4/19/2008	EF-1	19					
4/28/2008	EF-0	10					
5/9/2008	EF-2	21					
5/11/2008	EF-0	30					
4/14/2009	EF-1	23					
6/16/2009	EF-1	8					
6/16/2009	EF-0	19					
6/16/2009	EF-1	13					
9/28/2010	EF-1	29					
10/26/2010	EF-0	26					
10/26/2010	EF-2	29					11 Inj.
4/9/2011	EF-0	17					3 Inj.
5/26/2011	EF-0	14					
11/16/2011	EF-0	29					
11/16/2011		14					

11/16/2011	EF-2	28					3 / 5
11/16/2011	EF-1	28					
1/11/2012	EF-2	22					10 Inj.
5/22/2020	EF1	6.25mi.	200yds.	Blacksburg	n/a		

Location & Extent

The Town of Blacksburg has experienced numerous tornados since 1969. The strongest of the storms occurred on May 5, 1989 and was rated as a F-4. The storm was 700 yards wide and traveled 3 miles on the ground causing $2.5 million in damages. Another storm occurred on May 27, 1973. It was rated as a F-3, left a damaged area 100 yards wide, 19.8 miles long and created another $2.5 million in damages. Twenty injuries and 5 deaths have been associated with these tornadoes in Blacksburg.

Probability

From 1969 to 2020 (51 Years), Blacksburg experienced 32 Tornadoes. This gives them a hazard frequency of 0.63. Blacksburg can expect a recurrence interval of 1.59 to experience a tornado.

Vulnerability

While the Town of Blacksburg is less densely populated than Gaffney, it too has critical community facilities, and a higher population density which could present with a greater level of damage, destruction, and fatalities than one would find in the county

Wind

Wind is the flow of gases on a large scale. Wind is caused by differences in the atmospheric pressure. Damaging winds are often called "straight-line" winds to differentiate the damage they cause from tornado damage. Strong thunderstorm winds can some from a number of different processes. Most thunderstorm winds that cause damage at the ground are a result of outflow generated by a thunderstorm downdraft. Damaging winds are classified as those exceeding 50-60 mph. Damage from severe thunderstorm winds account for half of all severe reports in the lower 48 states and is more common than damage from tornadoes.

Wind speeds can reach up to 100 mph and can produce a damage path extending for hundreds of miles. Since most thunderstorms produce some straight-line winds as a result of outflow generated by the thunderstorm downdraft, anyone living in thunderstorm-prone areas of the world is at risk for experiencing this hazard. People living in mobile homes are especially at risk for injury and death. Even anchored mobile homes can be seriously damaged when winds gust over 80 mph.

Types of Damaging Winds

Straight-line wind is a term used to define any thunderstorm wind that is not associated with rotation, and is used mainly to differentiate from tornadic winds.
A downdraft is a small-scale column of air that rapidly sinks toward the ground.
A downburst is a result of a strong downdraft. A downburst is a strong downdraft with horizontal dimensions larger than 4 km (2.5 mi) resulting in an outward burst of damaging winds on or near the ground. (Imagine the water comes out of a faucet and hits the bottom

of the sink). Downburst winds may begin as a microburst and spread out over a wider area, sometimes producing damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder.

A microburst is a small concentrated downburst that produces an outward burst of damaging winds at the surface. Microbursts are generally small (less than 4dm across) and short-lived, lasting only 5-10 minutes, with maximum wind speeds up to 168 mph. There are two kinds of microbursts: wet and dry. A wet microburst is accompanied by heavy precipitation at the surface. Dry microbursts, common in places like the high plains and the intermountain west, occur with little or no precipitation reaching the ground.

A gust front is the leading edge of rain-cooled air that clashes with warmer thunderstorm inflow. Gust fronts are characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm. Sometimes the winds push up air above them, forming a shelf cloud or detached roll cloud.

A derecho is a widespread, long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters. By definition, if the wind damage swath extends more than240 miles (about 400 kilometers) and includes wind gusts of at least 58 mph (93 km/h) or greater along most of its length, then the event may be classified as a derecho. The Beaufort Wind Scale Table (table 11 below) is an empirical measure that relates wind speed to observed conditions at sea or on land.

Table 14: Beaufort Wind Scale (NOAA)

Force	Wind Speed		Descriptive Term	Effects Observed at Sea	Effects Observed on Land
	Km/h	Knots			
0	Less than 1	Less than 1	Calm	Sea surface like a mirror, but not necessarily flat.	Smoke rises vertically.
1	1 - 5	1 - 3	Light air	Ripples with the appearance of scales are formed, but without foam crests.	Direction of wind shown by smoke drift, but not wind vanes.
2	6 - 11	4 - 6	Light breeze	Small wavelets, still short but more pronounced. Crests do not break. When visibility good, horizon line always very clear.	Wind felt on face. Leaves rustle. Ordinary vane moved by wind.
3	12 - 19	7 - 10	Gentle breeze	Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered whitecaps.	Leaves and small twigs in constant motion. Wind extends light flag.
4	20 - 28	11 - 16	Moderate breeze	Small waves, becoming longer. Fairly frequent whitecaps.	Raises dust and loose paper. Small branches are moved.
5	29 - 38	17 - 21	Fresh breeze	Moderate waves, taking a more pronounced long form. Many whitecaps are formed. Chance of some spray.	Small trees with leaves begin to sway. Crested wavelets form on inland waters.
6	39 - 49	22 - 27	Strong breeze	Large waves begin to form. The white foam crests are more	Large branches in motion. Whistling heard

Force	Wind Speed		Descriptive Term	Effects Observed at Sea	Effects Observed on Land
	Km/h	Knots			
				extensive everywhere. Probably some spray.	in telephone wires. Umbrellas used with difficulty.
7	50 - 61	28 - 33	Near gale	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Whole trees in motion. Inconvenience felt in walking against wind.
8	62 - 74	34 - 40	Gale	Moderately high waves of greater length. Edges of crests begin to break into the spindrift. The foam is blown in well-marked streaks along the direction of the wind.	Breaks twigs off trees. Generally, impedes progress. Walking into wind almost impossible.
9	75 - 88	41 - 47	Strong gale	High waves. Dense streaks of foam along the direction of the wind. Crests of waves begin to topple, tumble and roll over. Spray may affect visibility.	Slight structural damage occurs, e.g. roofing shingles may become loose or blow off.
10	89 - 102	48 - 55	Storm	Very high waves with long overhanging crests. Dense white streaks of foam. Surface of the sea takes a white appearance. The tumbling of the sea becomes heavy and shock-like. Visibility affected.	Trees uprooted. Considerable structural damage occurs.
11	103 - 117	56 - 63	Violent storm	Exceptionally high waves. Sea completely covered with long white patches of foam. Visibility affected.	Widespread damage.
12	118 - 133	64 - 71	Hurricane	Air filled with foam and spray. Sea entirely white with foam. Visibility seriously impaired.	Rare. Severe widespread damage to vegetation and significant structural damage possible.

Date modified: 2011-11-07

Location

Cherokee County, Gaffney and Blacksburg have experienced numerous windstorms in the past 55 years. In many of these, wind was not confined to any one municipality but was experienced Countywide, as seen in the charts below.

TABLE 15: Cherokee Wind Events

Date	Wind Speed	Injuries	Deaths	Damage
1960				$1,250.77
2/1961				$1,238.22

2/1961				
11/1961				$942.14
4/1962				$1716.25
1963				$2,777.78
1969		1		$35,307.15
1/1964				$908.71
7/1/1965				894.29
2/1966				$869.45
4/18/1969				25.00k
6/5/1970				$3339.62
7/3/1970		1		$16,698.10
3/1971				$695.56
6/15/1971				$695.56
1973		1		$18.24
1973				$972802.07
1973				$1389.75
5/1973				$1,080.92
5/1973				$1824.00
8/1973				$145.92
11/1973				$858.36
3/1974				695.56
4/8/1974				$14,689.84
4/14/1974		1		$18.24
1974		1		$5,713.80
1974				$7,448.46
3/1974				$5,713.80
4/1974				$105.13
7/1974				$1010.91
11/1974				$1251.62
3/7/1975				$688.16
3/24/1975			1	$5235.88
5/1975				$5235.88
6/1975				$892.06
6/5/1975				$1852.71
6/15/1975				
7/1975				$70.86
7/4/1975				$6881.42
8/1975		1		$6338.16
12/1975				$523.61
1975		1		$6,338.16
2/1976				$1751.77
7/1976				$1,751.77
10/1976				$7,714.67
3/1977				$46.49
4/4/1977				$464.85

1977				$7,714.67
6/6/1977		1		$464.85
5/ 1977		1		$21,382.38
6/1977				$21,382.38
7/1977				
8/10/1977				
9/7/1977				$464.00
10/1977				$164.47
6/27/1978		2		$43,203.955
1978				$99,369.05
7/1980				$39,313.48
7/10/1980	50kts			
8/8/1980				$3,418.57
9/8/1980		1		$157,253.93
1980				$3,418.70
3/1981				$3,098.91
4/1981				$28,509.84
6/1982		1		$327,504.70
4/1982				$29.19
5/1982				$37.30
3/1983				$282.83
3/21/1983				
7/1983				$2828.22
8/1983				$3,717.07
12/1983				$3,335.83
2/1984				
3/28/1984				
7/1984		1 inj.		$2711.17
3/8/1984				$271.13
4/1984				$445.40
8/ 1985				$12,042.48
4/5/1985				
6/7/0985				$2,617.94
8/17/1985				
8/17/1985				
8/17/1985				
8/17/1985				
7/15/1986				
1986				$11,822.74
2/1987				$1629.50
4/8/1987				$1,140.64
6/3/1987				$1140.64
7/23/1987				
7/23/1987				
12/1987				$114.06

2/1988				$23.81
5/16/1988				
11-1988				$353.33
1/3/1989				$2,271.70
5/5/1989				$1,044.98
6/5/1989				
6/12/1989				
6/15/1989				
8/23/1989				$10,449.78
1990				$158,625.54
2/1990				$9,9140.96
5/2/1990				$991.41
5/9/1990				
6/9/1990				
8/21/1990				
7/10/1991				
7/24/1991				
7/24/1991				
7/27/1991	60kts			
1991				$9,513.75
3/10/1992				
3/10/1992				
3/19/1992				
4/21/1992				
11/22/1992				
1992				$923.57
3/31/1993				$1120.91
6/26/1994				
9/25/1994				
5/9/1995				
6/9/1995				
6//10/1995				
1/19/1996	50kts			$5,000.00
3/19/1996				
5/29/1996	50kts			$5,000.00
1996				$8,258.59
1998				$31,798.10
1/28/1998	50kts			
2/3/1998				$7.69k
2/24/1998				
11/9/2000				
8/10/2000	50kts			
3/20/2001	55kts			
6/14/2001	50kts			
4/2002				$1,440.55

6/2002				$1440.55
7/3/2002	60kts			50.00k
7/4/2002				$7202.74
5/2/2003				$140.844.80
7/2003				$70,422.41
7/9/2003				$14,084.48
8/2003				$2,816.90
3/7/2004	60kts			$27,438.27
1/2005				$1,326.96
3/8/2005	50kts			
4/22/2005	50kts			
7/2005				$72,982.57
4/2007				$624,944.50
6/2008				$120,367.30
7/6/2008	50kts			
7/9/2008	50kts			
7/21/2008	50kts			
8/2/2008	60kts			
1/7/2009	50kts			$60,398.55
2/11/2009	48kts			$12,079.71
5/28/2009	50kts			
6/16/2009	50kts			
6/18/2009	55kts			
6/18/2009	55kts			
6/15/2009	55kts			
6/15/2010	50kts			
3/28/2010	50kts			
4/27/2010	50kts			
6/15/2010	50kts			
6/27/2010	50kts			
7/18/2010	50kts			
7/18/2010	50kts			
7/26/2010	55kts			
7/26/2010	50kts			
4/5/2011	60kts			High Winds
4/27/2011				T-Storm Winds
5/12/2011	80MPH			
5/26/2011				T-Storm Winds
6/22/2011	50kts.			
7/4/2011	50kts			
6/23/2012	50kts			
7/4/2012	60kts			Micro Burst Wind $50,000.00
7/5/2012	50kts			
7/27/2012	50kts			

8/8/2012	55kts			
9/29/2012	50kts			
6/25/2013	50kts			
6/28/2013	50kts			
7/4/2013	50kts			
7/17/2013	50kts			
6/18/2014	50kts			
6/19/2014	50kts			
6/19/2014	55kts			
7/14/2014	55kts			
7/27/2014	55kts			
8/6/2015	55kts			
2/24/2016	45MPH			
7/7/2016	50kts			
9/27/2016	52kts			
9/27/2016	50kts			
6/13/2017	50kts			
7/1/2017	55kts			
7/28/2017	50kts			
10/8/2017				Hurricane Nate Winds
4/15/2018	50kts			
6/1/2018	55kts			
6/27/2018	55kts			$2,000.
7/21/2018	50kts			
4/8/2019	50kts			
8/19/2019	60MPH			$10,000.
2/6/2020				High Winds

Location & Extent

Cherokee County has experienced numerous episodes of damaging winds, causing 14 injury and 1 death. The single most costly storm occurred on July 2007 with $624,944.50 in damages. The highest estimated wind gust was 80mph on 5/12/2011. All wind events combined have totaled damages of $4,020,573.41 in the county.

Probability

Between 1960 – 2015 (60 years), Cherokee County experienced 208 wind events. This presents with a recurrence interval of .29 years and a hazard frequency of 3.5 per year of a future Wind Storm. The probability of Cherokee County experiencing a windstorm in any given year is 100%.

Table 16-GAFFNEY WIND (SHELDUS)

Year	Wind Speed	Injuries	Deaths	Damage

8/1977				$21,382.38
8/1985		1		$12,042.49
5/1/1985				$8,502.44
12/1985				$12,042.49
7/1986				$118,227.41
1988				$1,095.33
5/5/1989				$1044.98
6/5/1989				$10,449.78
11/1990				
7/1991				$47,568.74
5/13/1993				$50.00k
5/1993				$8,967.28
5/1994				$8,743.40
5/15/1994				$50.00k
6/4/1994				$500.00k
6/6/1994				
6/29/1994				
7/19/1994				
5/1/1995				$5.00k
5/9/1995				
6/9/1995				$2.00k
6/10/1995				
5/11/1996	50kts			
5/24/1996	50kts			
5/25/1996	50kts			
5/29/1996	50kts			
5/29/1996	50kts			
5/29/1996	50kts			$25.00k
6/12/1996	50kts			
1996				$41,292.94
2/21/1997	50kts			
6/21/1997	50kts			
7/14/1997	50kts			
7/16/1997	50kts			
7/28/1997	50kts			
4/17/1998	50kts			$20.00k
6/21/1998	50kts			
6/3/1999	50kts			
6/10/1999	50kts			
7/6/2000	50kts			
7/15/2000	50kts			
8/24/2000	50kts			
9/24/2000	50kts			
6/15/2001	50kts			

6/24/2001	50kts			
7/8/2001	50kts			
8/31/2001	50kts			
8/31/2001	50kts			
4/17/2002	50kts			
5/9/2002	50kts			
6/4/2002	50kts			$1.00k
6/6/2002	50kts			
7/4/2002	55kts			
7/4/2002	55hts			$5,000.00
7/4/2002	55kts			
7/22/2002	50kts			
11/11/2002	50kts			
5/2/2003	70kts			$100.00k
7/9/2003	65kts			$10.00k
7/16/2003	50kts			
7/16/2003	50kts			
7/18/2003	50kts			$50.00k
8/17/2003	50kts			$2.00k
8/17/2003	50kts			
11/19/2003	50kts			
11/19/2003	55kts			$5.00k
6/25/2004	50kts			
1/13/2005	50kts			$1.00k
4/22/2005	50kts			
8/5/2005	50kts			
6/11/2006	50kts			
6/23/2006	50kts			
7/13/2006	50kts			
8/3/2006	50kts			
6/24/2007	50kts			
3/4/2008	50kts			
3/4/2008	50kts			
3/4/2008	50kts			
3/4/2008				
6/27/2008	60kts			$100.00k
6/28/2008	50kts			
6/28/2008	50kts			$50,000.
7/8/2008	50kts			
7/9/2009	50kts			
7/9/2008				
6/16/2009	50kts			
7/6/2009	50kts			
5/16/2010	55kts			
6/15/2010	50kts			

6/25/2010	50kts			
6/29/2010	50kts			
6/18/2011	50kts			
5/16/2012	50kts			
7/27/2012	50kts			
6/28/2013	50kts			
7/12/2015	50kts			
7/21/2015	50kts			

Location & Extent

Gaffney has experienced several wind episodes in the past. The strongest wind speed of 70 knots was experienced on May 2, 2003. The most damages, which occurred with any single wind episode, was $500,000 experienced on June 4, 1994. Gaffney has experienced total damages of $1,267,359.66 and 1 injury with all documented episodes.

Probability

Between 1977 – 2015 (38 years), the city of Gaffney has experienced 97 wind episodes. This presents with a recurrence interval of .39 years and a hazard frequency of 2.55 chance per year of a future Wind Storm.

Table 17: Blacksburg Wind Events

Date	Wind Speed	Injuries	Deaths	Damage
7/1964				$41,799.11
7/2/1977				$2,138.24
8/1985				$1204.25
6/3/1987				$1,140.64
7/1987				$11,406.45
6/5/1989				$10,449.78
8/1989				$1044.98
5/1990				$9,914.10
3/1992				$92.36
6/4/1994	50kts.			50.00k
6/10/1995				
1/1996				$2,752.87
5/24/1996	50kts			
5/24/1996	50kts			
8/5/1997	50kts			
7/23/1998	50kts			
6/10/1999	50kts			
7/24/1999	50kts			
6/15/2001	50kts			
6/15/2001	50kts			
6/25/2001	50kts			
6/25/2001	50kts			

6/6/2002	50kts			
7/9/2003	50kts			
7/11/2003	60kts			
7/17/2003	50kts			
7/19/2003	50kts			
7/29/2003	50kts			
8/17/2003	50kts			
4/22/2005	50kts			
7/28/2005	60kts			55.00k
5/20/2006	50kts			
6/11/2006	50kts			
7/15/2006	50kts			
8/13/2006	50kts			
3/15/2008	50kts			
6/15/2008	50kts			
7/9/2008	50kts			
6/11/2009	50kts			
3/28/2010	50kts			
3/28/2010	50kts			40.00k
5/16/2010	50kts			
2/28/2011	55kts			
4/5/2011	High Winds			
4/27/2011	Thunder Storm Wind			
5/10/2011	60kts			
5/12/2011	80 MPH			
5/26/2011	Thunderstorm Wind			
6/5/2011	55kts			
6/18/2011	50kts			
6/21/2011	50kts			
6/21/2011	50kts			
7/4/2011	50kts			
7/13/2011	50kts			
7/1/2012	55kts			
7/19/2012	50kts			
8/8/2012	50kts			
2/24/2013	45MPH			
6/19/2015	50kts			
6/20/2015	50kts			
7/21/2015				
7/22/2016	55kts			
7/15/2017	50kts			
10/8/2017	Hurricane Nate Wind			
6/27/2018	High Winds			
9/27/2018	50kts			
8/19/2019	60MPH			

2/6/2020	High Winds			

Extent

Since 1964, Blacksburg has experienced several episodes of damaging winds. The highest wind noted was 80mph on May 12, 2011 and the single costliest wind episode of $55,000 occurred on June 28, 2005. Combined, Blacksburg wind episodes have cost $226,942.78 in damages.

Probability

Between 1964 – 2020 (56 years), Blacksburg experienced 68 wind episodes. This presents with a recurrence interval of .82 and a hazard frequency of 11.3% chance per year of a future wind storm.

Vulnerability

As seen on the above charts, the county is more vulnerable to agricultural wind damage. Being a rural area, greater amounts of agricultural products are located in this area and the area does not contain tall buildings to act as wind buffers. Less population would be affected due to the population being spread out. Taller buildings located in The City of Gaffney could act as windbreaks to lessen wind impact but contains a greater number of historic structures and a denser population than the county. Wind in this area could produce higher damage totals, as well as, higher injury and death rates. A greater number of critical infrastructures exist here, as well, and wind could have a larger impact and prolonged recovery time due to damage of these facilities. The Town of Blacksburg only encompasses 1.84 miles but population density is greater inside town limits, therefore wind damage in this area could produce increased injuries and deaths.

WINTER STORMS

Winter storms (consisting of snow, ice, and cold temperatures) can cause major problems in regions that are not prepared for them. These types of storms can cause property damage, create safety risks, destroy crops and valuable timber, damage infrastructure components such as power lines, and have enormous economic impacts and cause major problems in regions that are not prepared for them. (SCEMD).

Location

Since 1960, Cherokee County, Gaffney and Blacksburg have experienced numerous winter storms resulting in power outages and hazardous driving conditions. These storms are wide spread and were experienced countywide. Chart 18 below details the date of the storm, type weather experienced and resulting cost.

CHART 18 – Cherokee County Winter Storms

Date	Type Event	Impact	Extent
3-2-1960	Snow / Ice	1 Death $24,320.07	
3/9/1960	Winter Weather		
1961	Ice Storm	$9,421.09	
2/3-4/61	Glaze	$942.14	
1/1/1962	Ice & Snow		
1/1/1964	Ice	2 Inj. $92,055.48	
1964	Ice	$1,990.47	
1964	Ice	1 Inj.	
1965	Sleet, Snow		
1966	Ice / Snow	$114,265.61	
1966	Ice/Snow, Severe Cold		
1967	Cold		
1/9/1968	Rain, Sleet, Snow, Freezing Rain	$116,358.87	
1969	Rain, Sleet, Snow	$75,121.51	
1969	Freezing Rain		
1969	Wind, Snow	1 Death $14,122.86	
1/8/1970	Extreme Freeze		
1970	Extreme Freeze		
1/8-9/1971	Snow Storm	1 Death, $177,746.57	
12/3/1971	Snow		11.4 in.
4/1/1972	Cold Temps		
1/7-8/1973	Snow, Ice	$6,344.64	
2/9/1973	Snowstorm	$634,436.15	
1973	Winter Weather		
1974	Frost, Freeze	$6,739.33	
2/3-4/1975	Ice Storm	$13,380.56	
3/2-3/1975	Low Temperatures	$5,235.88	
1/1/1977	Unusual Cold	$464.85	
1978	Winter Weather		
3/2/1978	Winter Weather		

1979	Snow, Sleet, Freezing Rain	$38,800.35	
2/6/1979	Snow, Sleet, Ice	$594,936.84	
1980	Freezing Rain	$827.66	
2/5-6/1980	Snow Storm	$34,185.65	
3/1-/2/1980	Snow, Freezing Rain	$3,418.57	
2/1/1981	Sleet / Freezing Rain	$79.20	
1982	Frost, Freeze		
1982	Snow, Sleet, Freezing Rain	$4,796.37	
1982	Hard Freeze		
1982	Sleet, Snow	2,919.18	
1982	Extreme Cold		
4/7/1982	Winter Weather		
1983	Extreme Cold	$2,828.22	
3/24/1983	Winter Storm /snow, wind	$282.83	9.3 in.
1983	Freezing Rain, Sleet, Snow	$2,828.22	
2/6/1984	Freezing Rain	$4,454.04	
1985	Cold	$261.80	
1985	Extreme Cold, Snow	$26,179.35	
1985	Freezing Rain	$66.91	
1986	Snow	$16.88	
1/22/1987	Winter Weather		10.2 in.
1/1/1987	Heavy Snow	$162.95	
4/1/1987	Winter Weather		
1987	Ice Storm	$6,003.40	
1987	Cold	$11,406.45	
1985	Sleet, Snow	$669.03	
1986	Winter Weather		
1986	Winter Weather		
1986	Winter Weather		
1988	Low Temps	$238.12	
1/7/1988	Sleet, Snow, Ice	$23,811.48	12 in.
1989	Extreme Cold	1 Injury	
1989	Winter Weather		
1989	Winter Weather		
1989	Winter Storm		
5/8/1989	Heavy Snow	$2,27100	
1989	Cold		
1990	Sleet, Freezing Rain	$123.93	
1990	Freeze		

1992	Ice Storm		
1992	Ice Storm		
1993	Ice Storm	$1,120.91	
3/12/1993	Snow		9.8 inches
1994	Ice Storm		
1/6/1995	Freezing Rain	$17,004.89	
1/6/7-1996	Winter Storm		
2/2/1996	Ice Storm		
2/3/1996	Winter Weather		
2/16/1996	Winter Weather		
3/8/1996	Cold/Wind Chill	**$2,570.17**	
12/6/1996	Snow		10.5 inches
1/9/1997	Ice Storm	$25.00k	
2/13/1997	Ice Storm		
4/1/1997	Cold / Wind Chill		
12/29/1997	Winter Weather		
1/19/1998	Winter Weather		
12/23/1998	Sleet		
12/24/1998	Ice Storm		
1/ 2-3/1999	Winter Storm	$1,540,000,000.00	
1/31/1999	Sleet		
2/1/1999	Winter Weather		
2/19/1999	Winter Weather		
1/22/2000	Heavy Snow		
1/24/2000	Heavy Snow		
1/29/2000	Ice Storm		
11/19/2000	Heavy Snow		
12/1/2000	Extreme Cold / Wind Chill		
12/3/2000	Heavy Snow		
12/13/2000	Winter Weather		
12/19/2000	Heavy Snow		
12/21/2000	Winter Weather		
4/17/2001	Winter Weather		
1/3/2002	Heavy Snow		
1/16/2003	Winter Weather		
1/23/2003	Heavy Snow		

2/16/2003	Sleet		
12/4/2003	Winter Weather		
1/25/2004	Sleet		
1/27/2004	Winter Weather		
2/26/2004	Heavy Snow	$20.00k	
3/27/2004	Frost / Freeze		
2005	Winter Weather		
1/29/05	Winter Storm		
1/29/05	Winter Weather Mix		
12/8/05	Winter Weather		
12/15/05	Ice Storm	$100.00k	
12/15/05	Winter Weather		
1/18/07	Winter Weather		
2/1/07	Winter Storm		
4/8/2007	Winter Freeze	$7.00k	
1/16/08	Winter Weather		
1/20/09	Winter Weather		
3/1/09	Heavy Snow		
12/18/2009	Winter Weather		
1/29/10	Winter storm		
1/29/10	Winter Weather		
2/12/10	Heavy Snow		
3/2/10	Winter Weather		
12/16/2010	Winter Weather		
12/25/10	Heavy Snow		
1/9-10/2011	5-7 in. Snow		
1/25/2013	Winter Weather		
12/16/2013	Winter Weather		
3/13/2013	Winter Weather		
11/26/2013	Winter Weather		
1/6/2014	Cold / Wind Chill		
1/28/2014	Winter Weather		
2/11-13/2014	Heavy snow State of Emergency Declared	$20,415.51	
1/17/2015	Cold / Wind Chill		
2/16-17/2015	Ice & Snow		
2/23-24/15	Snow Storm State of Emergency Declared		1 in. or less
2/25/2015	Winter Weather		
1/22/2016	Winter Storm		
2/15/2016	Winter Weather		
1/6/2017	Winter Storm		

3/20/2017	Winter Storm		
3/16/2017	Cold / Wind Chill	$50.00M	
12/2018	Snow		7 in.
1/17/2018	Heavy snow		
2/4/2018	Heavy snow		
12/8/2018	Heavy snow		2-8 in. of snow & ice
2/6/2021	Snow		

TOTALS: 151 Events $206,244,798.00 Property Damage
(National Climatic Data Center, SHELDUS, EM Records, NWS)

Extent

Cherokee County has experienced numerous winter storms in the past 61 years. Three examples of these include a winter storm on January 2-3, 1999, a severe ice storm, which occurred on December 15 & 16, 2005, and a winter snow storm, which occurred on March 1 & 2, 2009.

The single costliest storm (1.540M) occurred on January 2-3, 1999. Per NOAA, a shallow cold arctic airmass in place ahead of a developing storm system in the southern Plains set the stage for a significant ice storm for most of the upstate during the evening of the 2nd. Patchy sleet began during the late morning and became more widespread and heavier during the afternoon – mixing at times with freezing rain. Sleet accumulated to nearly one inch across the foothills, before changing to freezing rain in the early evening. Freezing rain continued through the evening, heavy at times and accumulated to damaging levels. Downed trees and power lines caused widespread power outages, totaling 160,000 across the upstate. Much of the damage to homes was due to ice damming and to a lesser extent, fallen trees

On December 15, 2005, a severe winter storm impacted several counties in Upstate South Carolina. The storm caused almost $1.5 million ($900K in Cherokee County alone) in property damage due to power outages and housing unit damage from falling limbs and trees. This winter storm resulted in a Presidential Disaster Declaration.

On March 1 & 2, 2009, Cherokee County experienced a Winter Snow Storm. A complex low-pressure system, associated with a strong upper level disturbance, provided the necessary dynamical forcing. This system was coupled with very moist southeasterly flow from the Atlantic that provided ample moisture for snowfall once thickness values decreased enough to support snow production. This resulted in accumulation of three to twelve inches of heavy, wet snow across the county. The accumulation rate, which occurred very fast, along with the weight of the snow, brought down power lines, power poles and numerous trees, as well. These conditions contributed to numerous power outages and roads across the county becoming impassable, as well as, damage to houses and automobiles. Traffic along Interstate 85 came to a standstill due to jack-knifed eighteen wheelers. Stranded motorists had to be evacuated from the stalled traffic and transported to a shelter established to accommodate them. Simultaneously, EMS could not navigate in the thick snow to answer emergency medical calls. A means of transportation had to be arranged to aid them also. Contingent resources were deemed inoperable by the

conditions and found to be unreliable. This incident mandated a response from Federal, State, and Local Agencies, as well as, the private sector.

Winter storms combined have resulted in 4 injuries, 3 deaths, and documented damages of $206,247,626.00, however, the impact and extent was not found for all storms. Snow Storms on December 15, 2005, February 11-12, 2014, and February 23-24, 2015 also resulted in a State of Emergency being declared.

Probability

Countywide, there have been 150 winter storms in the last 61 years, which gives Cherokee County a recurrence interval of .41 and a hazard frequency of 2.46% chance per year

Overall, Cherokee County has a high level of vulnerability to winter storms. The probability of one or more winter storms occurring in Cherokee County is 100%. Examining past events, it is evident that winter storms can significantly disrupt normal operations within a community. Additionally, some ice storms associated with winter storms have caused significant property damage and disruption of the electric utilities.

Vulnerability

Overall, Cherokee County has a high level of vulnerability to winter storms. Examining past events, it is evident that winter storms can significantly disrupt normal operations within a community. In addition, some ice storms associated with winter storms have caused significant property damage and disruption of the electric utilities. Winter storms affect each area equally, but the more urban areas have more critical facilities and therefore are more vulnerable to winter storms, especially with power lines and traveling through cities.

HURRICANES

Hurricanes are severe tropical storms "with winds that have reached a constant speed of 74 miles per hour or more" (FEMA). Hurricanes commonly form in the Caribbean Sea, Atlantic Ocean, and the Gulf of Mexico. Hurricanes can cause devastating effects resulting from violent winds, waves, rains, and floods. In an average year, there are six hurricanes over the Atlantic Ocean. An average of five hurricanes strikes the United States every three years (NOAA). South Carolina is one of the most vulnerable states to hurricanes in the United States (SCEMD). Table 12 below shows hurricane levels, wind speed, and the probable damage experienced.

TABLE 19- Saffir-Simpson Scale

Category	Wind Speed	Description
One	74 – 95 mph	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery and trees. Some damage to poorly constructed signs. Also some coastal flooding and minor pier damage.
Two	96 – 110 mph	Some roofing material, door and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs and piers. Coastal and low-

		lying escape routes flood 2 – 4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.
Three	111 -130 mph	Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Flooding near the coast destroys smaller structures with large structures damaged by battering from floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required.
Four	131 -155 mph	More extensive curtainwall failures with some complete roof structures failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft. above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10km).
five	> 155	Complete roof failure on many residences and industrial buildings. Some complete building failure with small utility buildings blown over or away. All shrubs, trees and signs blown down. Complete destruction of mobile homes. Severe and extensive windows and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floor of all structures located less than 15 ft. above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required.

www.nhc.noaa.gov/aboutsshs.shtml

Location & Extent

Most of the storms of this type that have passed over the Appalachian Region have struck the Gulf Coast and then proceeded north and east. A tropical depression has sustained winds of less than 38 mph, a tropical storm has sustained winds between 39 and 73 mph, and a hurricane has sustained winds of 74 mph or greater. Hurricanes present a limited risk to Cherokee County, City of Gaffney and Town of Blacksburg except in the

form of flooding which is addressed through the Flooding Hazards assessment. However, in the last 56 years, 7 tropical systems have affected Cherokee County, giving a recurrence interval of 8 and a Hazard Frequency of 0.13. A total of $381,150.37 in damages have been documented. (See Map Below).

On August 22, 1995, Hurricane Jerry, downgraded to a Tropical Storm, entered the county with winds of 35 knots and maximum pressure of 1013 bars. The storm spawned an EF-2 tornado. Confirmed by the National Weather Service, the storm's path was 5 miles west-north west of Gaffney to 5 miles south- southwest of Boiling Springs, NC. Its heavy rains claimed one life when a child was swept into a drainage pipe and drown.

On October 11, 2017, Hurricane Nate winds caused damage to structures in the county. "A home on Robbs School Road suffered significant damage when residents say a tornado touched down around 4:30p.m. Portions of the roof were ripped off, as well as, some siding and broken windows. Surrounding yards were scattered with shingles, limbs and fallen trees". (The Gaffney Ledger).

TABLE 20 – Cherokee Tropical Weather (EM Records)

Date	Name	Damage
1964		$9,086.79
1964	Tropical Storm	$908.71
6/7/1968		$809.49
1972	Tropical Depression Agnes	$673.93
8/22/1995	Jerry	$369,671.45
10/8/2017	Hurricane Nate Winds	
10/31/2020	Tropical Storm Zeta	

Probability

There is almost zero chance of a direct hit form a hurricane to the county, and there are not records of this in the last 100 years. Hurricane Hugo's track came close in 1989, but did not pass through the county. Hurricane winds have been noted in the county. Check out USC's web application for more information: http://mapra.cas.sc.edu/ihat/index.html. The probability of a hurricane striking South Carolina is less than eight percent in any given year. Any or all counties could be affected with varying degrees of damage. The worst-case scenario for the Region would be for a strong hurricane to strike the Beaufort/Savannah area and maintain strength as it moves inland quickly. Most of the storms that pass directly over the Region approach from the Southeast and have weakened considerably over time as they move further from the Gulf of Mexico.

Vulnerability

Overall, Cherokee County, City of Gaffney and Town of Blacksburg have a very low vulnerability to hurricanes. No storm has moved through this area at hurricane strength. Those that have crossed the region have maintained at most tropical storm strength winds. However, hurricane damage is widespread and therefore it is possible to

affect the entire county equally. Assessing damages caused by these in the past shows that the primary hazard created by these events is flooding near rivers.

HAIL

Hail are frozen droplets of water that thaw and freeze while wind patterns (updrafts and downdrafts) take them between colder and warmer elevations within a thunderstorm cloud. Each time the droplet re-freezes, another layer of ice is added to the object, thus making it larger until it falls to the earth. Table 13 below, the Turro Hail Index, shows hail diameter, comparison and typical impacts.

Table 21 – Turro Hail Index

Scale	Max Diameter	Comparisons	Typical Impacts
H0	5-9mm	Pea	No Damage
H1	10-15mm	Mothball	Slight general damage to plants, crops
H2	16-20mm	Marble	Significant damage to fruit, crops, vegetation
H3	21-30mm	Walnut	Severe damage to fruit ad crops, damage to glass and plastic structures, paint and wood scored.
H4	31-40mm	Pigeon's Egg	Widespread glass damage, vehicle bodywork damage
H5	41-50mm	Golf Ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries.
H6	51-60mm	Hen's Egg	Bodywork of grounded aircraft dented, brick walls pitted
H7	61-75mm	Tennis Ball	Severe roof damage, risk of serious injuries
H8	76-90mm	Soft Ball	Severe damage to aircraft bodywork
H9	91-100mm	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the storm

(Appalachian Region Natural Hazard Mitigation Plan)

Location

Numerous episodes of hail occur each year in Cherokee County. Hail is not restricted to any particular location of the county and can happen anywhere as long as atmospheric conditions exist. Table 22 below lists the date of the events, time occurred and reported diameter of the hail.

TABLE 22– Gaffney Hail Events

Date	Time	Hail Diameter	Property Damage
8/2/1985			$1,204.25
1988			$1,095.33
1988			$109,532.75
6/9/1990			$991.41
3/27/1994	17:45	1.75	
6/4/1994	22:05	1.75 / 2.75	87,434.04

6/2/1997		1.75	
6/14/1994		2.75	
6/21/1997	4:23 PM	1.00	
9/25/1994	14:15	1.25	
5/25/1996	17:40	**.75**	
5/25/1996		**.75**	
5/29/1996	15:50	1.00	
6/15/0996		**.75**	
6/2/1997	21:34	**.75**	
6/2/1997	21:06	1.75	
6/2/1997	13:35	**.75**	
6/21/1997	16:23	1.00	
6/6/1998	16:10	1.75	
7/23/1998	17:48	**.75**	
3/21/1999	3:25	**.75**	
4/27/1999	18:52	**.75**	
6/28/2000	18:28	**.75**	
8/25/2000	21.32	1.00	
4/1/2001	9:49	**.75**	
6/25/2001	14:00	**.75**	
5/13/2002	14:00	1.75	
5/13/2002	16:36	1.00	
7/4/2002	17:40	1.00	
7/9/2003	15:55	1.00	
8/5/05	1:30 PM	0.75	
12/28/05	5:45 PM	0.88	
4/8/06	5:55 AM	0.88	
5/20/06	3:38 PM	0.88	
5/20/06	3:43 PM	1.75	
5/20/06	5:58 PM	1.75	
6/2/06	8:10 PM	0.75	
6/12/06	1:40 PM	0.75	
3/15/08	2:30 PM	0.75	
6/11/08	6:35 PM	0.88	
6/11/08	6:45 PM	0.75	
6/27/08	6:02 PM	0.75	
7/4/08	9:08 PM	0.88	
7/12/09	5:47 PM	0.75	
4/27/2010		.88	
4/27/2010		.75	
5/16/10	7:35 PM	0.75	
5/16/10	7:52PM	0.75	
5/10/2011		.88	
6/2/2011		.88	
7/1/2012			

8/19/2019	Hail, T-Storm	Quarter Size	
4/26/2020		**2**	

(www.ncdc.noaa.gov, EM Records)

Extent

Gaffney has experienced numerous episodes of hail in the past 35 Years. The largest hail stones occurred on June 4, 1994 and June 14, 1994 at 2.75 in diameter. The episodes of hail resulted in documented costs of $200,257.78. There were no reports of injuries or fatalities associated with these storms.

Location

TABLE 23– Blacksburg Hail Events (www.ncdc.noaa.gov), EM Records

Date	Time	Hail Diameter	Damage
1988			$109,532.75
3/27/1994	5:45 PM	1.75	
6/4/94	21:10	1.75	
7/19/1994	1825	1.75	
5/24/1996	2158	1.00	
5/24/1996	2158	1.00	
5/25/1996		.75	
5/27/1996	2246	.75	
4/9/1998	2044	1.00	
5/27/1998	1530	1.00	
6/25/2001	1845	.75	
10/25/2001	01.25	1.50	
6/6/2002	1805	.75	
7/11/03	1505	.88	
7/11/2003	1520	.75	
5/20/06	2:34 PM	2.00	
5/20/06	4:44 PM	1.75	
7/2/06	4:13 PM	1.00	
7/2/06	4:20 PM	0.88	
7/13/06	6:50 PM	0.75	
6/12/07	3:50 PM	0.75	
6/12/07	4 PM	0.75	
6/12/07	4:09 PM	1.00	
4/13/2011		Larger than golf ball	
5/16/2012	21:12	.75	
6/13/2014	18:20	.88	
5/31/2016	16:14	1.00	
10/8/2017	Hail, Hurricane Nate		
8/19/2019	Hail, T-storm	Quarter Size	

Extent

Blacksburg has experienced 29 episodes of hail between 1988 and 2020 (32 Years. The largest hail stones were reported to be 2.00 inches in diameter on May 20, 2006, however, no injuries or fatalities were recorded with these storms. This documented hail storm alone, had a cost of $109,532.75.

Location

TABLE 24– Cherokee County Hail Events (www.ncdc.noaa.gov), EM Records

Date	Time	Diameter	Damage
1963			$2,777.78
1963			$70,575.81
1965			
7/1/1965			
1973	2 injuries		$1,080,389.75
1974			
7/4/1975			$6,881.42
6/1/1976		**1.75**	
5/5/1977			$1,069.12
6/6/1977	1 Injury		
4/18/1978		**.75**	
1981			$28,509.84
1982			$29.19
1982			537.11
1982	1 Injury		$327,504.72
1982			$37.30
1984	1 Injury		$2,711.17
5/15/1985		1.50	
6/4/1985		1.75	
6/7/1985		1.50	$2,617.94
5/1/1987		.75	$11,406.45
5/4/1987		.75	$1,140.64
5/17/1988		1.75	$353.33
6/5/1989		.88	
4/30/1990		2.50	
5/1/1990		.88	
5/2/1990		1.25	
5/21/1990		1.75	
6/9/1990		**.75**	
3/31/1993		**1.75**	
3/27/1994		**1.75**	
6/10/1995	17:08	**.75**	
6/4/1996	13:23	**.75**	
6/2/1997	9:06 PM	1.75	

6/2/1997	9:34 PM	.75	
6/21/1997	4:23 PM	1.00	
4/8/06	5:55 AM	.75	
5/21/06	2 PM	.88	
7/2/06	6:30 PM	.75	
5/2/09	3:12 PM	.75	
6/16/09	5:43 PM	.75	
3/28/10	6:33PM	1.75	
4/27/10	4:39 PM	.88	
4/27/2010	16:40	.75	
4/9/2011	16:30 Hail Storm	1.75	
4/9/2011	19:31	2.75	
4/27/2011	T-Storm		
5/11/2011			
5/26/2011	T-Storm Hail		
4/5/2012	16:03	.75	
7/4/2012	Micro Burst Storm- 16:46 Hail	.88	
7/5/2012	15.25	.88	
7/6/2012			Hail covered ground like snow.
7/25/2013	19:22	1.75	
6/19/2014	17:12	1.00	
4/20/2015	13:41	1.00	
9/11/2015	18:20	1.00	
7/7/2016	17:26	1.50	
10/8/2017	Hail – Hurricane Nate		
8/19/19	Hail-Thunderstorm		Quarter size

Extent & Location

Cherokee County has experienced numerous episodes of hail between 1963-2019 (56 years). The largest hail stones occurred on April 9, 2011 at 2.75 inches in diameter. Combined damages of the storms totaled $1,536,655.54, and one particular storm that occurred in 1973 caused the single most damage of $1, 080,389.75. there have been 5 injuries reported with these storms. These storms have a reoccurrence interval of .85 and a hazard frequency of 1.18 per a year.

On March 28, 2010, the entire county experienced a severe hail storm. The Emergency Operations Center reported seeing hail 1.75 inches in diameter. Wide spread damage was reported to vehicles and homes. No cost estimates on the storm have been published.

Probability

Hail is not restricted to any particular location of the county and can happen anywhere as long as atmospheric conditions exist. Hail is expected to occur 2.33 times a year. The probability that it happens in any given year (and in the future) is 2.29 *100 = 229% chance.

Gaffney has experienced 53 storms in the last 35 years that have produced hail at a recurrence interval .66 chance per year. This gives them a hazard frequency of 1.51% of experiencing hail any given year.

Blacksburg has experienced 28 storms in the last 31 years that have produced hail at a recurrence interval .1.11 per year. This gives them a hazard frequency of 0.90% of experiencing hail any given year.

Cherokee County has experienced 66 storms in the last 56 years that have produced hail at a recurrence interval of .85 per year and a hazard frequency of 1.13% of experiencing hail any given year.

Vulnerability

Overall, Cherokee County and the municipalities of Gaffney and Blacksburg have a high vulnerability to hail storms. There is a high probability (100%) that at least one hail producing storm will occur in either one of these locations within a year. Based on past events, the hail storms have caused some minor damage and while the probability of a hail storm is high in the County and municipalities, the extent of damage from past storms has been relatively low. Overall, Cherokee County, and the municipalities of Gaffney and Blacksburg's vulnerability to a damaging event is moderate.

HEAT & DROUGHT

According to NOAA, a "drought is a period of abnormally dry weather which persist long enough to produce a serious hydrologic imbalance for example crop damage, water supply shortage, etc.). The severity of the drought depends upon the degree of moisture deficiency, the duration and the size of the affected area." Drought and Heat extent information wasn't always available. Drought intensity is measured as:
-D0 – Abnormally Dry -D1 Drought – Moderate -D2 Drought – Severe
-D3 Drought - Extreme -D4 Drought - Exceptional

TABLE 25 – Cherokee Periods of Heat / Drought Events

DATE	PERCENTAGE	DROUGHT EXTENT
4/5/2022 – 3/15/2022	100%	NONE
3/8/2022	9.13%	NONE
	90.87%	D0
3/1/2022	88.41%	NONE
	11.59%	DO
2/22/2022	87.79%	None
	12.21%	D0
2/15/22	93.84%	NONE
	6/16%	D0
2/8/22	93.84%	N0NE
	6.16%	D0
2/1/22	34.57%	NONE
1/25/2022	40.39%	NONE
	59.61%	D0

1/18/2022	15.70%	NONE
	84.30%	D0
	10.24%	D1
1/11/2022	14.71%	NONE
	85.29%	D1-D4
	10.46%	D1-D4
1/4/2022	100%	D0-D4
	23.73%	D1-D4
12/28/2021	100%	D1
	18.03%	D2
12/21/2021	100%	D1
	18.03%	D2
12/14/2021	100%	D0
	83.86%	D1
	18.03%	D2
12/7/2021	100%	D0
	83.86%	D1
	20.68%	D2
11/30/2021	11.62%	N0NE
	88.38%	D0
	56.92%	D1
	16.20%	D2
11/23/2021	11.62%	NONE
	88.38%	DO
	52.87%	D1
11/16/2021	11.62%	NONE
	88.38%	D0
	30.94%	D1
11/9/2021	11.63%	NONE
	88.37%	D0
	30.94%	D1
11/2/2021	11.63%	NONE
	88.37%	D0
10/26/2021	11.63%	NONE
	88.37%	DO
10/19/2021	99.61%	NONE
	0.39%	D0
10/12/2021 – 7/27/2021	100%	NONE
7/20/2021	10.41%	NONE
	89.59%	DO
7/13/2021	10.41%	NONE
	89.59%	DO
7/6/21	40.47%	NONE
	59.53%	D0
6/29/2021	96.80%	NONE
	3.20%	D0

6/22/2021 – 6/8/2021	100%	NONE
6/1/2021	43.11%	NONE
	56.89%	D0
5/25/2021	84.71%	NONE
	15.29%	D0
5/18/2021 – 5/11/2021	100%	NONE
5/4/2021	99.52%	NONE
	0.48%	D0
4/27/2021	99.52%	NONE
	0.48%	D0
4/20/2021	99.65%	NONE
	0.35%	DO
4/13/2021 – 12/3/2019	100%	NONE
11/26/2019	12.90%	NONE
	87.10%	DO
11/19/2019	100%	D0
	79.68%	D1
11/12/2019	100%	D0
	79.95%	D1
11/5/2019	100%	D0
	92.80%	D1
	17.61%	D2
10/29/2019	100%	D1
	57.18%	D2
10/22/201	100%	D1
	84.15%	D2
	11.54%	D3
10/15/2019	100%	D1
	84.15%	D2
	11.54%	D3
10/8/2019	100%	D1
	84.15%	D2
	11.53%	D3
10/1/2019	100%	D1
	14.83%	D2
9/24/2019	100%	D0
	63.98%	D1
9/17/2019	100%	D0
	12.55%	D1
9/19/2019	2.16%	NONE
	97.84%	D0
9/3/2019	22.44%	NONE
	77.56%	D0
8/27/2019 – 8/20/2019	20.85%	NONE
	79.15%	D0
8/13/2019	20.44%	NONE

	79.56%	D0
8/6/2019 - 7/30/2019	44.17%	NONE
	55.83%	DO
7/16/2019	85.90%	NONE
	14.10%	D0
7/9/2019	85.90%	NONE
	14.10%	D0
7/2/2019	99.97%	NONE
	0.03%	DO
6/25/2019 – 6/18/2019	97.97%	NONE
	2.03%	D0
6/11/2019	98.09%	NONE
	1.91%	D0
6/4/2019	44.11%	NONE
	55.89%	D0
5/28/2019 – 4/24/2018	100%	NONE
4/17/2018	77.15%	NONE
	22.85%	D0
4/10/2018	100%	D0
4/3/2018 – 3/13/2018	90.50%	NONE
	9.50%	D0
3/6/2018 – 2/13/2018	100%	NONE
2/6/2018 1/2/2018	100%	D0
12/26/2017	40.13%	NONE
	59.87%	D0
12/19/2017	100%	D0
12/12/2017	86.92%	NONE
	13.08%	D0
12/5/2017	86.92%	NONE
	13.08%	D0
11/28/2017 – 11/21/2017	87.16%	NONE
11/14/2017 – 11/7/2017	88.51%	NONE
10/31/2017	90.67%	NONE
	9.33%	D0
10/24/2017	90.71%	N0NE
	9.29%	D0
10/17/2017 - 10/10/2017	43.56%	NONE
	56.44%	D0
10/3/2017 – 9/12/2017	100%	NONE
9/5/2017	99.91%	NONE
	0.09%	D0
8/29/2017 – 5/23/2017	100%	NONE
5/16/2017	73.98%	NONE
	26.02%	DO
5/9/2017 – 5/2/2017	74.00%	NONE
	26.00%	D0

4/25/2017 -2/21/2017	100%	D0
2/14/2017 – 1/24/2017	100%	NONE
	14.43%	D1
1/17/2017 – 1/3/2017	100%	D1
	11.66%	D2
12/27/2016 – 12/20/2016	100%	D2
12/13/2016	100%	D1
	99.99%	D2
12/6/2016	100%	D1
	99.99%	D2
	76.14%	D3
11/29/2016 – 11/22/2016	100%	D3
11/15/2016	100%	D2
	79.73%	D3
11/8/2016 – 11/1/2016	100%	D1
	79.82%	D2
10/25/2016	100%	D1
	35.22%	D2
10/18/2016	100%	D0
	60.93%	D1
10/11/2016	100%	D0
	60.71%	D1
10/4/2016	100%	D0
	59.51%	D1
9/27/2016	100%	D0
	58.36%	D1
9/20/2016 – 9/13/2016	100%	D0
9/6/2016 – 8/9/2016	52.02%	NONE
	47.98%	D0
8/2/2016 – 7/19/2016	100%	D0
	18.39%	D1
7/12/2016	100%	D0
	19.37%	D1
7/5/2016 – 6/14/2016	100%	D0
6/7/2016 – 5/24/2016	100%	NONE
5/17/2016 – 5/10/2016	0.07%	NONE
	99.93%	D0
5/3/2016 -4/5/2016	100%	D0
3/29/2016	2.26%	NONE
	97.74%	D0
3/22/2016 – 10/6/2015	100%	NONE
9/29/2015	100%	D1
	12.63%	D2
9/22/2015 – 9/8/2015	100%	D2
9/1/2015 8/4/2015	100%	DO
	96.17%	D1

	3.76%	D2
7/28/2015	100%	D0
	75.45%	D1
7/21/2015	8.57%	NONE
	91.43%	D0
	39.28%	D1
7/14/2015	8.57%	NONE
	91.43%	D0
	32.43%	D1
7/7/2015 - 6/30/2015	91.43%	DO
	32.43%	D1
6/23/2015	18.75%	NONE
	81.25%	D0
	32.41%	D1
6/16/2015 – 6/9/2015	26.95%	NONE
	73.05%	DO
6/2/2015 – 5/26/2015	100%	DO
5/19/2015 – 4/21/2015	100%	NONE
4/14/2015 – 3/31/2015	100%	D0
3/24/2015	29.42%	NONE
	70.58%	D0
3/17/2015 – 11/25/2014	100%	NONE
11/18/2014	100%	D0
11/11/2014	2.24%	NONE
	97.76%	D0
11/4/2014- 10/28/2014	14.63%	NONE
	85.37%	DO
10/21/2014-8/5/2014	100%	NONE
7/29/2014	2.59%	NONE
	97.41%	D0
7/15/2014 – 7/08/2014	1.22%	NONE
	98.78%	D0
7/08/2014	20.97%	NONE
	79.03%	D0
7/1/2014 – 6/24/2014	22.29%	NONE
	77.71%	D0
6/17/2014 – 6/10/2014	32.73%	NONE
	67.27%	D0
6/3/2014-1/3/2013	100%	NONE
11/26/2013 – 11-19/2013	100%	D0
11/12/2013 – 4/23/2013	100%	NONE
4/16/2013	42.19%	NONE
	57.81%	D0
4/9/2013	12.59%	NONE
	87.41%	DO

	14.81%	D1
4/2/2013-3/5/2013	12.59%	NONE
	87.41%	D0
	16.47%	D1
2/26/2013	11.04%	NONE
	88.96%	D0
	16.47%	D1
2/19/2013 – 1/22/2013	100%	D0
	81.01%	D1
	12.77%	D2
1/15/2013	100%	D1
	55.27%	D2
1/8/2013	100%	D1
	56.06%	D2
1/1/2013	100%	D1
	56.42%	D2
12/25/2012-12/18/2012	100%	D2
12/11/2012-12/4/2012	100%	D1
	0.32%	D2
11/27/2012	100%	D1
11/20/2012	100%	D0
	96.96%	D1
11/13/2012 – 11/6/2012	100%	D0
	96.85%	D1
10/30/2012 – 10/23/2012	100%	D0
10/16/2012	62.15%	NONE
	37.85%	D0
10/9/2012 – 10/2/2012	4.27%	NONE
	95.73%	D0
9/25/2012	2.01%	NONE
	97.99%	D0
9/18/2012 - 9/4/2012	100%	D0
8/28/2012 – 8/14/2012	100%	D0
	43.39%	D1
8/7/2012	100%	D0
	50.46%	D1
7/31/2012 – 7/17/2012	100%	D0
	54.91%	D1
7/10/2012 – 7/3/2012	100%	D1
	100%	D1
	34.77%	D2
7/1//2012		Heat
6/30/2012		Excessive Heat
6/26/2012 – 6/5/2012	100%	D0
	75.44%	D1 Heat
5/8/2012 – 4/17/2012	100%	D1

	76.88%	D2
4/10/2012- 3/13/2012	100%	D1
	2.29%	D2
3/6/2012 – 2/07/2012	100%	D0
	87.01%	D1
	2.29%	D2
1/31/2012 – 12/27/2011	100%	D0
	87.01%	D1
	1.13%	D2
12/20/2011-12/13/2011	100%	D0
	88.43%	D1
	1.13%	D2
12/6/2011 – 11/29/2011	100%	D0
	88.43%	D1
	12.47%	D2
11/22/2011-11/15-2011	100%	D1
	32.03%	D2
	3.17%	D3
11/08/2011-10/25/2011	100%	D1
	35.14%	D2
	0.67%	D3
10/18/2011	100%	D1
	77.93%	D2
	0.68%	D3
10/18/2011	100%	D2
	42.35%	D3
10/4/2011	100%	D1
	99.98%	D2
	42.35%	D3
9/27/2011	100%	D1
	99.73%	D2
9/20/2011	100%	D2
9/13/2011	100%	D1
	72.12%	D2
9/6/2011 – 8/30/2011	100%	D1
	62.54%	D2
8/23/2011-8/16/2011	100%	D0
	42.91%	D1
7/11/2011		Heat Advisory
8/9/2011-7/5/2011	100%	D1
6/28/2011-6/7/2011	100%	D0 High Heat
5/31/2011-4/12/2011	100%	NONE
4/5/2011	99.69%	NONE
	0.31%	D0
3/29/2011	28.98%	NONE
	71.02%	D0

3/22/2011 – 3/8/2011	10.05%	NONE
	89.95%	D0
	26.14%	D1
3/1/2011	100%	D0
	86.98%	D1
2/22/2011 – 2/15/2011	100%	D0
	71.96%	D1
2/8/2011	100%	D0
	61.51%	D1
2/1/2011	100%	D1
	0.05%	D2
1/25/2011-10/26/2010	100%	D1
10/19/2010-9/21/2010	100%	D1
9/14/2010	100%	D0
	98.94%	D1
9/7/2010	0.72%	NONE
	99.28%	D0
8/31/2010 – 8/17/2010	100%	NONE
8/10/2010-8/3/2010	100%	D0
7/27/2010	100%	D0
	83.79%	D1
7/20/2010 – 6/29/2010	100%	D0
6/22/2010 – 10/6/2009	100%	NONE
9/29/2009	90.99%	NONE
	9.01%	DO
9/22/2009	35.72%	NONE
	64.28%	DO
9/15/2009	100%	D0
	99.54%	D1
9/8/2009	100%	D0
	99.97%	D1
9/1/2009	100%	D0
	40.30%	D1
8/25/2009	100%	D0
	27.05%	D1
8/18/2009 -7/7/2009	100%	D0
6/30/2009 – 1006/9/2009	100%	NONE
6/2/2009	77.05%	NONE
	22.95%	D0
5/26/2009-5/19/2009	1.33%	NONE
	98.67%	D0
5/12/2009 – 4/14/2009	100%	DO
4/7/2009	100%	D1
3/31/2009	100%	D1
	98.01%	D2
3/24/2009-3/3/2009	100%	D1

	46.15%	D2
2/24/2009-2/17/2009	100%	D1
	99.90%	D2
	3.31%	D3
2/10/2009	100%	D1
	41.10%	D2
2/3/2009	100%	D0
	89.21%	D1
	41.10%	D2
1/27/2009	100%	D0
	57.19%	D1
	5.61%	D2
1/20/2009	38.98%	NONE
	61.02%	DO
	28.52%	D1
	5.61%	D2
1/13/2009	38.98%	NONE
	61.02%	D0
	4.93%	D1
	1.11%	D2
1/6/2009 – 12/16/2008	100%	D0
	57.35%	D1
	2.16%	D2
12/9/2008	100%	D1
	79.28%	D2
	15.29%	D3
12/2/2008 – 10/28/2008	100%	D1
	94.70%	D2
	45.49%	D3
10/21/2008	100%	D1
	93.58%	D2
	44.71%	D3
10/14/2008	100%	D1
	93.40%	D2
	44.71%	D3
10/7/2008 – 9/23/2008	100%	D1
	94.58%	D2
	45.03%	D3
	0.20%	D4
9/16/2008	100%	D2
	77.34%	D3
	0.20%	D4
9/9/2008 – 9/2/2028	100%	D2
	73.15%	D3
	0.20%	D4
8/26/2008	100%	D3

	0.20%	D4
8/19/2008 – 7/1/2008	100%	D4
6/24/2008	100%	D3
	99.79%	D4
6/17/2008	100%	D3
	29.29%	D4
6/10/2008 – 5/27/2008	100%	D3
5/20/2008 – 4/29/2008	100%	D2
	85.69%	D3
4/22/2008 – 3/11/2008	100%	D3
3/4/2008 – 2/26/2008	100%	D3
	95.43%	D4
2/19/2008 – 10/2/2007	100%	D4
9/25/2007 – 9/11/2007	100%	D3
9/4/2007	100%	D2
	99.93%	D3
8/28/2007 – 8/21/2007	100%	D3
8/14/2007	100%	D2
	3.24%	D3
8/7/2007	100%	D2
7/31/2007	100%	D1
	14.40%	D2
7/24/2007 – 5/29/2007	100%	D1
5/22/2007 – 5/1/2007	100%	D0
	99.71%	D1
4/24/2007 – 4/17/2007	100%	D0
	0.02%	D1
4/10/2007	100%	D0
	27.07%	D1
4/3/2007 – 3/27/2007	100%	D0
3/20/2007	97.86%	NONE
	2.14%	D0
3/13/2007 – 10/31/2006	100%	NONE
10/24/2006	90.85%	NONE
	9.15%	D0
10/17/2006 – 10/10/2006	36.99%	NONE
	63.01%	D0
10/3/2006 – 9/19/2006	100%	NONE
9/12/2006 – 9/5/2006	100%	D0
8/29/2006	96.97%	NONE
	3.03%	D0
8/22/2006	6.20%	NONE
	93.80%	D0
	0.32%	D1
8/15/2006	100%	D0
	1.08%	D1

8/8/2006 – 7/18/2006	100%	D1
7/11/2006	100%	D0
7/4/2006	100%	D0
	0.27%	D1
6/27/2006	100%	D0
	37.53%	D1
6/20/2006	100%	D1
6/13/2006	100%	D1
6/6/2006 – 5/23/2006	100%	D1
	73.70%	D2
6/20/2006	94*	HEAT
5/16/2006	100%	D2
5/9/2006 – 4/25/2006	100%	D1
	16.62%	D2
4/18/2006	100%	D1
	27.83%	D2
4/11/2006	100%	D1
4/4/2006-3/28/2006	100%	D0
	66.24%	D1
3/21/2006-2/28/2006	100%	D0
2/21/2006	30.92%	NONE
	69.08%	D0
2/14/2006 – 12/6/2005	100%	NONE
11/29/2005 -11/1/2005	100%	D0
10/25/2005	99.76%	NONE
	0.24%	D0
10/18/2005 – 10/11/2005	100%	NONE
10/4/2005	100%	D0
	99.96%	D1
9/27/2005 – 9/20/2005	100%	D0
9/13/2005 – 3/1/2005	100%	NONE
2/22/2005 – 2/15/2005	51.53%	NONE
	48.47%	D0
2/8/2005 – 1/11/2005	100%	NONE

Location

The Appalachian Region experienced a severe drought between 1998 and 2003. Other droughts have occurred in this region during 1931-35, and Livestock Feed Assessment Reports confirm the droughts of the summer have devastated crops and pastures in Cherokee County. Soybeans and other crops have perished due to extreme heat and below normal rainfall. Pastures and hay crops were extremely short with poor prospects for fall. There are few, if any, cases of livestock deaths due to droughts. Droughts are region-wide natural disasters, meaning that it happens across the entire county, including jurisdictions, and will be addressed that way.

Extent

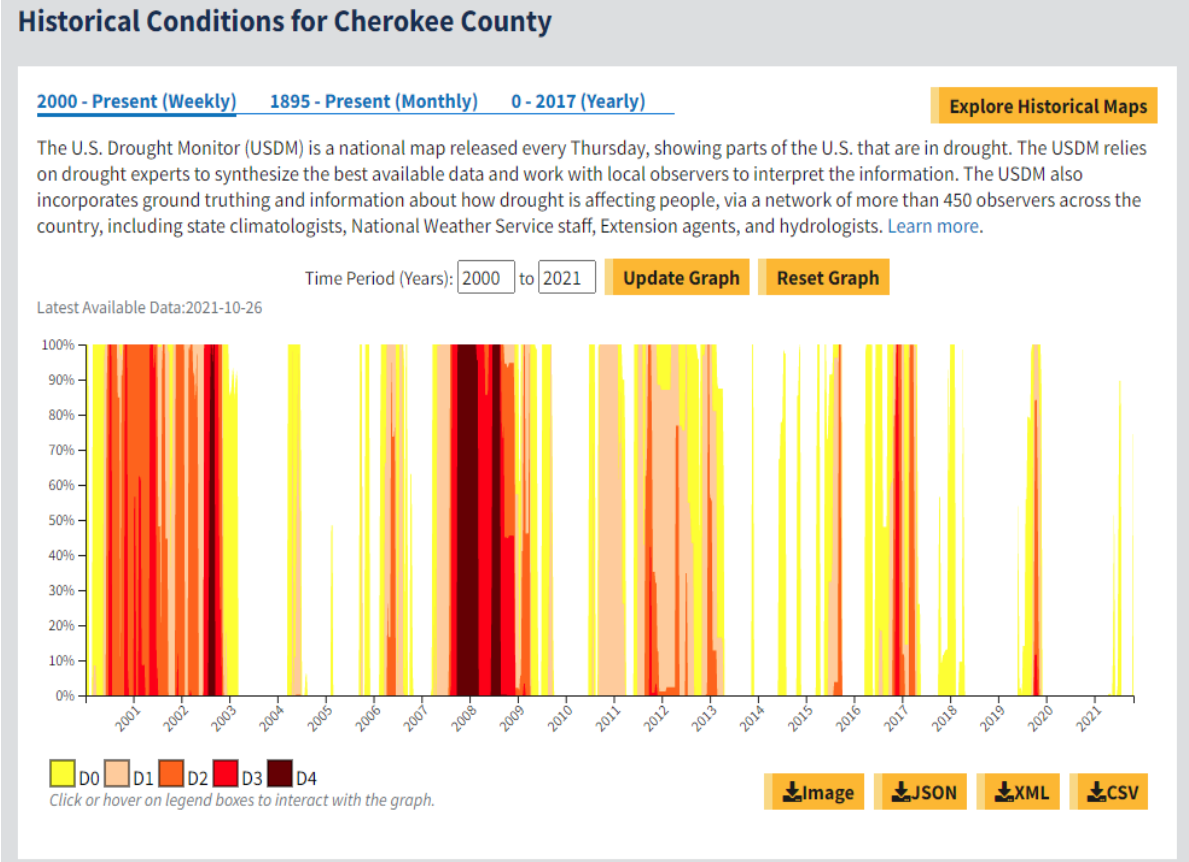
The City of Gaffney, The Town of Blacksburg and Cherokee County has experienced 384 periods of abnormally Dry (DO) or greater drought conditions and 5 periods of heat between February 8, 2005 – April 5, 2022. One period of drought lasted 8 months. Over the past 127 years, October 2021 was the 44th driest, on record, which was down 1.34 inches of rain from normal. 2021 was the 41st driest year experienced in the county, in the past 127 years with precipitation down 4.49 inches from normal. Insufficient data could be found to define losses / damages due to drought

Droughts are region-wide natural disasters, meaning that it happens across the entire county, including jurisdictions, and will be addressed that way.

Probability

During the last 17 years, Cherokee County has experienced 389 episodes of heat and drought. This gives us a recurrence interval of 0.043. This presents with a 22.9% Hazard Frequency per year.

TABLE 26- CHEROKEE COUNTY HISTORICAL DROUGHT CONDITIONS GRAPH



Overall, the region has a moderate level of vulnerability to drought. There is a moderate probability (0.43%) that the region would suffer a drought in any one year. Droughts can greatly affect the agricultural production of the area as well as affect water treatment and wastewater treatment operations. This can have additional impacts that affect the ability of the region to function. Stouffer's, who is a major food processing

industry, is a major employer in Cherokee County. Water shortages could hurt their production activities, which in turn would affect their employee's abilities to work.

EARTHQUAKES

Earthquake is a term used to describe both sudden slip on a fault and the resulting ground shaking and radiated seismic energy caused by the slip, or by volcanic or magmatic activity, or other sudden stress changes in the earth (USGS).

Magnitude and intensity are important to understand, when discussing earthquakes. The following information is from the USGS: "Magnitude and Intensity measure different characteristics of earthquakes.

Magnitude measures the energy released at the source of the earthquake. Magnitude is determined from measurements on seismographs. Intensity measures the strength of shaking produced by the earthquake at a certain location. Intensity is determined from effects on people, human structures, and the natural environment. The Table 18 below gives intensities that are typically observed at locations near the epicenter of different magnitudes."

TABLE 27 - Earthquake Magnitude/Intensity Comparison

Magnitude	Intensity	Description
1.0-3.0	I	I. Not felt except by a very few under especially favorable conditions.
3.0 – 3.9	II – III	II. Felt only by a few persons at rest, especially on upper floors of buildings. III. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
4.0 -4.9	IV-V	IV. Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors distributed, walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably. V. Felt by early everyone, many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
5.0 – 5.9	VI - VII	VI. Felt by all, many frightened. Some heavy furniture moved, a few instances of fallen plaster. Damage slight. VII. Damage negligible in buildings with partial collapse. Damage great in poorly built or badly designed structures, some chimneys broken.
6.0 – 6.9	VII – IX	VIII. Damage slight in specially designed structures, considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. IX Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundation.
7.0 and higher	VIII or higher	X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent. XI. Few if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.

		XII. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

http://neic.usgs.gov/neis/general/mag_vs_int.html

Location

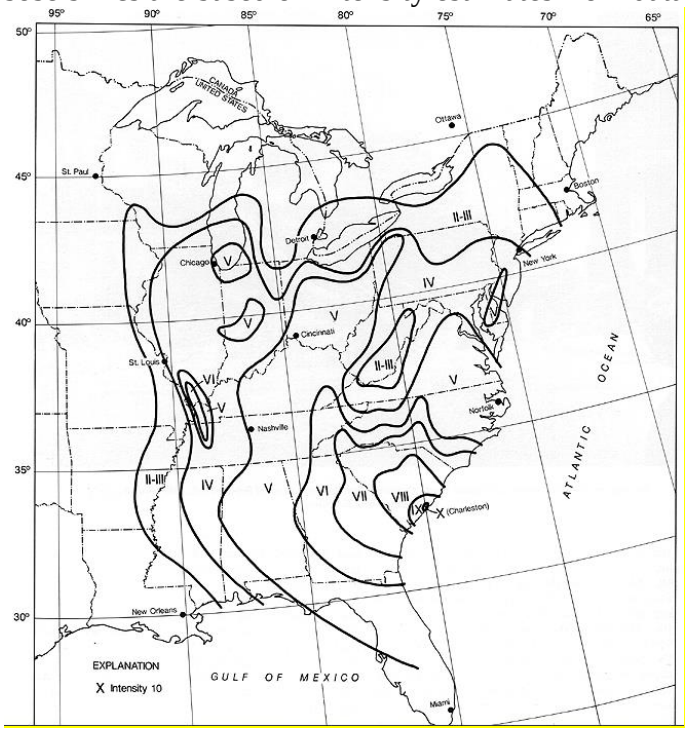
Seventy percent of earthquakes in South Carolina originate from the Middleton Place-Summerville Seismic Zone. This seismic Zone is distanced from the Appalachian Region of South Carolina. There have been 70 earthquakes throughout the region.

Extent

Gaffney, Blacksburg nor Cherokee County have never experienced an earthquake, history shows a very real possibility of future quakes. There is an average of ten to fifteen earthquakes annually in the State of South Carolina. Of these ten to fifteen, about three to five of them are felt by residents. Two of the earthquakes (1886 – 1913) originating in the Charleston area have been considered to be some of the most destructive earthquakes in United States history (SCEMD). Table 28 the Isoseismic Map presented below illustrates the 1886 Charleston Earthquake, which registered a 7.3 magnitude. According to the magnitude / intensity chart (Table 27) on the preceding page, during a 7.3 earthquake, we could expect the shaking would be sufficient to destroy well-built wooden structures, masonry and frame structures, and bend rails. Bridges would be destroyed, objects would be thrown into the air and there would be total damage

Table 28 - Isoseismic Map

soseismics are based on intensity estimates from data



http:www.scearthquakes.com/

Probability

The reoccurrence interval of a large earthquake (Like the Charleston one) to happen is 500 years. (http://www.scearthquakes.com/). There have been only three epicenters in the region, over many years. Since 1698, there have only been two major earthquakes originating from the Middleton Place-
Summerville Seismic Zone.

Vulnerability

Cherokee County has had 0 recorded earthquakes in the past. The area is less likely to practice earthquake preparations and safety. The municipalities of Gaffney and Blacksburg would be more vulnerable than in the rural parts of the county. The City of Gaffney has a greater number of multi-story buildings, historic structures, and critical community facilities located within its jurisdiction. Also, with the shopping centers, mall and the higher population densities, the recovery cost and time, as well as the number of injuries and fatalities would be much greater. Much of the incorporated area also utilizes natural gas which may become damaged during a quake and present with an explosion hazard. Since major employers of the county are located within this jurisdiction, damage from an earthquake could cease operations and prevent citizens from working. Gaffney would have a high level of vulnerability to an earthquake.

Not as populated as Gaffney, Blacksburg could also present with numerous injuries and fatalities during an earthquake due to higher population densities. With buildings located in close proximity to each other, critical community facilities, and utilities used, they too would present with a high level of vulnerability to an earthquake.

The county has fewer critical community facilities and a lower population density than the jurisdictions, which are spread out over a larger area. Utility structures used in the county are somewhat different than in the jurisdictions, therefore, they would be less likely to experience a fire or explosion hazard. One exception to this is the three high pressure trans-continental pipelines that run thru the northern part of the County. These pipelines are a critical part of our National Infrastructure. Otherwise, there are fewer structures located in this area which are critical to daily business operations All these factors combined make the county much less vulnerable to the effects of an earthquake. Therefore, the county would have a low vulnerability to an earthquake.

WILDFIRE

Wildfire is any uncontrolled fire that occurs in the countryside or wilderness area. Wildfires can spread quickly, have the potential to change direction and have the ability to jump gaps (i.e. roads, rivers, and firebreaks). They can cause extensive damage to property and human life which are caught in their path. The speed at which they spread and amount of damage sustained depend on the current weather characteristics and the fuel load present.

There are a significant number of forest fires in Cherokee County each year. Wildfires can result from natural causes, but for the years 2004 – 2009 (2010 data not available) the major cause of these fires was human error. Although the total number of wildfires in each county is documented, there is not a current database or any map data

that represents precise locations within each county. Table 20 below explains the Date and Acres involved.

TABLE 29 – Cherokee County Wildfires (S.C Forestry Commission)

Date	Number of Fires	Extent	Impact
3/1/1964	1		$908.71
12/1972	1		$1409.04
6/1973	1	1006.32	
6/8/1973	1		$10,063.48
7/1975	1		$669.03
10/1975	1	1852.71	
3/1983	1		$28,282.18
12/1983	1		$3335.83
3/1/1985	1		$26,179.35
4/1/1985	1		$261.80
8/1989	1		$10,449.78
1996	50	158.80	
1997	27	71.7	
1998	25	196.0	
1999	41	273.5	
2000	49	272.0	
2001	59	528.9	
2002	53	241.7	
2003	16	98.9	
2004	24	162.1	
2005	20	150.8	
2006	70	78.9	
2007	26	73.9	
2008	43	96.8	
2009	10	15.2	
2010	22	20.2	
2011	NO DATA AVAILABLE		
2012	9	11.5	
2013	11	23.5	
2014	20	68.6	
2015	15	37.1	
2016	19	90.8	
2017	NO DATA AVAILABLE		
2018	NO DATA AVAILABLE		
2019	9	11.6	

Location

As noted above, Cherokee County experiences numerous wildfires each year, however most are controlled fairly quickly and do not destroy large amounts of property. The costliest fire occurred on March 1983 with $28,282.18 in damages. 2001 suffered the most fires (59) and most acreage (528.9) in any given year. No lives in Cherokee County have been lost in recent history due to wildfire. At present, there is not a current database of fire locations or any map data that represents precise locations within the county.

Probability

For the years of 1964 through 2019 (55 years), there were 618 forest fires in Cherokee County with 2,819.3 acres burned. This gives Cherokee County a recurrence interval of .0.4 and a hazard frequency of 26.9% chance per year to experience a wildfire. Combined damage costs for these fires have been documented as $86,100.73. At present, there is not a current database of fire locations or any map data that represents precise locations within the county.

Vulnerability

Wildfires can occur anywhere in the county, although the Northwest and Northeast sectors present with the more rural setting, characterized by large forested and agricultural tracks, which would present with a greater fuel load. Contained in the Northwest sector, the Cowpens National Battleground, Lake Whelchel, Scenic Highway 11, and the Peachoid provide scenic and recreational amenities, the loss of which would have a notable economic impact.

Likewise, the Northeast sector contains Kings Mountain Military Park and the scenic Broad River, which provide recreational amenities also. The probability of one or more wildfires occurring in Cherokee County is very high (100%). Overall, when taking into consideration the high probability of fire in the county, and the past history of the event, the county has a moderate level vulnerability to wildfire while the municipalities have a low vulnerability to wildfires due to fuel load.

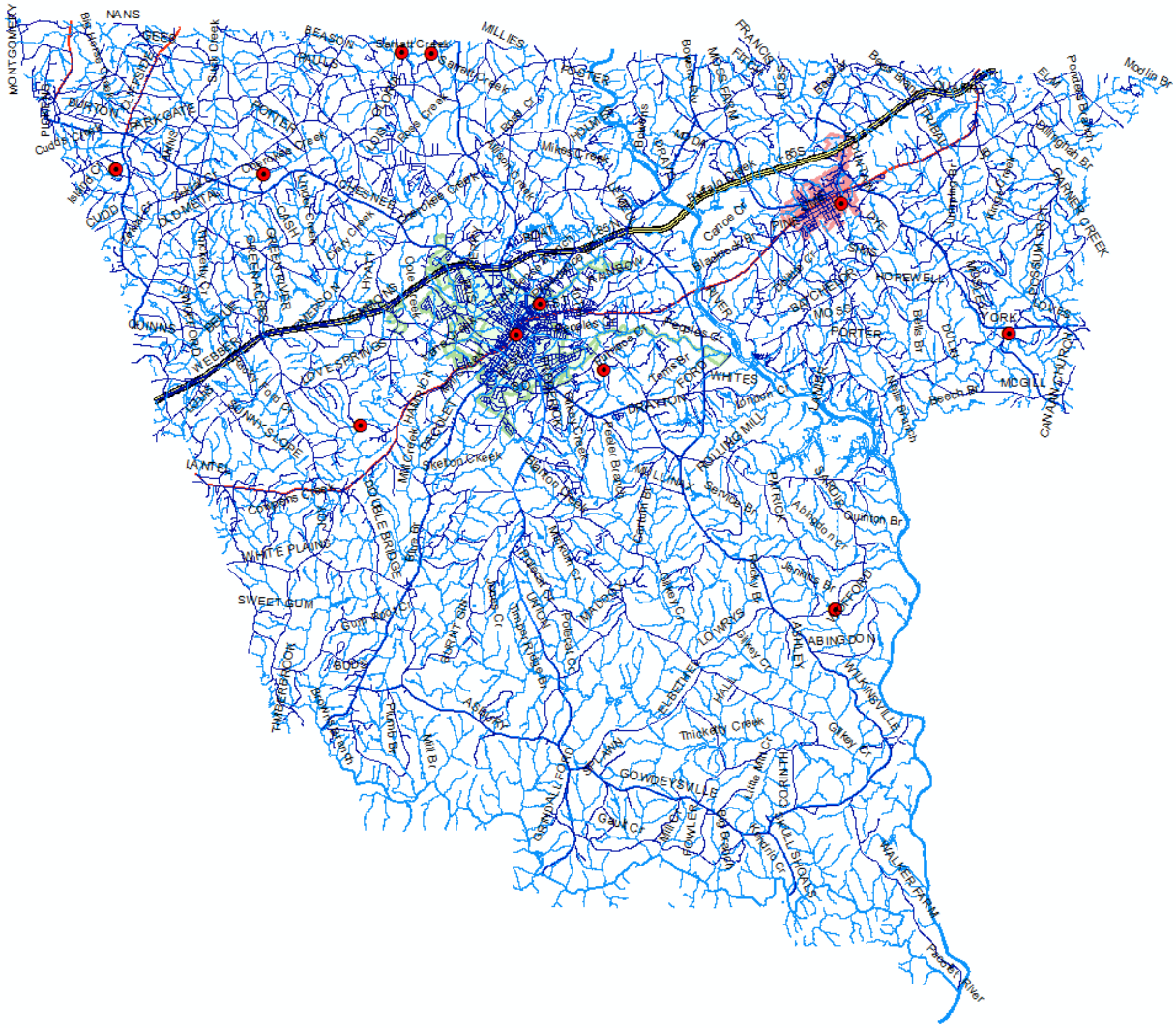
FLOOD

Flooding is defined as a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters; the unusual and rapid accumulation or runoff of surface waters from any source, or mudflows or the sudden collapse of shoreline land. Identification of floodplain areas within the county and the incorporated municipalities was based on the most recent Flood Insurance Rate Maps (FIRM) produced by FEMA. These maps display the locations of all the major water bodies in the county and delineate the 100-year floodplain boundaries (Zone A), however, the maps are not available in digital format and cannot be displayed in this plan. These are areas that have a one percent chance of equaling or exceeding the recorded base flood elevation during any year. Based on these maps, each county and municipality have 100-year floodplains within their jurisdictions. Each community may also have additional flooding problems not represented on the floodplain maps. Nuisance flooding impacts many roads due to poorly designed and maintained drainage systems.

Location

Table 30 below shows waterways located within the county. Red dots mark problem areas which experience reoccurring problems during heavy rains.

Table 30- Cherokee County Waterways



On February 3, 1981, a Flood Insurance Study was conducted for South Carolina Department of Natural Resources. The study included all jurisdictions for Cherokee County. Hydrologic and hydraulic analyses were updated on September 16, 2011 by Watershed Concepts-AE ComWater. Tables 2 & 3 from that study are found below to show possible extent from future flooding events. These are the most current, however, at the time of this five-year update (11/04/2021), SCDNR is starting the process of a Map Update for the upper Broad Watershed, which includes Cherokee County.

During the initial information gathering by the Hazard Mitigation Team, and through feedback from the public surveys, additional problematic streams were identified. They were: Doolittle Creek, Island Creek, Kings Creek, and Sarratt Creek. Beavers, low bridges and waterway flow were identified as the causes of flooding during periods of heavy rains on these particular creeks.

TABLE 31– Cherokee County Flooding Events (SHELDUS), EM Records

Jurisdiction	Date		Type	Injury/Deaths	Property & Crop Damages
County	**3/1/1964**		**Flooding**		**$908.71**
County	3/1/1966 – 3/5/1966		Flooding		$8.694.15
County	**2/3/1973**		**Flooding**		
County	**6/8/1973**				
County	**6/1973**		**Flooding**		
County	1975			1 Injury	$5,235.88
County	1975				$669.03
County	1976				$ 60,375.71
County	6/6/1977			1 injury	$464.85
County	1/1978		Flash Flooding		
County	3/1980		Flooding		$3,418.57
County	1/1/1982				$610.34
County	1/1/1983				$2,282.18
County	1984				$2,711.17
County	8/1985				$15,053.12
County	3/1/1987		Flooding		
County	1989		Flood		
County	10/1990				
County	10/1990				
County	10/1990				
County	7/1991		Flooding		$95,137.75
Gaffney	1995		Flooding	1Fatality	$42,512.22
County	**3/20/2003**		Flood		
County	**4/10/2003**		Flood		
County	5/22/2003		Flood		
Gaffney	7/13/2003		Flash Flood		
County	9/7/2004		Flash Flood		$23,000
County	9/7/2004		Flood		$20,000

Gaffney	7/31/2003		Flash Flood		
County	10/7/05		Flood	0	375.00K
County	9/7/04		Flash Flood	0	23K
County	9/7/04		Flood	0	40K
County / Gaffney	5/26/2009		Flash Flood		
County	2011				
Blacksburg	7/3/2013		Flash Flood		
Gaffney	8/1/2014		Flooding		
Grassy Pond	6/7/2019		Flash Flood		1.00K
Grassy Pond	2/6/2020		Flash Flood		$50,000
Grassy Pond	2/7/2020		Flooding		$50,000

Extent

The greatest floods in Gaffney's history were the floods of June 1903, July 1916, and August 1928. Limited information is available on the magnitude of these floods. No discharge records are available on any of the streams studied in this report. Newspaper articles available in the records of the Gaffney Ledger stated that the 1903 flood caused an estimated three million dollars property loss. In 1916 the newspaper records revealed that the Broad River was twenty-four (24) feet above normal and had a maximum rate of rise of two (2) feet in ten minutes. The 1928 flood was said to be less than the 1916 flood. (Flood Insurance Study). No historical flood depths were found but according to riskfactor.com, "Gaffney has minor risk from flooding"

The Greatest floods in Cherokee County's history were the floods of June 1903, July 1916, and August 1928. Limited information is available on the magnitude of these floods. No discharge records are available on any of the streams studied in this report. Newspaper articles available in the records of the Gaffney Ledger stated that the 1903 flood caused an estimated three million dollars property loss. In 1916, the newspaper records revealed that the Broad River was twenty-four (24) feet above normal and had a maximum rate of rise of two (2) feet in ten minutes. The 1928 flood was said to be less than the 1916 flood. No discharge data is available and no known high-water marks exist which would provide evidence of magnitude and frequency of previous flooding along these streams. (Flood Insurance Study).

Data for the greatest floods in Blacksburg history was not found, however, a Fire Chief with the Town of Blacksburg reported Doolittle Creek had risen 9 feet in the past to reach steps of the Brugg Street Apartments. The apartments had to be evacuated due to the flooding...

Changes From the Last Plan

Gaffney has experienced 5 flooding events in the past 55 years. One flooding incident which occurred on August 22, 1995, caused $42,512.22 in damages and accounted for one fatality when the remnants of Tropical Storm Jerry claimed the life of an eight-year-old boy who fell off a skateboard and was swept into a drain pipe by the heavy rain. A man, who was asleep in his car, had to be rescued by the Fire Department, when rising waters trapped him. Sections of 10 roads became impassible as rains continued to soak the

county. Standing water, road shoulders being washed away and drainage pipes crumbling contributed to the closures. There was also one other injury with these flooding events.

Blacksburg had one flood event in the 55-year period, without injuries or fatalities. During the community survey, Blacksburg residents cited the Brugg Street Bridge as having a flooding problem.

Cherokee County has experienced 35 flood events in the past 56 years. There was $777,561.46 in documented damages with them and 2 injuries.

On October 7-8, 2005 flooding first developed near the Spartanburg County line, when Cowpens-Pacolet Road flooded. By early evening, flooding became quite serious, with swift water rescues becoming necessary in several area. Several cars became stranded in flood water on Soapstone Road near Thicketty. At least four bridges were washed out. By mid-evening, a total of twenty-five roads were closed in the western part of the county, including Fairview Road, Green River Road, Champion Road and Potter Road. Some roads were covered with as much as 4.5 feet of water. By late evening, Thicketty Watershed Lake between Gaffney and Cowpens overflowed, sending water into 4 or 5 homes, forcing evacuations. Western portions of the county likely received up to fifteen inches of rain in the 48-hour period ending on the morning of the eighth.

On February 7, 2020, unusually high levels of moisture for early February combined with a slow-moving frontal system to produce an extended period of moderate to heavy rainfall across Upstate South Carolina from the morning of the fifth until the early morning hours of the seventh. Intense rain rates associated with bands of heavy rain showers and embedded thunder storms developing along the front during the morning and afternoon of the seventh resulted in rather widespread flash flooding. A tornado also developed during this time in the Spartanburg area. Total rainfall of three to sic inches resulted in flooding persisting along some main stem rivers and larger streams well into the seventh. Although heavy rainfall tapered off across Cherokee County throughout the afternoon, high water conditions persisted due to runoff. This included moderate, record flooding along the Broad River. Multiple low-lying roads were inundated, including Little Hope Road and River Road, as was the Cherokee Ford Road Recreation Area. The stream gauge at Blacksburg indicated the river reached its highest level since at least 1997.

TABLE 32 – Flooding Probability

Jurisdiction	# of Events	Years	Recurrence Interval (years)	Hazard Frequency % chance / year
Gaffney	5	55	11	0.09
Blacksburg	1	55	55	0.02
County	35	56	1.6	0.63

Vulnerability

Overall, Cherokee County has a moderate level vulnerability to flooding. The numerous streams and waterways create areas that do commonly flood. The Hazard Mitigation Plan Committee identified numerous problem areas which flood and their causes. Overall, Cherokee County has a moderate vulnerability to flooding because of the numerous lakes and streams located within its boundaries.

3.2 National Flood Insurance Program Compliance

The National Flood Insurance Program (NFIP) is a pre-disaster flood hazard mitigation and insurance protection program which has reduced the increasing cost of disasters. The intent of the program is to: require new and substantially improved structures be designed and constructed to minimize or eliminate future flood damage; provide floodplain residents and business owners with financial insurance assistance in the form of insurance after floods; and it transfers most of the cost of private through flood insurance premiums. Participation in the NFIP is based on an agreement between communities and FEMA.

Currently Cherokee County and the City of Gaffney are participants in the NFIP, however, Blacksburg is not. Blacksburg proactively addresses and mitigates problem areas with repeated losses and discourages building in flood zone areas. The Town is in the final stages of adopting its first edition of Land Development Standards, including stormwater control measures and stormwater infrastructure standards. Also, the Town has completed one stormwater project in the last six months to alleviate and reduce long-term flood damage, with another stormwater project to be completed this year. The Town does not have any defined flood plain areas within the Town's corporate limits as of April 13, 2022, according to the most recent version of FEMA flood plain maps.

According to the National Flood Insurance Program, repetitive flood loss is defined as a facility or structure that has experienced two or more insurance claims of at least $1,000 in any given ten-year period since 1978. According to Department of Natural Resources, Cherokee County has one repetitive loss residential structure. The structure lies outside the incorporated areas of the county and has sustained two losses. This structure is not located in a flood plain. There has been 3 closed paid losses filed in Cherokee County

3.3 Social Vulnerability

According to social science research, certain social descriptors can help to portray populations that are vulnerable to natural hazards. Factors such as age, gender, race, housing, and income can be indicators of vulnerability. The University of South Carolina has determined the method for determining social vulnerability. This methodology was carried out by the Hazard Mitigation Plan Team and is described below.

There are eight vulnerable population subgroups. These subgroups are the following: number of people less than 18 years, number of people over 65 years of age, number of females, number of non-whites, number of housing units, total population, number of mobile homes, and mean house value. The following is USC's reasoning behind using these eight social factors.

Number of people less than 18 years of age

This variable is useful as an indicator of the location of dependent populations. Particularly the youngest members of this population group will need assistance during a hazard event and are more prone to respiratory distress form inhaled toxins. This population may also have less ability to recover quickly after a disaster.

Number of people over 65 years of age

This variable is useful as an indicator of the location of dependent populations. Particularly the oldest members of this population group will need assistance during a hazard event and are more prone to respiratory distress from certain inhaled toxins. This population may also have less ability to recover quickly after a disaster.

Number of females

This variable has been shown in the social science literature to be correlated with a lack of resources and influence, limiting the range of adjustments available to them during an emergency. Certain toxins are also threating to women's reproductive health. This population may also have less ability to recover quickly after a disaster.

Number of non-whites

Often correlated with a lack of resources, race has also been shown by some research to exist alongside less desired land used that includes industry and transportation networks. This population may also have less ability to recover quickly after a disaster.

Number of housing units

Determining the intersection of hazard zones and areas occupied by humans drives the hazards assessment. The number of housing units serves as an indicator of where the greatest number of people reside, an important consideration when combined with known areas of hazard occurrence.

Total population

Like housing units, the total population variable is an important consideration when combined with known areas of hazard occurrence. While this data could also be used to determine population density, or the same percentage of elderly, but one may have a vastly greater number of people, and important consideration from an evacuation standpoint.

Number of mobile homes

This variable is an indicator of housing stock that is of a lower structural quality than standard housing. Hazards with high wind speeds are particularly troublesome for this type of housing construction.

Mean house value

This variable is used as a surrogate measure of income. Mean house value can; however, indicate the economic statues of individuals. Lower house values may indicate a more vulnerable population due to lack of resources for mitigation and recovery or housing that is of a lower structural quality.

Calculating Social Vulnerability Scores

According to the USC, the method for calculating the socially vulnerable areas is the same for each variable except for mean housing value. For the seven, the percentage for each was determined by dividing the number of each variable in the block group by the total number of that variable for the entire county and then scaled for final vulnerability summation.

Example 1,

Step 1: Calculate X

X= # of Mobile Homes in Census Block Groups

# of Mobile Home in County

This determines the percent of the county's mobile homes in each block.

Step 2: Calculate Mobile Home Score by dividing X by maximum X

Mobile Home Score = X/maximum X

This places values in the same scale as other social variables.

Example 2,

Step 1; Calculate X

X = County Average Mean House Value – Mean House Value for Census Block Group

This determines how different each block is from the county mean.

Step 2; Calculate Y

Y = X + Absolute Value of Maximum X

This removes all of the negative values

Step 3; Calculate Mean House Value Score

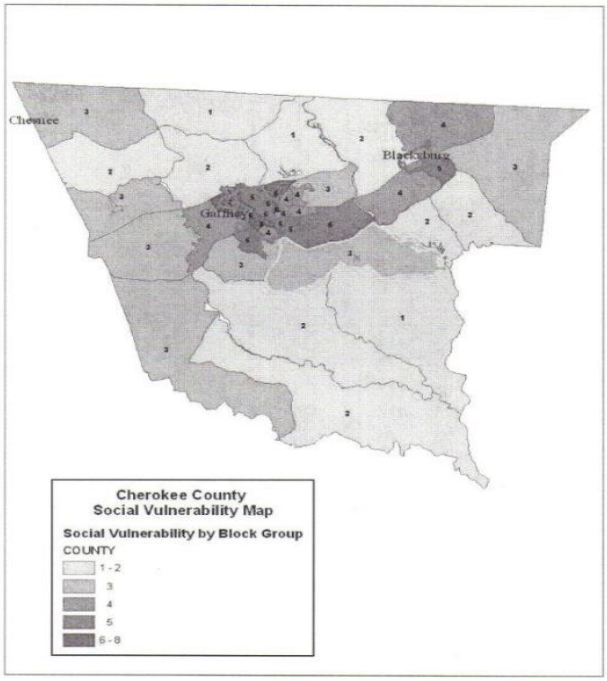
Mean House Value Score = Y/maximum Y

This places values in the same scale as other social variables.

Overall Social Vulnerability Scores

The social vulnerability scores for each social factor are added up for each block group in the county. The block groups can then be compared to each other to determine the most socially vulnerable population to natural hazards. These numbers have been applied to each county map to visually portray the most socially vulnerable areas. Those with lower scores (1-2) are much less vulnerable than those with higher scores (6-8). The map shows the most socially vulnerable areas to natural hazards within the county and municipalities. We will use the same map and block groups since only partial 2010 census data has been released and existing data is not broken down in same categories. A great deal of growth has not been recognized since last census.

Table 33 – Cherokee County Social Vulnerability Map



3.4 **Community Mitigation Capability Assessment**

The main purpose of this section is to examine the policies, ordinances, and codes that have been put in place to reduce the impacts of natural hazards. The following is a compilation of policies concerning natural hazards, mitigation, and emergency preparedness, reviewed by the Appalachian Council of Governments. This section is essential for the examination of current natural hazard mitigation. The review of the following plans aided the development of this hazard mitigation by allowing the plan developers to see what is already in place to deal with natural hazards. Policies, actions, and projects directly addressing natural hazard mitigation are limited currently. Recommendations for policies and plan considerations will be incorporated into future community planning efforts.

Each County will work to implement disaster mitigation policy and regulatory recommendations in their operations and plans where they are appropriate and can be incorporated. Comprehensive plans and zoning ordinances exist in the municipalities of Gaffney and Blacksburg. Integrating mitigation concepts and policies with existing comprehensive plans provides an expanded means for implementing initiatives through established, legal frameworks. The foundations of these plans lie in the promotion of health, safety, efficiency, and well-being for all segments of the population. Some of the primary plan objectives include preservation of the County's unique natural environmental and historic features, creation of a stable and diverse economy, and promoting sustainable

developments. Currently, there is no consideration of hazard mitigation incorporated into any of the plans. Part of ongoing efforts to improve mitigation planning will need to include finding opportunities where the implementation of local policies and initiatives in comprehensive plans support the mitigation recommendations presented in this plan.

Each community has building codes and zoning regulations that are applied to development. Adherence to these standards does support mitigation initiatives outlined in this plan although they were not developed for this reason. Each zoning ordinance contains regulations limiting development within the floodplain. Building code standards also directly address mitigation concerns by requiring all new construction to meet certain safety standards. International Building Code Standards consider the types, frequency, and intensity of hazards present in the region in determining what is needed for adequate construction. Consequently, structures that are built to applicable codes are inherently resistant to many hazards like strong wind, floods, and earthquakes.

Cherokee land development regulations are applied throughout the County. There is no County wide zoning in Cherokee County. The land development regulations require erosion control practices for ground disturbing activities, protection of existing waterways, and limits development within the floodplain. These practices and others promote best management practices and reduce the risk of flooding hazard in particular areas. In addition, land development regulations can be used to specifically restrict growth in high risk areas.

By developing a table compiling each hazard which threatens a given jurisdiction, and the number of events occurring in that jurisdiction, in a given time frame, it helps us to see what types of events are more frequent in that particular jurisdiction. However, winter storms and drought are considered to occur countywide and are addressed as such. Existing wildfire data used was calculated countywide and will also be addressed that way.

Table 34 below shows the all hazards probability for each jurisdiction. In addition to hazard frequency, additional data such as critical community facilities, historic buildings / properties, total population and the concentration of that population within any given jurisdiction affect the devastation any hazard may impact an area. This information is contained in Table 35, which will give us an idea of the monetary cost, possible numbers of injuries / deaths to expect from a disaster and recovery times we could expect to experience because of them.

Table 34: All Hazards Probability by Jurisdictions

HAZARD	NO. OF EVENTS / NO OF YEARS			REOCCURENCE INTERVAL (IN YEARS)			HAZARD FREQUENCY % (CHANCE PER YEAR)		
	Gaffney	Blacksburg	County	Gaffney	BlacksBurg	County	Gaffney	BlacksBurg	County
Tornado	4/15	32/51	20/66	3.75	6.3	3.3	4.95%	1.59 %	0.30%
Wind	97/38	68/56	208/60	.39	.82	.29	2.55%	11.3%	3.5
Winter Storm	---------	--------	150/61	3.75	--------	.41	--------	----------	2.46%
Flood	5/55	1/55	33/55	.39	55	1.7	0.09	0.02	0.6%
Hurricane	----------			---------					
Hail	53./35	28/31	66/56	1.51	1.11	8.5	.66	.90	1.13%

Drought / Heat				61/36			.60			1.07%	
Earthquake	----------	--------		--------	---------	---------	---------	---------	---------	---------	
Wildfires	----------	---------		618/55	---------	--------	---------	---------	---------	26.9%	

Table 35: Additional Jurisdiction Statistics.

Statistic	Gaffney	Blacksburg	County
Critical Community Facilities	23	9	23
Historic Buildings / Properties	5	0	13
Total Population	12,723	1,888	56,216
Persons Per Square Mile	1,62.7	993.6	141.6

To assess and evaluate hazards, four criteria were established and each hazard was given a rating of "high", "medium" or "low" risk.

1. History – A record of occurrences
2. Vulnerability – The number of people and the value of property that could be affected.
3. Impact – Assuming the greatest event possible and the worst-case scenario.
4. Probability – The likelihood an event will occur (chances per year).
5. Priority Score – Composite score value for each hazard weighing priority attention to planning.

In the scoring system, each of the four criteria identified for describing and analyzing potential hazards is assigned a rating and their respective number.

Low 1 point
Medium 5 points
High 10 Points

Since some criteria are judged to be more important than others, a weighting factor was established to balance out the total scoring. The following weights are used:

History 2
Vulnerability 5
Impact 10
Probability 7

A composite score for each hazard is arrived at by multiplying the score value assigned to each criterion by its weight and then summing the four totals. For example:
Hazard: Flood

History Medium 5 pts. x 2 (weighting factor) = 10 pts
Vulnerability Medium 5 pts. x 5 (weighting factor) = 25 Pts.
Impact High 10 pts. X 10 = 100 pts.
Probability Medium 5 pts. X 7 (weighting factor) = 35 pts.
Total = 160 Pts.

All information has been compiled and created as to the various hazards in the individual jurisdictions. Those hazards with the highest numerical scores will receive priority attention for planning and mitigation purposes. The methods used for determining the rating of high, medium and low risks are as follows:

History: Risk determined by past occurrences in each participating jurisdiction, where available, and by county wide occurrences.

Vulnerability Based on the total population from the jurisdiction and an estimated projection on property values and facilities within the jurisdiction.

Impact Risk determination was established by considering the vulnerability of the jurisdiction / county as well as past history of occurrence. Determination was also based on the extent of the occurrence.

Probability Determined by hazard frequency percentage located in the previous section of overall risk probability and frequency.

Table 36 shows the overall hazard vulnerability summary for the City of Gaffney, Town of Blacksburg, and Cherokee County.

Using this information, mitigation goals were then developed for each jurisdiction and the strategy and time frame for implementing them, while considering cost, were established. The agencies responsible for implementing mitigation actions were also appointed and listed. The plan was then compiled and reviewed utilizing the mitigation plan review crosswalk provided by FEMA.

TABLE 36 – Overall Hazard Vulnerability

HAZARD	**PROBABILITY**			**VULNERABILITY**			**IMPACT**			**HISTORY**			**TOTAL SCORE**		
	Gaffney	**Blacks-Burg**	**Cher.**	**Gaffney**	**Blacks Burg**	**Cher.**	**Gaffney**	**Blacks Burg**	**Cher.**	**Gaffney**	**Blacks Burg**	**Cher.**	**Gaffney**	**Blacks Burg**	**Cher.**
Tornadoes	low	low	low	high	high	med	high	high	high	med	low	low			
Priority Score	7	7	7	50	50	25	100	100	100	10	2	2	167	159	134
Winter Storms	high	high	high	high	high	high	High	high	Med	high	high	high			
Priority Score	70	70	70	50	50	50	100	100	50	20	20	20	240	240	190
Flood	low	low	med	med	med	med	low	med	high	low	low	Med			
Priority Score	7	7	35	25	25	25	10	50	100	2	2	10	44	84	170
Hurricanes	low	low	low	low	low	Med	med	med	med	low	low	Low			

Priority Score	1	1	1	5	5	25	50	50	50	2	2	2	58	57	78
Hail	high	high	high	high	high	med	high	high	high	high	high	high			
Priority Score	70	70	70	50	50	25	100	100	100	20	20	20	240	240	215
Drought	high	high	high	low	low	high	med	med	High	high	high	High			
Priority Score	70	70	70	25	25	25	50	50	100	20	20	20	165	165	215
Earthquakes	low	low	low	high	high	high	high	med	low	low	low	Low			
Priority Score	7	7	7	50	50	25	100	50	10	2	2	2	159	109	44
Wildfires	High	high	high	med	med	high	high	high	high	high	high	high			
Priority Score	70	70	70	25	25	50	100	100	100	20	20	20	215	215	240

TABLE 36a – 2022 Overall Hazard Vulnerability

HAZARD	PROBABILITY			VULNERABILITY			IMPACT			HISTORY			TOTAL SCORE		
	COG	TOB	COUNTY	COG	TOB	COUNTY	COG	TOB	COUNTY	COG	TOB	COUNTY	COG	TOB	COUNTY
EARTHQUAKE	LOW	LOW	LOW	HIGH	HIGH	MED.	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH			
	7	7	7	50	50	25	100	100	100	20	20	20	177	177	152
DROUGHT / HEAT	HIGH	HIGH	HIGH	MED	MED	HIGH	MED	MED	HIGH	HIGH	HIGH	HIGH			
	70	70	70	25	25	50	50	50	100	20	20	20	165	165	240
WILDFIRES	HIGH	HIGH	HIGH	MED	MED	HIGH	MED	MED	HIGH	HIGH	HIGH	HIGH			
	70	70	70	25	25	50	50	50	100	20	20	20	165	165	240
FLOODING	MED.	MED	HIGH	LOW	LOW	MED	MED	MED	HIGH	LOW	MED	HIGH			
	7	35	70	1	1	5	50	50	100	2	10	20	60	96	195
WINTER STORMS	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MED	MED	HIGH	HIGH	HIGH	HIGH			
EARTHQUAKE	LOW	LOW	LOW	HIGH	HIGH	MED.	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH			
	7	7	7	50	50	25	100	100	100	20	20	20	177	177	152
DROUGHT / HEAT	HIGH	HIGH	HIGH	MED	MED	HIGH	MED	MED	HIGH	HIGH	HIGH	HIGH			
	70	70	70	25	25	50	50	50	100	20	20	20	165	165	240
WILDFIRES	HIGH	HIGH	HIGH	MED	MED	HIGH	MED	MED	HIGH	HIGH	HIGH	HIGH			
	70	70	70	25	25	50	50	50	100	20	20	20	165	165	240
FLOODING	MED.	MED	HIGH	LOW	LOW	MED	MED	MED	HIGH	LOW	MED	HIGH			
	7	35	70	1	1	5	50	50	100	2	10	20	60	96	195
WINTER STORMS	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MED	MED	HIGH	HIGH	HIGH	HIGH			
	70	70	70	50	50	50	50	50	50	20	20	20	190	190	190
TORNADOS	LOW	MED	LOW	HGIH	MED	LOW	HIGH	HIGH	MED	LOW	MED	LOW			
	7	35	7	50	25	5	100	100	50	2	10	2	159	170	64
WIND	HIGH	HIGH	HIGH	HIGH	HIGH	MED	HIGH	HIGH	MED.	LOW	HIGH	LOW			
	70	70	70	50	50	25	100	100	50	2	20	2	222	240	147
HAIL	HIGH	MED	HIGH	MED	HIGH	MED	HIGH	HIGH	MED	HIGH	MED	HIGH			
	70	35	70	25	50	25	100	100	50	20	10	20	215	195	165
HURRICANE	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW			
	7	7	7	5	5	5	10	10	10	2	2	2	24	24	24

In reviewing this information, we see that a disaster in the jurisdictional boundaries of the City of Gaffney would have the possibility to be costlier due to the larger number of historic building / properties located within its boundaries and could also prolong the recovery time from a disaster. A larger number of injuries and deaths could be expected due to the higher concentration of person residing in a smaller area.

Likewise, a higher number of injuries and deaths could be expected in the Town of Blacksburg due to their higher concentration of people located within their judicial boundaries. During a disaster in the county, a lower number of injuries and deaths could be expected even though there is a larger population because the people per square mile are considerably less. However, the possibility of a greater loss of agricultural products would exist. Devastation of the higher number of critical community facilities located in this area could also prolong the recovery time from a disaster. A larger number of injuries and deaths could be expected due to the higher concentration of person residing in a smaller area.

Likewise, a higher number of injuries and deaths could be expected in the Town of Blacksburg due to their higher concentration of people located within their judicial boundaries. During a disaster in the county, a lower number of injuries and deaths could be expected even though there is a larger population because the people per square mile are considerably less. However, the possibility of a greater loss of agricultural products would exist.

Likewise, a higher number of injuries and deaths could be expected in the Town of Blacksburg due to their higher concentration of people located within their judicial boundaries. During a disaster in the county, a lower number of injuries and deaths could be expected even though there is a larger population because the people per square mile are considerably less. However, the possibility of a greater loss of agricultural products would exist.

During a disaster in the county, a lower number of injuries and deaths could be expected even though there is a larger population because the people per square mile are considerably less. However, the possibility of a greater loss of agricultural products would exist.

Changes Since Last Plan

By comparing chart 36 and 36a, changes are seen in hazard vulnerability.

-Tornados = Blacksburg's vulnerability increased, while Gaffney and the County's vulnerability was reduced.

-Winter Storms = Gaffney & Blacksburg's vulnerability decreased, while the County's remained the same.

-Flooding= Vulnerabilities increase for all three municipalities.

-Hurricanes= vulnerability for Hurricanes decreased for all municipalities.

-Hail = Vulnerability for hail decreased for all jurisdictions, as well.

-Drought / Heat= vulnerability increased slightly for Cherokee County, but decreased for Gaffney and Blacksburg.

-Earthquake=Vulnerability increased in all three jurisdictions.

-Wildfire =Vulnerability decreased for Gaffney and Blacksburg, while it remained the same for the County.

Overall, the Town of Blacksburg saw an increase in tornado probability. While flooding increased for all jurisdictions. Heat and drought increased slightly for the county.

SECTION 4 MITIGATION STRATEGY

As stated earlier in this plan, the previous Natural Hazard Mitigation Plan was written by ACOG as a regional plan. Therefore, all Mitigation Goals, Objectives and Strategies were addressed as countywide. Many of the goals contained in the original plan have been reached but some were not feasible due to funding issues. Below finds chart of goals from previous plan and their status.

GOAL #1: Local Government will have the capability to develop, implement and maintain effective mitigation programs.

ACTION	MET	UNMET	REASON NOT MET	POTENTIAL FUNDING SOURCES
Work with local relief groups (i.e. Red Cross) to promote public training classes and events related to hazard preparation.	**X**			
Utilize the Local Emergency Planning Group to meet following disasters and to review response effectiveness and mitigation needs	X			
Develop a tracking system for mitigation activities that reviews effectiveness following disaster events	X			
Review local government storm water regulations to assess how well they prevent hazardous situations due to storm water flooding	X			

Goal #2: The community will have the capability to initiate and sustain emergency response operations during and after a disaster.

ACTION	MET	UNMET	REASON NOT MET	POTENTIAL FUNDING SOURCES

Identify special needs populations and establish procedures for providing transportation to shelters in the case of a natural disaster.	X			
Provide emergency back-up power to critical facilities: emergency generators, secondary feeds, etc.		X	Partially complete. Ongoing when funding is available.	HMA GRANT
Structurally analyze all buildings or rooms identified as shelters and strengthen these as necessary.	X			
Review communications procedures on a regular basis to ensure communications between response agencies is maintained during a disaster.	X			
Update communications equipment, especially the E-911 Center, as needed and funding is available.	X			
Inventory Emergency Response personnel and equipment to identify areas where the community is deficient in disaster response and establish actions to remedy the situation	X			
Establish a program to provide disaster training for all first responders	X			

Goal #3: The continuity of local government operations will not be significantly disrupted by disasters.

ACTION	MET	UNMET	REASON NOT MET	POTENTIAL FUMDOMG SOURCES
Survey critical emergency response facilities (fire stations, law enforcement centers and Emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	X			
Establish data backup options (i.e. laptops, offsite backups) for critical data that are easily removed and accessed at different locations in case evacuation of public facilities is necessary.	X			

Provide generators to all existing critical facilities to prevent lengthy power outages.		X	Funds not available	HMA Grant
Establish procedures and location for setting up operations center for local government in the event a natural disaster forces the evacuation of local government buildings.	X			

Goal #4: The health, safety and welfare of the community's residents and visitors will not be threatened by disasters.

ACTION	MET	NOT MET	REASON NOT MET	POTENTIAL FUNDING SOURCES
Provide information to residents about the community warning systems and how to respond in case of a disaster.	X			
Evaluate critical facilities such as shelters to ensure they are structurally sound and capable of withstanding the effects of natural disasters.	X			
Evaluate medical facilities within the community to ensure they are protected from the threats posed by natural disasters.	X			
Inventory emergency response equipment and resources and establish a list of equipment needed to respond effectively to a natural disaster. Then seek funding to acquire the equipment	X			
Develop information pamphlets to notify tourist of the location of local shelters they can utilize in case of a disaster.		X	Not Feasible. ARC designates shelters according to location of need. Shelter locations announced over local radio	

Goal #5: The policies and regulations of local government will support effective hazard mitigation programming throughout the community.

ACTION	MET	NOT MET	REASON NOT MET	POTENTIAL FUMDOMG SOURCES
Establish local regulations ensuring no development occurs within floodplains	X		During a NFIP audit, (December 13, 2021), our county ordinance	

			was found to be up to date.	
Acquire updated flood plain maps (current SCDNR mapping project in process) that more accurately reflect current flood areas for use in reviewing development proposals.	X			
Strictly adhere to the ISO 9000 Building Code adopted in the Community.	X			
Review all public building projects to prevent location in hazardous area and ensure construction mitigates potential hazards.	X			
Examine ways to identify and acquire parcels of land subject to the effects of disasters that could provide for parks and open space in the community.		X	Funding not available	PDM Grant
Review local codes to determine whether they address the hazards identified for the community.	X		Up to date with current code cycle (2022)	

Goal #6: The availability and functioning of the community's infrastructure will not be significantly disrupted by a disaster.

ACTION	MET	NOT MET	REASON NOT MET	POTENTIAL FUNDING SOURCES
Support inspections of utility lines and upgrade of utility infrastructure that is at risk to natural hazards so as to minimize the possible damage.	X			
Inspect water and sewer infrastructure for vulnerability to natural hazards. Identify and elevate vulnerable equipment and electrical controls at wastewater and potable water treatment facilities.	X			
Include utility providers in all planning and drills for mitigation planning	X			

Identify roadways and traffic systems susceptible to natural hazards (i. e. flooding) and prioritize improvement projects to minimize disruption to the roadways.	X			
Determine whether there are incremental mitigating improvements that can be made to facilities as part of ongoing maintenance.	X			
Replace low bridges or other obstructions that may induce flooding of houses or businesses.		X	Incomplete. Will replace as funding becomes available	HMA Grant

Goal #7: All members of the community will understand the hazards threatening local areas and the techniques to minimize vulnerability to those hazards through public education.

ACTION	MET	NOT MET	REASON NOT MET	POTENTIAL FUMDOMG SOURCES
Develop a display to be used at public events. The display will provide information on natural hazards that threaten the area and what individuals can do to reduce these risks. Existing brochures and manuals from FEMA and SCEMD would be available for distribution.	X			
Utilize the media for the distribution and publication of hazard information. Send news releases and regular public relations pieces to local newspapers and radio stations. Promote pre-disaster planning.	X			
Provide information to residents of the community regarding flood insurance available	X			
Develop informational brochures in conjunction with the visitor's bureau that informs tourists of the natural hazards present in the community and what they should do in case one occurs. This information would be available at welcome centers, hotels, and other tourist attractions.		X	This action partially complete. Brochures have been developed but funds not available to have them printed.	PDM Grant

After completing the risk assessment for the new plan, the committee developed a set of new goals, and actions for implementation to provide a path towards building safer, more resilient communities. The goals and actions were developed through discussions with committee members. Once the final goals and objectives were determined the steering committee developed the mitigation strategies that would aid the county in meeting the goals and actions identified in the plan.

Since the Last Plan
No additional Goals and Actions were added to the 2022 update

4.1 **Mitigation Goals and Actions**

City of Gaffney Goals

1- Local Government will develop mitigation activities to reduce the danger, effects and costs to citizens and local government associated with tornadoes, winter storms, flooding, hurricanes, drought, earthquakes, and wildfires.

2-Perform community outreach and education to remind citizens of dangers associated with tornadoes, winter storms, flooding, hurricanes, drought, earthquakes, and wildfires and precautionary measures to take.

3-Establish regular debris clearance maintenance schedule to prevent buildup of debris in waterways prior to known rain occurrences.

4-Mitigate loss of electric utilities during winter storms

5-Emergency Services will update communications equipment to ensure communications during all hazards.

6-Review each occurrence of all hazards to measure effectiveness of maintenance schedule and mitigation measures.

GOAL	ACTION	RESPONSIBLE PARTY	TIME FRAME	PRIORITY	FEASIBILITY	HAZARD MITIGATED	POTENTIAL FUNDING SOURCE
1, 2	Continue distribution of preparedness material to public	Emergency Management	Ongoing	High	High	All-Hazard	Staff
3	Establish routine maintenance schedule to clear debris buildup from problematic waterways	DOT	Ongoing	High	High	Flooding	Staff
6	Conduct after action review following each disaster to measure effectiveness of mitigation actions	DOT Public Works EM Emergency Services	Ongoing	Medium	Medium	All-Hazard	Staff
1, 4	Perform routine trimming of branches and vegetation from around power lines / poles to prevent outages	Utility Providers	Ongoing	High	High	Winter Storms	Staff

5	Re-program/purchase communication s equipment to meet 2013 required narrow band frequencies to ensure interoperability during all disasters	Fire EMS All Law Enforcement EM	Ongoing	High	High	All-Hazard	Staff
1	Will update county Ordinance of FEMA Floodplain Management to include accessory buildings, effective September 16, 2011	Building Codes & Safety Department	1 Year	High	High	Flooding	Staff
1, 2	Educate citizens on the NFIP.	Building Codes & Safety	Ongoing	High	High	Flooding	Staff

Town of Blacksburg Goals

1 – Local Government will develop mitigation activities to reduce the danger, effects and costs to citizens and local government associated with tornadoes, winter storms, repetitive flooding, hurricanes, hail, drought, earthquakes, and wildfires.

2- Perform community outreach and education to remind citizens of dangers associated with tornadoes, winter storms, flooding, hurricanes, hail, drought, earthquakes, and wildfires and precautionary measures to take.

3- Establish regular debris clearance maintenance schedule to prevent buildup of debris prior to rain occurrences.

4- Mitigate loss of electric utilities during winter storms

5 - Mitigate Emergency Services access to rural/inaccessible areas during extreme inclement weather.

6- Emergency Services will update communications equipment to ensure communications during all hazards.

7- Review each occurrence of all hazards to measure effectiveness of scheduled maintenance and mitigation measures. (AAR)

GOAL	ACTION	RESPONSIBLE PARTY	TIME FRAME	PRIORITY	FEASIBILITY	HAZARD MITIGATED	POTENTIAL FUNDING SOURCE
1, 2	Continue distribution of preparedness materials to public	Emergency Management	Ongoing	High	High	All-Hazard	Staff
3	Establish routine maintenance schedule to clear debris buildup from problematic waterways.	DOT	Ongoing	High	High	Flooding	Staff

6	Conduct after actions review following each disaster to measure effectiveness of mitigation actions	DOT Public Works EM Emergency Services	On-going	Medium	Mod-erate	All-Hazard	Staff
3	Replace low bridge, when funds become available	DOT	5 Years	High	Moderate	Flooding	HMA Grant
1, 4	Perform routine trimming of branches and vegetation from around power lines and poles to prevent power outages	Utility Providers	Ongoing	High	High	Winter Storms	Staff
6	Re-program / purchase communications equipment to meet 2013 narrow band frequency requirements to ensure communications interoperability	All Emergency Services	Ongoing	High	High	All Hazards	Staff PDM Grant
1	Update County Ordinance of FEMA Floodplain Management to include accessory buildings, effective Sept.16, 2011	Dept. Building Codes & Safety Up to date 12/14/2021	1 Year	High	High	Flooding	Staff
1,2	Educate Citizens on NFIP.	Building Codes & Safety	Ongoing	High	High	Flooding	Staff

Cherokee County Goals

1 – Local Government will develop mitigation activities to reduce the dangers, effects and costs to citizens and local government associated with tornadoes, winter storms, flooding, hurricanes, hail, drought, earthquakes, and wildfires.

2- Perform community outreach and education to remind citizens of dangers associated with tornadoes, winter storms, flooding, hurricanes, hail, drought, earthquakes, and wildfires and precautions to take.

3- Establish regular debris clearance maintenance schedule to prevent buildup of debris to prevent flooding and damage to bridges and roads.

4- Review each occurrence of hazards to measure effectiveness of scheduled maintenance and mitigation measures. (AAR) 5- 5.

5. Mitigate loss of electric utilities, during winter storms.

6- Mitigate Emergency Services access to rural/inaccessible areas

during extreme inclement weather.

7- Mitigate the damage to structures caused by earthquakes
8- Reduce injuries and deaths following unexpected tornadoes.
9- Reduce the damage of wildfires.
10- Ensure sufficient communications between responding emergency agencies, prior to, during, and after any disaster.

GOAL	ACTION	RESPONSIBLE PARTY	TIME FRAME	PRIORITY	FEAS-IBILITY	HAZARD MITIGATED	POTENTIAL FUNDING SOURCE
1,	Continue distribution of preparedness material to public.	Emergency Management	Ongoing	Ongoing	High	All Hazards	Staff
1,3	Establish routine maintenance schedule to clear debris buildup from problematic waterways, and measure the effectiveness of mitigation actions following periods of heavy rain	DOT, Public Works	Ongoing	High	High	Flooding	Staff
1,	Conduct after action reviews following each hazard occurrence	Fire, Law Enforcement, EM	Ongoing	Medium	Moderate	All Hazards	Staff
1	Work with Building Inspections to ensure all evolving building codes are updated and followed to mitigate	EM, Building Inspections	Ongoing	High	High	Earthquakes	Staff

	against damages						
1	Purchase additional weather radios for placement in places of public gathering for early warning of tornadoes.	EM	Ongoing	Medium	High	All Hazards	PDM Grant
9	Change Dispatch's Fire SOP's to include additional fire department tone out for all vegetation fires during periods of high fire danger	EM, Fire, Dispatch Completed	1 year	Medium	High	Wildfires	Staff
1	Replace low bridge, when funds become available	DOT/Public Works	5 Years	High	Moderate	Floods	Staff HMA Grant
1,5	Perform routine trimming of branches and vegetation from around power poles/lines to prevent outages during inclement weather	Utility Providers	Ongoing	High	High	Winter Storms	Staff
1, 6	Acquire an "all- terrain" vehicle to gain access to patients when heavy snow is present	EMS EM	5 Years	Medium	Moderate	Winter Storms	

10	Re-program / purchase communication equipment to meet 2013 required narrow band frequencies to ensure interoperability during all disasters.	Fire, EMS, Police, EM	Ongoing	High	High	All Hazards	Staff PDM Grant
1	Update County Ordinance of FEMA Floodplain Management to include accessory buildings, effective Sept. 16, 2011	Dept. Building Codes & Safety Updated	1 year	High	High	Flooding	Staff
1, 2	Educate citizens on NFIP	Building Codes & Safety	Ongoing	High	High	Flooding	Staff

Potential sources of funding to help meet these goals include the following FEMA grants:
*Flood Mitigation Assistance (FMA) Grants
*BRIC Grants
*Pre-Disaster Mitigation (PDM) Grants

SECTION 5 PLAN MAINTENANCE AND ADOPTION PROCESS

5.1 Maintenance

According to the Disaster Mitigation Act of 2000, local plans are required to develop a method and schedule of monitoring, evaluating and updating the hazard mitigation plan within a five-year cycle. This cycle corresponds to the five-year updates required for comprehensive plans if the County decides to undertake one.

5.2 Monitoring

Using the implementation schedule developed for the mitigation projects, each County Emergency Preparedness Director shall track the progress of the mitigation plan. County Council and the Emergency Preparedness Director will be responsible for tracking the progress of the implementing agencies. EPD will review the document on an annual basis to determine the progress has been made on the action items. They will then survey

the implementation entities to determine the progress that has been made on each action. They will ensure when possible and encourage where necessary adherence to the plan time line. The assessment of the plan will be done annually on the anniversary of the approval date of the plan.

5.3 Evaluation

On an annual basis the Emergency preparedness Director will develop and end-of the year report. The report should detail mitigation activities undertaken over the course of the year as well as any mitigation projects that have been completed. Any mitigation success stories should be highlighted. The report should also address the following points:

* Evaluate the goals and objectives to ensure they address current and expected conditions.
* Determine if the magnitude of risk has changed.
* Evaluate whether the current resources are adequate for implementing the plan.
* Document any implementation problems such as technical, political, legal, or coordination issues with other agencies.
* Discuss whether the outcomes have occurred as expected.
* Document agency and other partner participation.
* Document public participation opportunities.

5.4 Ongoing Public Participation

The plan will be updated every five years after the adoption date. In the event of a significant disaster or any substantial changes in land use planning or regulation that would impact the recommended mitigation projects, more frequent updates should be considered. The Natural Hazard Mitigation Planning Committee in partnership with the local planning departments, emergency management and each County are responsible for overseeing the update of the hazard mitigation plan.

Following significant natural disasters within a community, an evaluation of mitigation needs will be made and residents impacted by the disaster will have an opportunity to provide input on possible mitigation needs. In addition, as mitigation initiatives are implemented there will be opportunities for public input in the project planning phase. Finally, the county emergency preparedness director will maintain a continuous list of public comments they receive in public forums or from individuals.

The update process will be similar to the one used to develop the original plan. Public hearings will be held in each County and any additional communities that wish to participate at that time. The public will also have the opportunity to review the suggested changes, and public comments will be included in the final document.

5.5 Plan Adoption

Once the Plan has been completed, it will be submitted to the State Hazard Mitigation Officer (SHMO) at the South Carolina Emergency Management Department. The SHMO will determine if the Plan meets requirements of DMA2K and other applicable requirements. Upon approval of the draft by SCEMD, the SHMO is responsible for sending the Plan to the FEMA Region office for review.

Once reviewed by FEMA and given the "Approvable Pending Adoption" motion, the plan will be posted on the jurisdiction's websites for the public's review and comments. See Appendix 2 for public review notice. The plan will then be adopted by Cherokee County Council, the City of Gaffney and the Town of Blacksburg by resolution. Refer to Appendices 5a, 6a and 7a.

APPENDICIES

Appendix 1: Kick Off Meeting Sign In Sheet & Follow Up Meetings

Appendix 2: Public Meeting Advertisements

Appendix 3: Public Meeting Sign In Sheet

Appendix 4: Public Meeting Minutes

Appendix 5: Cherokee County Adoption Resolution

Appendix 5a: Cherokee County Adoption Resolution 2022

Appendix 6: City of Gaffney Adoption Resolution

Appendix 6a: City of Gaffney Adoption Resolution 2022

Appendix 7: Town of Blacksburg Adoption Resolution

Appendix 7a: Town of Blacksburg Adoption Resolution 2022

Appendix 1: Sign In Sheets for Kick Off Meeting & Follow Up Meetings

Cherokee County Emergency Management

Hazard Mitigation Plan
Committee Meeting
March 3, 2011

Name	Address	Wk phone	Cell phone	Fax	E-mail
Joshua P. Parker	272 Blackwell Rd 6Lks	864 839-4500	864 491 6033	864-839-4505	chief12@nuvox.net
Mike TEAGUE	City of GAFFNEY	864-481-9500	864-761-6058	864-487-4627	mteague@cityofgaffney-sc.gov
ELLIOTT HUGHES	811 HAMRICK ST GAFFNEY, SC	864-489-5737	864-219-0287	864-206-7158	ehughes@broadriverelectric.coop
Mitch Stewart	1530 N. Limestone, Gaffney	487-1574	490-2775	487-1697	mestewart@novanthealth.org
Chuck Bobo	202-A N. Petty st. Gaff	487-2561	761-6528	902-1100	chuckdog2002@yahoo.com
James Blanton	138 Public Works Dr Gaff	487-2536	761-6344	864-487-2744	
Rick Peterson	1434 N. Limestone St	487-2590	761-6189	864)487-2719	
Beverly Carver	1434 N. Limestone St.	487-2590	761-6581	864)487-2719	

Cherokee County Emergency Management

Natural Hazard Mitigation Plan Committee
3/11/2011

Name	Address	Wk phone	Cell phone	Fax	E-mail
Joshua P. Parker	272 Blackwell Rd 6LD	864 487-1576	864 491 6033	864-839-4505	chief12@nuvox.net
Mitch Stewart	1530 N. Limestone St Gaffney	487-1574	490-2775	487-1697	mestewart@Novanthealth.org
Chuck Bobo	202 N. Petty st Gaffney	487-2561	761-6528		
James Blanton	138 Public Works Dr Gaffney	487-2536	761-6344	487-2744	
ELLIOTT HUGHES	811 HAMRICK ST. GAFFNEY	489-5737	219-0287	487-7808	ehughes@broadriverelectric.coop
Rick Peterson	1434 N Limestone Street				
Beverly Carver	1434 N Limestone St.				

Cherokee County Emergency Management

Hazard Mitigation Plan Committee Meeting
3/16,2011

Name	Address	Wk phone	Cell phone	Fax	E-mail
Bill Moore	B				Bill.Moore@cherokeecountysc.com
Rob Weaver	Robert.Weaver@cherokeecountysc.com	487-2552			
Mike Teague					
Mitch Stewart	EMS				
Joshua P. Parker					
Chuck Bobo	County				
Beverly Carver	Emergency Management				

Cherokee County Emergency Management

Natural Hazard Mitigation Plan Committee Meeting

4-1-11

Name	Address	Wk phone	Cell phone	Fax	E-mail
Joshua P. Parker	272 Blackwell Rd Blks	864-839-4500	864-491-6033	864-839-4505	chief12@nuvox.net
James Blanton	138 Public Works Dr	864-487-2536	864-761-6394	864-487-2749	
Elliott Hughes	811 Hamrick St Gaffney SC	864-206-7120	864-219-0287	864-487-7805	
Beverly Carver	1434 N. Limestone St.				

Cherokee County Emergency Management

Natural Hazard Mitigation Plan
Committee Meeting
April 20, 2011

Name	Address	Wk phone	Cell phone	Fax	E-mail
Mitch Stewart	EMS	487-1574	490-2775		mestewart@novanthealth.org
Joshua P. Parker	Fire	839-4500	491-6033	839-4505	on file
Rick Peterson	Emergency Management	487-2590			on file
Beverly Carver	Emergency Management	487-2590			on file

Appendix 1a: Record of Attendance for 2021 5 Year Plan Update

HAZARD MITIGATION COMMITTEE ATTENDANCE

Date 11/172021

COMMITTEE MEMBER	AGENCY	ATTENDED MEETING
Jamie Caggiano	City of Gaffney	
Steven Ellis	SCDOT	
Dale Gibert	Cherokee County Building Codes	
Scott Keller	City of Gaffney Public Works	
Josh Parker	Member of Fire Chief's Association	X
Alan Peeler	Cherokee County GIS / Mapping	
Dalton Pierce	Blacksburg Administration	
Brian Hamrick	Cherokee County GIS / Mapping	
Robert Weaver	Cherokee County Tax Assessor	
Beverly Carver	Cherokee County EM	X

*Due to meeting software issues, some could not sign on but participated by phone and / or by follow up emails.

HAZARD MITIGATION COMMITTEE ATTENDANCE

Date 12/14/2021

COMMITTEE MEMBER	AGENCY	ATTENDED MEETING
Jamie Caggiano	City of Gaffney	
Steven Ellis	SCDOT	X
Dale Gibert	Cherokee County Building Codes	X
Scott Keller	City of Gaffney Public Works	
Josh Parker	Member of Fire Chief's Association	X
Alan Peeler	Cherokee County GIS / Mapping	X
Dalton Pierce	Blacksburg Administrator	
Brian Hamrick	Cherokee County GIS / Mapping	X
Robert Weaver	Cherokee County Tax Assessor	X
Beverly Carver	Cherokee County EM	X

PUBLIC MEETING ATTENDANCE

Date 12/20/2021

COMMITTEE MEMBER	AGENCY	ATTENDED MEETING
Jamie Caggiano	City of Gaffney	
Steven Ellis	SCDOT	
Dale Gibert	Cherokee County Building Codes	
Scott Keller	City of Gaffney Public Works	
Josh Parker	Member of Fire Chief's Association	X
Alan Peeler	Cherokee County GIS / Mapping	
Dalton Pierce	Blacksburg Administrator	
Brian Hamrick	Cherokee County GIS / Mapping	
Robert Weaver	Cherokee County Tax Assessor	
Beverly Carver	Cherokee County EM	X

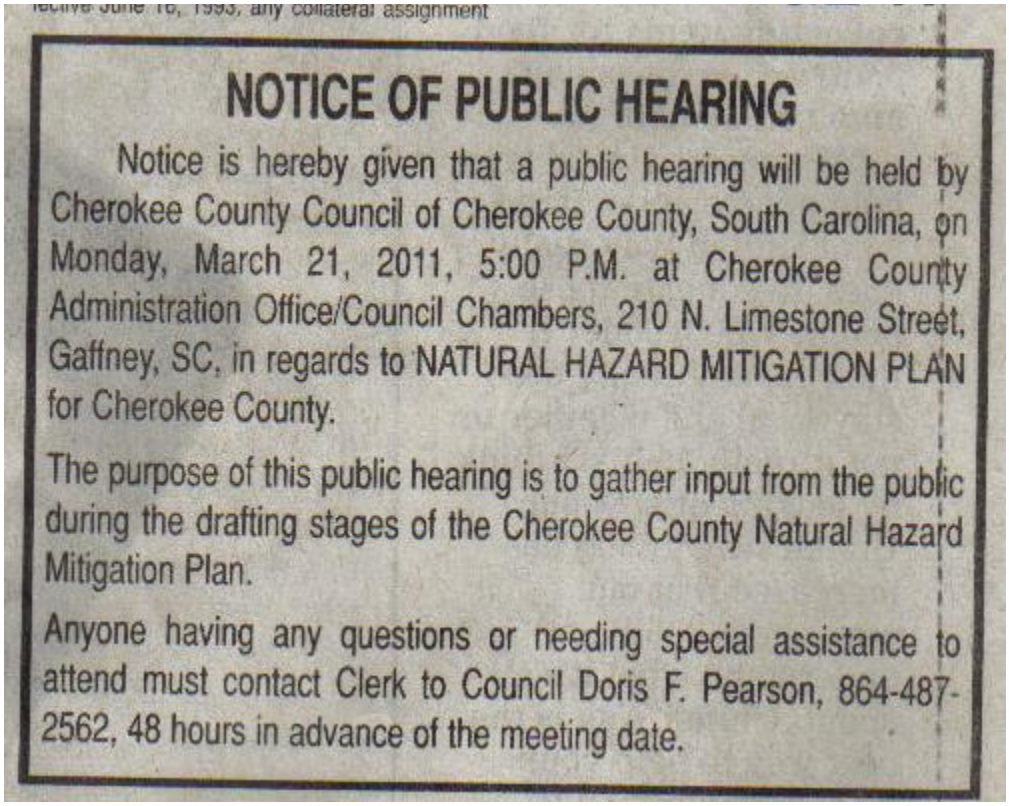
*Only one committee member was required at the Public Meeting

COMMITTEE MEMBER EMAILS & PHONE CALLS

COMMITTEE MEMBER		AGENCY
Jamie Caggiano	x	City of Gaffney
Steven Ellis	x	SCDOT
Dale Gibert	x	Cherokee County Building Codes
Josh Parker	x	Member of Fire Chief's Association
Alan Peeler	x	Cherokee County GIS / Mapping
Dalton Pierce	x	Blacksburg Administrator

Brian Hamrick	x	Cherokee County GIS / Mapping
Robert Weaver	x	Cherokee County Tax Assessor
Beverly Carver	x	Cherokee County EM

Appendix 2: Public Meeting Advertisement



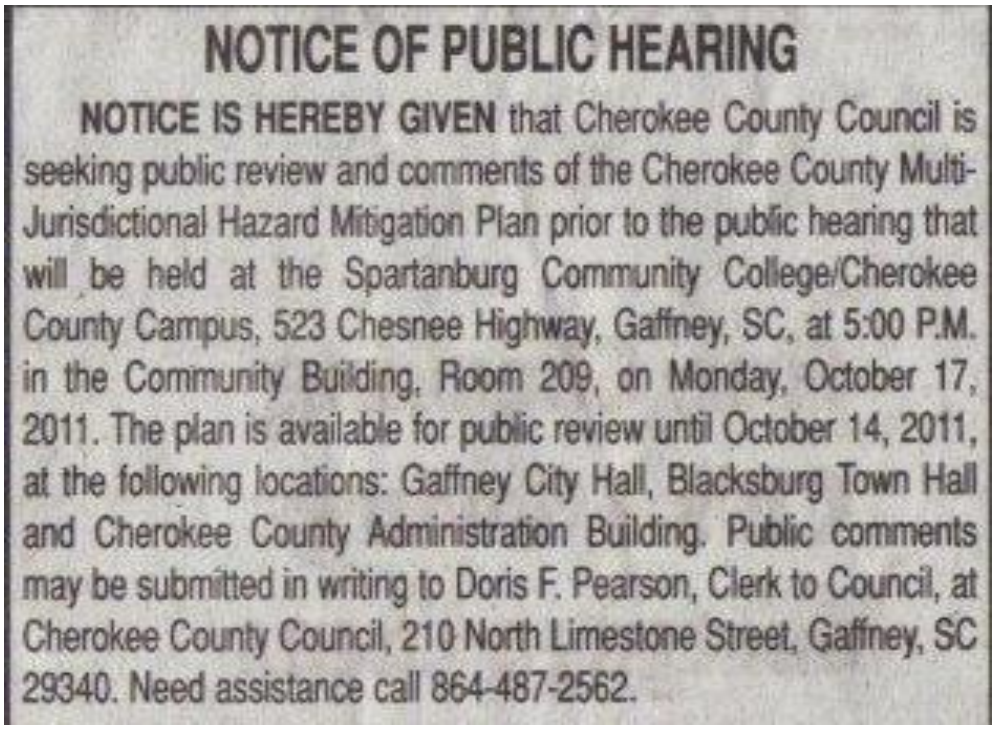
...effective June 16, 1993, any collateral assignment

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held by Cherokee County Council of Cherokee County, South Carolina, on Monday, March 21, 2011, 5:00 P.M. at Cherokee County Administration Office/Council Chambers, 210 N. Limestone Street, Gaffney, SC, in regards to NATURAL HAZARD MITIGATION PLAN for Cherokee County.

The purpose of this public hearing is to gather input from the public during the drafting stages of the Cherokee County Natural Hazard Mitigation Plan.

Anyone having any questions or needing special assistance to attend must contact Clerk to Council Doris F. Pearson, 864-487-2562, 48 hours in advance of the meeting date.



NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that Cherokee County Council is seeking public review and comments of the Cherokee County Multi-Jurisdictional Hazard Mitigation Plan prior to the public hearing that will be held at the Spartanburg Community College/Cherokee County Campus, 523 Chesnee Highway, Gaffney, SC, at 5:00 P.M. in the Community Building, Room 209, on Monday, October 17, 2011. The plan is available for public review until October 14, 2011, at the following locations: Gaffney City Hall, Blacksburg Town Hall and Cherokee County Administration Building. Public comments may be submitted in writing to Doris F. Pearson, Clerk to Council, at Cherokee County Council, 210 North Limestone Street, Gaffney, SC 29340. Need assistance call 864-487-2562.

APPENDIX 2 a: 2022 PUBLIC MEETING ADVERTISEMENTS

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held by Cherokee County Council of Cherokee County, South Carolina, on Monday, DECEMBER 20, 2021, 5:00 PM in Council Chambers at the Cherokee County Administration Complex, 110 Railroad Avenue, Gaffney, SC, in regards to NATURAL HAZARD MITIGATION PLAN FOR CHEROKEE COUNTY.

The purpose of this public hearing is to gather input from the public during the drafting stages of the Cherokee County Natural Hazard Mitigation Plan.

Subject to the normal rules of County Council regarding appearances, members of the public are invited to attend and make comment concerning the above noted matter.

If special accommodations are needed to participate in the public hearing, please contact the Cherokee County Master Clerk to Council Doris Pearson at 864-902-2252 at least 48 hours prior to the scheduled meeting date.

Published November 23, 2021

THE GAFFNEY LEDGER

WEDNESDAY, NOVEMBER 17, 2021

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held by Cherokee County Council of Cherokee County, South Carolina, on Monday, December 20, 2021, 5:00 PM in Council Chambers at the Cherokee County Administration Complex, 110 Railroad Avenue, Gaffney, SC in regards to NATURAL HAZARD MITIGATION PLAN FOR CHEROKEE COUNTY.

The purpose of this public hearing is to gather input from the public during the drafting stages of the Cherokee County Natural Hazard Mitigation Plan.

Subject to the normal rules of County Council regarding appearances, members of the public are invited to attend and make coment concerning the above noted matter.

If special accommodations are needed to participate in the public hearing please contact the Cherokee County Master Clerk to Council Doris Pearson at 864-902-2252 at least 48 hours prior to the scheduled meeting date.

Appendix 3: Public Meeting Sign-in Sheet

CHEROKEE COUNTY
NATURAL HAZARD MITIGATION PLAN
PUBLIC HEARING
MARCH 21, 2011

PLEASE PRINT YOUR NAME & INDICATE AREA IN WHICH YOU LIVE

NAME	JURISDICTION		
	Gaffney	Blacksburg	County
Example: John Smith		*	
Bruce Byars		✓	
David McEntire		✓	
Mike [illegible]	✓		✓
Ray [illegible]			✓
Patricia Coyle	✓		✓
Charmin Wilkie	✓		✓
[illegible]	✓		✓
[illegible]			✓
[illegible]			
[illegible]			✓
Kevin [illegible]			✓
[illegible] Perkins			✓
Bailey Humphries			✓
Steve Mueller			✓
JEFF STEPHENS			✓
Betty Mills			
Cathy Herrin	✓		✓
Dalton Herrin			✓
Kristie Camp	✓		
Joel Camp	✓		
Timarkus Dawkins	✓		
Jaydin Jefferies	✓		
Yolanda Reid	✓		
Melissa DAVIDSON	✓		
ROBERT LATHAN'S	✓		
Brenda Head	✓		
Rhonda [illegible]	✓		
[illegible]	✓		
Scott Ramsey	✓		
SHEILA MURPHY	✓		
Martha Parker	✓		
Kathy McMunn	✓		
Deana Upchurch			✓
Kristi Schurz	✓		

Wes Arnwood			✓
Cedrik Smith			✓
[illegible]			✓
[illegible]		✓	
[illegible] Duncan	✓		
Rick Peterson			✓
Beverly Carver			✓

Appendix 3: Pulic Meeting Minutes

DATE: 3/28/11

TO: Cherokee County Council

SUBJECT: Minutes of PH & Regular Meeting, 3/21/11

There was a Public Hearing & Regular Meeting of County Council Monday, 3/21/11, 5:00 P.M. in Council Chambers. Chairman Tim Spencer presided asking everyone to remember Rev. Dwight Easler's family and all the other victims of the Cleveland Park train wreck this past weekend. Councilman Rufus Foster led in prayer. All council members were present along with Admin. Ben Clary, Asst. Admin. Holland Belue, Attorneys Jim Thompson & Joe Mathis and Clerk Doris Pearson. The news media was informed by agenda and three was present. There were at least 25 visitors.

Councilman Rufus Foster made the motion to adopt the agenda as presented. Hoke Parris seconded and council voted in favor.

Chairman Tim Spencer opened the public hearing on Ordinance No. 2011-01 to amend the Cherokee County Purchasing Policy & Procedure Ordinance to provide for a Local Vendor Preference for Cherokee County Vendors. No one spoke regarding this.

Chairman Tim Spencer opened the public hearing in regards to the Natural Hazard Mitigation Plan for Cherokee County. He recognized Emergency Management Director Rick Peterson. Rick passed out notes for council to review. He reported that the Natural Hazard Mitigation Plan was written about 5 years ago by ACOG as a regional plan and was adopted by Cherokee County Council, City of Gaffney and Town of Blacksburg. We must update this plan every 5 years and the current plan expires 9/26/11. We must have this plan approved by FEMA in order to apply for and receive grants. There are four grants out there that we can apply for. We have goals that we must meet and we have done so. Everything must be completed in the next 30 days and forwarded to SCEMD for review. From there it will go to FEMA for approval; then they will return it to us for public review & adoption by Council and Municipalities and all this has to be done by 9/26/11. As there were no questions, Chairman Tim Spencer closed the public hearing and moved onto the next item on the agenda.

Petitioner Harland Thompson & Kevin Hayes were present to make a presentation to Council from Relay of Life. Chair Lisa Bell was unable to attend. Last year we presented the County with the #1 plaque for per capital giving. Last year we were at $9.01/capital and raised $271,000 for nationally #1/capital. We repeated that in 2010 thanks to Cherokee County. We were #1 again nationally and raised $270,339 for $4.99/capital. We were #1 in our population group. They presented a plaque and asked council to display in their Chambers. They reminded everyone that Relay for Life will take place again this year on 5/6/11.

Petitioner Ray Head presented a petition to Council with over 300 names asking council to take action to get the Cherokee County Recreation Dept. put under the control of elected officials. He asked council to be the guardian of tax payer's money. We feel it is wrong to increase recreation fees from these kids. We also feel if they increase these fees this year that our participation will drop

*A sign in sheet does not exist for the Public Meeting held on December 20, 2021. See meeting minutes below for record of attendance.

APPENDIX 3a: PUBLIC MEETING MINUTES

DATE: 12/21/21 **FILE NO: DATE532**

TO: Cherokee County Council

SUBJECT: Minutes of PH & Regular Meeting, 12/20/21

There was a Public Hearing & Regular Meeting of County Council Monday, 12/20/21, 5 PM in Council Chambers. Chairman Tim Spencer presided and lead in prayer. All council members were present along with Administrator Bratton, Asst. Admin. Merv Bishop, Attorney Joe Mathis & Master Clerk Doris Pearson. The news media was informed by agenda and it was posted in accordance with the SCFOIA. One news media was present. There were 5 visitors.

Councilman Tracy McDaniel made the motion to adopt the agenda of the PH & Regular Meeting of 12/20/21 as received and posted in accordance with the SCFOIA. Mike Fowlkes seconded and council voted in favor.

Councilman Lyman Dawkins made the motion to adopt the minutes of the PH & Regular Meeting of 12/6/21 as received. David Smith seconded and council voted in favor.

Councilman Quay Little made the motion to pay the claims for Cherokee County in the amount of $416,472.61. Lyman Dawkins seconded and council voted in favor.

Chairman Spencer opened the Public Hearing on two matters: **1)** Ordinance No. 2021-28 to amend Chapter 17, Article II of the Cherokee County Code of Ordinances-Uniform Road Naming & Property Numbering System; and **2)** in regards to the Natural Hazard Mitigation Plan for Cherokee County. No one was present to speak and the public hearing was closed.

Councilman Tracy McDaniel made the motion for council to go into Executive Session regarding two matters: 1) pursuant to Section 30-4-70(a)(2) the receipt of legal advice where the legal advice relates to a pending, threatened, or potential claim or other matters covered by the attorney-client privilege, settlement of legal claims, or the position of the public agency in other adversary situations

involving the assertion against the agency of a claim; and 2) pursuant to Section 30-4-70(a)(5) discussion of matters relating to the proposed location, expansion, or the provision of services encouraging location or expansion of industries or other businesses in the area served by the public body. Mike Fowlkes seconded and council voted in favor and went into Executive Session at 5:07 PM.

Councilman Tracy McDaniel made the motion for council to come out of Executive Session at 6:30 PM. David Smith seconded and council voted in favor.

Councilman Mike Fowlkes made the motion to designate Administrator Bratton to sign documents necessary for the Opioid Litigation. Tracy McDaniel seconded and council voted in favor.

Councilman Lyman Dawkins made the motion to authorize Administrator Steve Bratton to sign the buy/sell contract with Hamrick Mills for the purchase of real property located at the corner of Cherokee Avenue & Ross Street, Gaffney, for 20.58 acres for a purchase price of $308,700. Mike

Fowlkes seconded and council voted in favor with Quay Little abstaining due to conflict of interest. Motion carried.

Councilman Quay Little made the motion to accept the deed from the Cherokee County School District for the transfer of the Alma School property to Cherokee County with the understanding that council allow them to remove their personal property inside the building giving them until 1/31/22 to do so. Lyman Dawkins seconded and council voted in favor.

Councilman David Smith made the motion to adopt Resolution 2021-14 authorizing 1) the execution & delivery of a Fee in Lieu of Tax Agreement by & between Cherokee Co., SC (The "County") and a Company identified for the time being as Project Eclipse, acting for itself, one or more affiliates, and/or other Project Sponsors (collectively, The "Company"), pursuant to which the County shall covenant to accept certain negotiated Fees in Lieu of Ad Valorem Taxes with respect to the establishment and/or expansion of certain facilities in the county (collectively, (the "Project"); 2) the benefits of a Multi-County Industrial or Business Park to be made available to the Company and the Project; 3) certain Special Source Revenue Credits in connection with the Project; and 4) other matters relating thereto. Lyman Dawkins seconded and council voted in favor.

Councilman Tracy McDaniel made the motion to adopt Resolution 2021-15 to express the intention of Cherokee County, SC to cause the county to be reimbursed

with the proceeds of Tax-Exempt Obligations. David Smith seconded and council voted in favor. Administrator Bratton stated that we will reimburse ourselves annually until we are fully paid for expenses.

Councilman Lyman Dawkins made the motion to adopt Resolution 2021-16 whereas, Cherokee County, SC acting by & through its County Council is authorized and empowered under & pursuant to the provisions of Title 12, Chapter 44 Code of Laws of SC, 1976, as amended (the "FILOT Statue"), to enter into an agreement with any Project Gold Rush, whereby the industry will pay fees-in-lieu-of taxes with respect to qualified project; through which powers the development of the State of SC (the "State") will be promoted and trade developed by inducing manufacturing and commercial enterprises to locate or remain in the State and thus utilize and employ the manpower, products and resources of the State and benefit the general public welfare of the County by providing services, employment, recreation or other public benefits not otherwise provided locally; and other matters relating thereto. Mike Fowlkes seconded and council voted in favor.

Councilman Tracy McDaniel made the motion to adopt Resolution 2021-17 authorizing under certain conditions, the execution & delivery of a FILOT Agreement by & between Cherokee Co., SC and Baker Street Acquisitions LLC, and Apollo Acquisitions LLC, also known as "Project Paint" with respect to certain Economic Development Property in the County, whereby such property will be subject to certain payments in Lieu of Taxes, will be designated as being in a Multi-County Industrial & Business Park, and will be eligible to receive certain tax credits; authorizing the execution & delivery of a Multi-County Industrial & Business Park Agreement with Spartanburg County to include such Economic

Development Property; and other matters related thereto. Lyman Dawkins seconded and council voted in favor.

Councilman Mike Fowlkes made the motion to accept into the Cherokee County Road System the Double Creek Subdivision as presented. Quay Little seconded and council voted in favor. Admin. Bratton stated this includes about 50 homes and is located on the corner of Natures Trail & Grassy Pond Road.

Councilman Tracy McDaniel made the motion to adopt the 3rd Reading of Ordinance No. 2021-28 to amend Chapter 17, Article II of the Cherokee County Code of Ordinances-Uniform Road Naming & Property Numbering System. Mike Fowlkes seconded and council voted in favor.

Councilman Lyman Dawkins made the motion to adopt the 2nd Reading of Ordinance No. 2021-30 to amend the Agreement for Development for Joint County Industrial Park by & between Spartanburg County and Cherokee County, SC, so as to include additional property in Spartanburg County as part of the Joint County Industrial Park, and other matters relating thereto. (AGA Tag Solar II, LLC; RG Frontage, LLC; JSD Flatwood PV-1, LLC; The Cubes at Fort Prince, LLC; Fort Prince Logistics, LLC; & SC Global Logistics, LLC.) Mike Fowlkes seconded and council voted in favor.

Councilman David Smith made the motion to adopt the 2nd Reading of Ordinance No. 2021-31 to amend the Agreement for Development for Joint County Industrial Park by & between Spartanburg & Cherokee County, SC, so as to include additional property in Spartanburg County as part of the Joint County Industrial Park, and other matters relating thereto. (Eastgroup Properties, LP; SCP Acquisitions, LLC; Big Acquisitions, LLC; ILJIN American Corporation; Greer South Carolina Becknell Onvestors, LLC; Walmart Stores East, LP.) Mike Fowlkes seconded and council voted in favor.

Councilman Tracy McDaniel made the motion to adopt the 2nd Reading of Ordinance No. 2021-32 authorizing (a) the execution & delivery of a Fee in Lieu of Tax Agreement by & between Cherokee County, SC ("County"), and Project Herbie with respect to certain Economic Development Property in the County, whereby such property will be subject to certain payments in Lieu of Taxes, including the provision of Certain Special Source Credits; (b) the County to create a Multi-County Industrial/Business Park with Spartanburg County, SC, and designate the property to be owned by Project Herbie as Multi-County Park Property; and (c) other related matters. Lyman Dawkins seconded and council voted in favor.

Councilman Lyman Dawkins made the motion to adopt the 2nd Reading of Ordinance No. 2021-33 authorizing the execution & delivery of a Fee in Lieu of Tax Agreement by & between Cherokee County, SC and (Project Alpha1) with respect to Certain Economic Development Property in the County, whereby such property will be subject to certain special source credits; and other matters related thereto. David Smith seconded and council voted in favor.

Councilman David Smith made the motion to adopt the 1st Reading of Ordinance No. 2021-34 authorizing a Fee in Lieu of Tax & Infrastructure Credit Arrangement pursuant to a Fee in Lieu of Tax Agreement between Cherokee Co., SC and Project Eclipse, a company code name for a Delaware Corporation; and other

matters relating to the foregoing. Lyman Dawkins seconded and council voted in favor.

Councilman David Smith made the motion to adopt the 1st Reading of Ordinance No. 2021-35 authorizing the purchase of real property. Mike Fowlkes seconded and council voted in favor. Quay Little abstained from voting due to conflict of interest.

Councilman Lyman Dawkins made the motion to adopt the 1st Reading of Ordinance No. 2021-36 authorizing the execution & delivery of a Fee in Lieu of Tax Agreement between Cherokee County, SC and Project Gold Rush; and other matters relating thereto including, without limitation, payment of a Fee in Lieu of Taxes; the authorization of a Special Source Revenue Credit; the placement of the Project in a Joint County Industrial & Business Park; and related matters. David Smith seconded and council voted in favor.

Councilman Lyman Dawkins made the motion to adopt the 1st Reading of Ordinance No. 2021-37 authorizing the Execution & Delivery of a Fee in Lieu of Tax Agreement between Cherokee County, SC and Baker Street Acquisitions LLC, and Apollo Acquisitions LLC, also known as "Project Paint" with respect to certain Economic Development Property in the county, whereby such property will be subject to certain payments in Lieu of Taxes, will be designated as being in a Multi-County Industrial & Business Park, and will be eligible to receive certain Tax Credits; authorizing the execution & delivery of a Multi-County Industrial & Business Park Agreement with Spartanburg County to include such Economic Development Property; and other matters related thereto. David Smith seconded and council voted in favor.

Administrator Steve Bratton requested council to purchase 486 solid waste roll carts from Rehig Pacific Co. for the total amount of $35,423.12. He reported that the we were able to get these off the old bid price back in 2017 but the price has increased significant. SWD has $18,000 in their capital equipment budget and we will need to pay the remainder out of the capital equipment contingency fund. We cannot find parts to repair the old ones. Tracy asked Steve to check on the warranty. We have 100 carts in stock now; it will take about 3 to 4 months to get these if we are order now. **Councilman Quay Little made the motion to allow Administration to purchase 486 solid waste roll carts from Rehig Pacific Co. for the amount of $35,423.12 to be paid from the SWC capital equipment budget and capital equipment contingency fund. David Smith seconded and council voted in favor.**

Administrator Steve Bratton asked permission to increase the price of citizens purchasing carts from us from $75 to $90. This would be the first time we have increased

this since 2017. If the manufacturer is going up on us, we need to go up on our price as well. Quay replied go out for bid first and see what price they charge us; then we will decide. Council agreed.

Administrator Steve Bratton recommended from the committee to sign the contract with Great Southern Recreation, Shelby, NC, to install two splash pads: one at the Midway Recreation Dist. and the other at Lime St. in Blacksburg going with Option 2 for a total cost of $700,000. **[Councilman Quay Little made the motion to allow Administrator to enter into an agreement with Great Southern Recreation, Shelby, NC, to install two splash pads: one at the Recreation District Complex and the other at Lime St., Blacksburg, going with Option 2 for a price of $700,000. Mike Fowlkes seconded and council voted in favor.]** Quay Little recommended that surveillance cameras be installed around the pads. Steve replied these parks are not intended to be opened at night and I feel our IT Dept. can put up cameras. There will be no age limit to play on the pads.

Asst. Administrator Merv Bishop reported that the parts for the new trash truck have come in and are being installed and we should receive the truck in about 2 weeks.

Councilman Elliott Hughes appointed Evelyn Millwood to serve a term on the Corinth Fire District Board of Commissioners. David Smith seconded and council voted in favor.

Councilman Elliott Hughes re-appointed Suzanne Turner to serve another term on the Corinth Fire District Board of Commissioners. David Smith seconded and council voted in favor.

Councilman Quay Little ask Administration to begin conversations with Spartanburg Regional Healthcare to partner with Cherokee County Council in providing a hospice house to be located here in Cherokee County for our residents.

As there was no other business to come before council at this time, Chairman Spencer adjourned the meeting at 7:12 PM.

APPROVED: **1/3/22** Respectfully submitted,

BY ITS CHAIRMAN: **Tim Spencer** Doris F. Pearson, Master Clerk to Council

Appendix 4: Community Survey

COMMUNITY SURVEY
for
CHEROKEE COUNTY
NATURAL HAZARD MITIGATION PLAN

<u>Municipality</u>: City of Gaffney, Town of Blacksburg, Cherokee County (Please circle one).
Name/Email Address:

_____

1. **Please rank the following hazards:**
   High (likely to affect your community / past history of such events).
   Medium (may affect your community / some history of such events).
   Low (not likely to affect your community / limited history of such events.

HAZARD	**RANKING**
Earthquake	**High** ☐ **Medium-** ☐ **,Low** ☐
Drought	**High-** ☐ ☐ **Low** **Medium-** ☐
Wildfires	**High-** ☐ **Medium-** ☐ **Low-** ☐
Flooding	**High** ☐ **Medium-** ☐ **Low-** ☐
Winter Storms	**High-** ☐ **Low-** ☐
Tornadoes	**High-** ☐ **Medium-** **Low-** ☐
Hail	**High-** ☐ **Medium-** ☐ **Low** ☐
Hurricanes	**High** **Medium-** ☐ **Low-** ☐

2. **Please indicate specific areas that were noticeably affected by natural disasters in your community in the past. Include notes on the types of problems experienced in each area.**
   Roads
   Streets
   Culverts
   Bridges
   Water, sewer facilities, and infrastructure
   Parks
   Public buildings / schools
   Mobile Homes
   Residential (besides mobile homes)

Businesses / Churches
Historic Structures

3. **Please describe areas in your community that became isolated and/or inaccessible during or after a disaster (i. e. a closure of certain roadways due to flooding).**
4. **What are some specific facilities or structures that you feel may be particularly vulnerable to natural disasters in the future? (i.e. a certain historic building in the floodplain, a place where large numbers of people are consistently gathered, etc.)**
5. **Please feel free to comment on any other issue related to hazard Mitigation**

APENDIX 4a 2022 REVISED COMMUNITY SURVEY & COMPILED RESULTS RECEIVED

2022 REVISED COMMUNITY SURVEY

NAME/EMAIL ADDRESS: _____

1. What municipality do you live in?
   __ City of Gaffney, __Town of Blacksburg, __Cherokee County
2. Please rank the following hazards as:
   1. High (Likely to affect your community / Past history of such events).
   2. Medium (may affect your community / some history of such event).
   3. Low (not likely to affect your community/limited history of such events).

EARTHQUAKE:	__High	__Medium	__Low
DROUGHT/ HEAT	__High	__Medium	__Low
WILDFIRE(S)	__High	__Medium	__Low
FLOODING:	__High	__Medium	__Low
WINTER STORM:	__High	__Medium	__Low
TORNADO (S):	__High	__Medium	__Low
WIND	__High	__Medium	__Low
HAIL:	__High	__Medium	__Low
HURRICANES	__High	__Medium	__Low

3. Please indicate specific areas that were noticeably affected by natural disasters in your community in the past. Include notes on the types of problems experienced in each area.
   __Roads
   __Streets
   __Culverts
   __Bridges
   __Water, Sewer Facilities, Electricity, and Infrastructure
   __Parks
   __Public Buildings/Schools
   __Mobile Homes
   __Residential (Besides Mobile Homes
   __Businesses/Churches
   __Historic Structures
4. Please describe areas in your community that became isolated and/or inaccessible during or after a disaster (i.e. closure of certain roadways due to flooding).
5. What are some specific facilities or structures that you feel may be particularly vulnerable to natural disasters in the future? (i.e. certain historic building in the floodplain, a place where large numbers of people are consistently gathered etc.).

6. Please feel free to comment on any other issue related to Hazard Mitigation that you wish to discuss.

Please return completed surveys to:

- By mail: Cherokee County Emergency Management
  1434 North Limestone Street
  Gaffney, S.C. 29340
- By E-mail: beverly.carver@cherokeecountysc.com
- By Fax: (864)487-2719

Thanks for your participation!

2022 Community Survey Compiled Results

A total of 47 surveys were received from the public. Surveys were received from all three jurisdictions.

Hazards were ranked on how likely they were to affect your community:

HAZARD	HIGH	MEDIUM	LOW
Earthquake	2.13	25.5	70.21
Drought / Heat	57.45	31.91	8.5
Wildfires	17.02	48.94	34.04
Flooding	19.15	36.17	40.43
Winter Storm	25.53	42.55	27.66
Tornado	14.89	31.91	48.94
Wind	53.19	36.17	6.38
Hail	14.89	46.81	36.17
Hurricanes	27.66	17.02	70.21

Specific areas that were noticeably affected by natural disasters in your community in the past.

AFFECTED BY HAZARD	CITY OF GAFFNEY	TOWN OF BLACKSBURG	COUNTY
ROAD	2	4	32
STREETS	2	1	26
CULVERTS	1	1	22
BRIDGES	2	3	21
WATER, SEWER FACILITIES,	2	0	21

ELECTRICITY, INFRASTRUCTURE			
PARKS	0	0	9
PUBLIC BUILDINGS / SCHOOLS	1	3	11
MOBILE HOMES	1	0	24
RESIDENTIAL (OTHER THAN MOBILE HOMES)	1	1	18
BUSINESSES / CHURCHES	1	3	10
HISTORIC STRUCTURES			8

COMMENTS RECEIVED:

CITY OF GAFFNEY

-FLOODING ALONG CREEKS AND RIVERS
-FLOODING FROM POOR DRAINAGE OUT INTO STREETS, ROADS AND AROUND
CULVERTS
-LOW BRIDGES FLOOD

TOWN OF BLACKSBURG

-WINTER STORM CLOSES ROADS DUE TO ICE AND SNOW
-ROADS
-ROADS BECOME INACCESSIBLE DURING OR AFTER A DISASTER
-BUILDINGS

COUNTY

-WINTER STORMS CLOSEROADS DUE TO IMPROPER PREPARATION
-ROADS OUT DUE TO ICE / SNOW
-POWER FREQUENTLY OUT WITH HIGH WIND, ICE STORM
-MANY MOBILE HOMES DESTROWED DUE TO TORNADIC ACTIVITY
-TREES DOWN FROM ICE & WIND
-ROADWAYS DUE TO FLOODING (2)
-NEIGHBORING ROADS CLOSED WHEN ICY
-STREETS IMPASSABLE DUE TO ICE/SNOW
-ROADWAYS
-CHURCHES ARE A PARTICULAIR PLACE WHERE LARGE NUMBERS ARE GATHERED
-TREES DOWN – (3)
-ROADWAYS (2)
-PLACES WHERE LARGE NUMBERS OF PEOPLE ARE CONSISTENTLY

GATHERED. (1)
-FLOODING IN THE AREA OF SHADY GROVE ROAD
-WINTER STORMS ALL ROADS & I-85 A BIG CONCERN
-TORNADO / WINDS OVER THE ENTIRE AREA
-MOBILE HOMES AFFECTED BY TORNADOS (4)
-ON TWIN BRIDGE RD THE CULVERT DESTROYED ROAD DURING HEAVY FLOODING
-NORTH CHEROKEE FORD RD. HAS A DANGEROUS CREEK RUNNING ACROSS THE ROAD
AT ALL TIMES (IT'S HARD TO SEE AND FLOODS BADLY AFTER RAIN)
-ROADS AFFECTED BY TREES AND POWER LINES DOWN
-MOBILE HOMES AFFECTED BY WIND
-LOW LYING AREAS NEAR BROAD RIVER ARE AREAS THAT BECOME ISOLATED AND/OR
INACCESSIBLE DURING OR AFTER A DISASTER.
-PEELER CREEK RD. FLOODS DURING HEAVY RAIN
-DRAVO DAM IS SPECIFIC STRUCTURE THAT IS ISOLATED AND VULNERABLE TO NATURAL
DISASTERS.
-ICE & SNOW HAVE WRECKED STATE LINE ROAD TO THE POINT THAT IT IS IMPASSIBLE IF ANOTHER CAR IS ON THE ROAD WITH YOU. THE EDGES OF THE PAVEMENT ARE DESTROYED.
-I HAVE ONLY LIVED HERE FOR 4 MONTHS AND I LOVE IT HERE, BUT THE CONDITIONS OF THE ROADS AFTER THE RECENT SNOW & ICE ARE PRETTY BAD.

Appendix 5: Cherokee County Adoption Resolution

RESOLUTION NO. 2011-15

RESOLUTION ADOPTING THE CHEROKEE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS, Cherokee County recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adoption of an hazards mitigation plan is required as a condition of future grant funding of mitigation projects; and

WHEREAS, the plan was written by the Cherokee County Hazard Mitigation Plan Committee for Cherokee County, and the jurisdictions of the City of Gaffney and Town of Blacksburg that lie within its' boundaries; and,

WHEREAS, Cherokee County is aware that revisions and updating of the plan is critical for active and effective hazard mitigation and that Cherokee County will monitor and record hazard related data and events that can be used to update the all natural hazards mitigation plan.

NOW, THEREFORE, be it resolved, that the Cherokee County Council, hereby adopts the Natural Hazards Risk Assessment and Multi-Jurisdictional Hazard Mitigation Plan for Cherokee County in its entirety as an official plan and will undertake annual recording of hazard events, their impact duration, and cost.

BE IT FURTHER RESOLVED, that Cherokee County Council, upon accepting the Natural Hazards Risk Assessment and Multi-Jurisdictional Hazard Mitigation Plan from the Cherokee County Hazard Mitigation Plan Committee will submit the adoption of the Hazard Mitigation Plan to the Federal Emergency Management Agency Officials for approval.

ADOPTED THIS 7th day of NOVEMBER, 2011, by CHEROKEE COUNTY COUNCIL:

Tim Spencer, Chairman

Rufus H. Foster, Jr., Vice-Chairman

ATTEST:

Doris F. Pearson
Clerk to Council

Appendix 5a: Cherokee County Adoption Resolution 2022

Appendix 6: City of Gaffney Adoption Resolution

RESOLUTION NO. 2011-7

RESOLUTION ADOPTING THE CHEROKEE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS, the City of Gaffney recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adoption of a hazards mitigation plan is required as a condition of future grant funding of mitigation projects; and

WHEREAS, a hazards mitigation plan was written by the Cherokee County Hazard Mitigation Plan Committee for Cherokee County which includes the jurisdictions of the City of Gaffney and Town of Blacksburg that lie within its boundaries; and,

NOW, THEREFORE, BE IT RESOLVED, that the City of Gaffney hereby adopts the Natural Hazards Risk Assessment and Multi-Jurisdictional Hazard Mitigation Plan for Cherokee County in its entirety as an official plan and will undertake annual recording of hazard events, their impact duration, and cost.

SIGNED, SEALED AND ADOPTED BY City Council this 5th day of December, 2011.

Henry L. Jolly, Mayor

C. Wayne Ramsey, Council District 1

Dennis Ramsey, Council District 4

Thomas R. Reid, Council District 2

Boone S. Peeler, Council District 5

S. Bernard Smith, Council District 3

Billy Love, Council District 6

Appendix 6a: City of Gaffney Adoption Resolution, 2022

Appendix 7: Town of Blacksburg Adoption Resolution

TOWN OF BLACKSBURG

RESOLUTION 2011-12.01

RESOLUTION ADOPTING THE CHEROKEE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS, the Town of Blacksburg recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adoption of an hazard mitigation plan is required as a condition of future grant funding of mitigation projects; and

WHEREAS, the plan was written by the Cherokee County Hazard Mitigation Plan Committee for Cherokee County, and the jurisdictions of the City of Gaffney and Town of Blacksburg that lie within its boundaries; and

WHEREAS, the Town of Blacksburg is aware that revisions and updating of the plan are critical for active and effective hazard mitigation and that the Town of Blacksburg will monitor and record hazard related data and events that can be used to update the all natural hazards mitigation plan.

NOW, THEREFORE, BE IT RESOLVED that the Blacksburg Town Council hereby adopts the Natural Hazards Risk Assessment and Multi-Jurisdictional Hazard Mitigation Plan for Cherokee County in its entirety as an official plan and will undertake annual recording of hazard events, their impact, duration and cost.

BE IT FURTHER RESOLVED that the Town of Blacksburg upon accepting the Natural Hazards Risk Assessment and Multi-Jurisdictional Hazard Mitigation Plan from the Cherokee County Hazard Mitigation Plan Committee will submit the adoption of the Hazard Mitigation Plan to the Federal Emergency Management Agency Officials for approval.

ADOPTED THIS 13TH DAY OF DECEMBER, 2011, BY THE BLACKSBURG TOWN COUNCIL:

MAYOR DAVID A HOGUE

COUNCILMAN JOE ROSS

COUNCILMAN MIKE PATTERSON

COUNCILMAN DARREN JANESKY

COUNCILMAN JANIE WILSON

ATTEST:

DELL BAGWELL, TOWN CLERK

Appendix 7a: Town of Blacksburg Adoption Resolution

Appendix 8: Soliciting Surrounding Counties Input

Beverly Carver

From:	Beverly Carver
Sent:	Monday, April 25, 2022 10:52 AM
To:	Ed Darby (emdarby@ChesterCounty.org); 'chuck.haynes@yorkcountygov.com'; 'dplayer@lancastersc.net'; 'rswofford@spartanburgcounty.org'; 'Dennis Merrifield'; Joey Avery (javery@co.laurens.sc.us)
Cc:	'Hill, Jeffrey'
Subject:	FW: Share Link

Good Morning Everyone,

We are in the process of updating our County Natural Hazards Mitigation Plan. I would appreciate any feedback, which you may have concerning the plan. Your feedback is most appreciated! Have a wonderful week and many thanks in advance for all your help!

Here is the link to view the plan.

https://share.cherokeecountysc.gov/index.php/s/XfQjnRQZp3JAWry

The password to access it is **4222022**

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