



Office of the Floodplain Administrator

Brian Bishop, PE, CFM
Floodplain Administrator
jbishop@greenvillecounty.org
(864) 467-7523
www.greenvillecounty.org

MEMO

Date: May 2023

To: Mr. Joseph M. Kernell, County Administrator
County Council
Mr. Tee Coker, Assistant Administrator - Community Planning & Development

Subject: **Re: Greenville County Flood Hazard Mitigation Plan Annual Progress Update**

Greenville County participates in the Community Rating System (CRS) of the National Flood Insurance Program. This program commitment enhances public safety and property protection while providing our flood insurance policyholders with a premium discount. The County Flood Hazard Mitigation Plan is incorporated into the Multi-Jurisdictional Hazard Mitigation Plan (Plan) adopted by County Council on June 16, 2020. This Flood Hazard Mitigation Plan Update is an annual review that is transmitted to the local governing body; the State Flood Mitigation Program Administrator; and, the general public in accordance with CRS program requirements. The Plan and the activities summary update are available in the Floodplain Administrator's Office for public review and on the County's Floodplain Web page. This annual report is designed to document and evaluate progress toward implementing the flood hazard mitigation objectives of the Plan. The hazard mitigation committee met and a copy of the status of each mitigation initiative is attached. Updates are shown as green text.

Additionally the floodplain management department completed their annual repetitive loss area analysis of insured structures that has had at least two paid flood losses of more than \$1000 each in any ten year period since 1978. After our review, the county currently has 13 repetitive loss structures. A total of 77 notices were sent out which included the 13 repetitive loss properties and surrounding property owners with similar flooding risk. A copy of the letter is attached.

Greenville County staff is committed to achieving the flood hazard mitigation goals outlined in our Plan. We appreciate the support of Council, County Administration and our Disaster Mitigation Committee members as we work together to make Greenville County a more disaster resistant community.

Copy: South Carolina Department of Natural Resources, Flood Mitigation Programs
Mr. Bob Mihalic, Governmental Affairs Coordinator

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1 Prioritized Mitigation Initiatives

1.1 Introduction

Development of mitigation initiatives began with a review of initiatives contained in previous HMPs. Any initiative that was on the current list, but that had not begun implementation remained in consideration for the 2020 HMP. The DMC was also provided an opportunity to discuss potential mitigation measures with their sponsoring organization and submit those initiatives either in writing, at DMC meeting #2, or again at meeting #3.

1.2 Project Descriptions

The following projects were identified by the committee as potential mitigation initiatives and were scored according to the process defined in Section **Error! Reference source not found.** All of the “Responsible Party” designations below refer to Greenville County Departments or Divisions, unless otherwise stated.

PREVENTION

- Bridge/Culvert Analysis
 - Replace and upgrade stream crossings to improve channel flow characteristics as needed.
 - Total of 3 Bridge replacements for 2022/2023. Three additional bridges have been placed on order and to be completed in 2023.
 - Projected to replace 6 Bridges and 2 culverts in 2023/2024.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Floodplain Administration, Engineering	County Budget	Each crossing is analyzed during the basin study process and programmed for upgrade in subsequent budget	Floods	Greenville County

- Proactive Maintenance of Stormwater Infrastructure
 - Maintain piped infrastructure, ditches, culverts, bridges, and Best Management Practices before hazardous conditions occur.
 - Upgraded 3 existing undersized and poorly functioning pipe drainage systems.
 - Rehabbed existing CMP pipe.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Engineering	County Budget	On-going, more detailed analysis of localized flooding to be prepared as budget becomes available	Floods	Greenville County

- Underground Electricity Plan
 - Coordinate with utility companies to place powerlines underground to prevent hazards and outages associated with falling lines due to weather conditions.
 - Greenville County continually recommends to both developers and utility departments to install utilities underground. Ongoing outreach.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Engineering, Land Development	County Budget	On-going	Winter Storms, High Winds/Tornados, Earthquakes	Greenville County, All Municipalities

- Paris Mountain Wildfire Mitigation Plan
 - A Hazard Mitigation Grant application has been submitted to FEMA for development of a plan for the Paris Mountain area.
 - Project completed. Currently preparing close out and final payment request from FEMA.
 - Requested FEMA to approve plan and incorporate into HMP.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Emergency Management	FEMA HMGP County Budget	Prepare upon award of grant application	Wildfires, Drought, Climate Change	Greenville County

- Repetitive Loss Area Plan
 - A Repetitive Area Loss Analysis was completed by the County per the Community Rating System (CRS) requirements. As a result, the Insurance Services Office (ISO) requires a repetitive loss plan. The County has created and is implementing the plan as required.
 - Repetitive Loss outreach letters were mailed. A total of 77 letters were sent to repetitive loss property owners and associated surrounding properties.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Floodplain Administration	County Budget	On-going	Floods	Greenville County

- Update Existing Watershed Studies
 - Determine new levels of service for each road crossing.
 - Due to budget, Greenville County will delay updating the 5 existing watershed studies and focus on completing the Enoree river basin study (pending Grant approval funding).
 - Currently underway with the Middle Tyger Creek and Lower Reedy River watershed studies. Both projects are in the initial field surveying phase.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Floodplain Administration	County Budget	As budget becomes available	Floods	Greenville County, All Municipalities

- Enoree River Basin Study
 - Prepare a watershed master plan for the Enoree River basin identifying potential flooding problems and solutions.
 - **Project will proceed once FEMA approved grant.**

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Floodplain Administration	County Budget	As budget becomes available	Floods	Greenville County

- Travelers Rest and Marietta Area Watershed Study
 - Prepare a watershed study in developing areas of Travelers Rest and Marietta.
 - **Portions of this watershed are incorporated into the Enoree River Basin Study. See above.**

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Floodplain Administration	County Budget	As budget becomes available	Floods	Greenville County, Travelers Rest

PUBLIC EDUCATION & AWARENESS

- Enhanced GIS Database
 - Continue to update the County’s GIS with hazard related data
 - **The County GIS is updated on a 6 month basis or sooner if needed.**

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Geographic Information Services, Floodplain Administration	County Budget	On-going	All Hazards	Greenville County, All Municipalities

- Realtor Flood Hazard Education
 - Provide hazard data and training to local realtors
 - **Information was mailed to the SC Realtors Association which reaches 3,000 members.**

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Floodplain Administration	County Budget FEMA Grant	On-going	Floods	Greenville County, All Municipalities

- Pre-Prepared Hazard Info Ads

- Prepare ads for hazard preparation to be released immediately before and during natural disasters to provide for a timely response including information on the health and safety risks associated with floodwaters
- Information Brochures on all HMP hazards have been developed. The materials are printed and ready for release as disasters occur.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Emergency Management	Public Service Ads County Budget	On-going	All Hazards	Greenville County, All Municipalities

- Flood Signs
 - Develop signage denoting high flood risk areas and crossings
 - Signage is provided in known flood risk areas.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Floodplain Administration	County Budget FEMA Grant	As budget / grant become available	Floods	Greenville County

- Enhance Hazards Education
 - Develop additional hazard education programs for County staff and the public, introducing Marty the Moose and educational literature
 - The County has a Facebook page and web site with hazard preparedness outreach via Marty the Mitigation Moose.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Floodplain Administration	County Budget	On-going	All Hazards	Greenville County, All Municipalities

- Early Warning System Evaluation
 - Review and evaluate the usage of an early warning system to alert the public about potential hazards.
 - Greenville County works alongside the National Weather Service and local news agencies.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Emergency Management, Floodplain Administration, Engineering	County Budget Grants	As budget / grant become available	Floods, Winter Storms, High Winds/Tornados, Wildfires, Drought, Hail	Greenville County, All Municipalities

- Social Media Public Communication
 - Leverage social media and cell phones by creating hashtags to keep the public engaged and informed.
 - Communicate emergency services available to the public on multiple platforms to reach a wider audience.
 - This information is provided through our emergency management division and supplemented with our website and Facebook page.

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Emergency Management	County Budget	As budget becomes available	All Hazards	Greenville County, All Municipalities

- Emergency Public Communication
 - Determine the most efficient modes of communication for relaying emergency information to the public. This could vary depending on the population, so ensure vulnerable populations are able to be reached.
 - Include references to emergency management websites and social media in communications about hazards. For example, point the public to the EMD website for updates during a hurricane or a local police station Twitter that is providing continuous coverage of an emergency situation.
 - Work with other agencies and departments to create a protocol for communication. This protocol should be written down and developed into an SOP to ensure communication is consistent. Phone numbers used should be general in case of turnover in the department or agency.
 - Establish a protocol for media outlets during a hazardous event. For example, an agreement can be signed by the various media outlets, or a hotline can be established during emergencies for media outlets to contact for information.
 - This information is provided through our emergency management division and supplemented with our website and Facebook page.
 - Emergency Management manages the CodeRED Emergency notification system for the County with the ability to send out alerts via IPAW (integrated public alert and warning system).

Responsible Party	Funding Source(s)	Timeline	Hazard Addressed	Jurisdictions Covered
Emergency Management	County Budget Public Service Ads	As budget becomes available	All Hazards	Greenville County, All Municipalities

- Protection Education
 - Provide education for homeowners and business owners on how to properly prepare for hazardous conditions. This could include agencies to contact, websites to visit, and preventative measures the owner can perform such as boarding up windows.
 - Provide education for homeowners on stream maintenance responsibilities and the impact a poorly maintained stream could have on their property.
 - Both Floodplain Management and the Soil and Water Conservation District provide information at public meetings, trade events and outreach mailings.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Floodplain Management Soil & Water Conservation District	County Budget	On-going As budget becomes available	Floods, Winter Storms, High Winds/Tornados, Earthquakes	Greenville County, All Municipalities

NATURAL RESOURCES PROTECTION

- Stream Crossing Debris Removal
 - The County owns and maintains over 1,800 miles of roadway. To the extent practical, provide for removal of debris build up in rivers and streams, especially at road crossings and in highly urbanized areas. This is part of the road maintenance program protocol. Greenville County also implements a beaver dam removal program.
 - This activity is provided by the engineering department as part of their road maintenance program.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Engineering Roads and Drainage	County Budget FEMA Grant	On-going	Floods	Greenville County

- Riparian Area Management Plans
 - Create focused riparian buffer protection plans to target specific issues related to flooding.
 - Identify properties that can be acquired by the county to restore and enhance current riparian areas.
 - Greenville County Planning Department is currently working on plans for several communities containing large areas of County owned floodplain properties.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Land Development Floodplain Management Planning	County Budget	On-going	Floods	Greenville County

- Runoff Reduction
 - Enhance runoff reduction criteria by including creative practices such as Green Infrastructure and Low Impact Development.
 - The County's land development ordinance in conjunction with our comprehensive plan continues to evaluate our plans.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Land Development	County Budget	On-going	Floods	Greenville County

EMERGENCY SERVICES

- Early Warning System Enhancement (See Evaluate Early Warning System)
 - Install flood hazard signage, warning lights, and gates on frequently flooded roadways as well as hazard signage for steep roads, frequently icy bridges, and other known hazards on the road.
 - Install warning systems to notify travelers of road blocks due to fallen trees, ice, and other hazardous conditions.
 - **When an emergency is determined, the County’s Emergency Management division in conjunction with our engineering department and local emergency services provide onsite warning/road closure notification.**

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Emergency Management Floodplain Management Engineering	County Budget FEMA Grant	As budget / grant become available	Floods, Winter Storms, High Winds/Tornados	Greenville County

- Continue Improvements to Radio Communications
 - Radio communications are critical during disasters and the County currently operates multiple radio systems. Upgrade all radio systems to improve communications across divisions and agencies.
 - **Funding has been provided and radio system has been upgraded.**

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Administration Emergency Management	County Budget Grant	On-going	All Hazards	Greenville County

- Communications Protocol
 - Review and continue to coordinate a communication protocol with the news media and to guide the media in disaster reporting
 - **County Public Relations manager works with Emergency Management to provide information to the public prior to and during emergencies.**

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Emergency Management Public Information Officer	County Budget	On-going	All Hazards	Greenville County, All Municipalities

- Post-Disaster Review Meetings
 - DMC and emergency response agency post-disaster debriefings to discuss “lessons learned”.
 - **No declared emergencies during this reporting period.**

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Emergency Management Codes Enforcement/Building Engineering	County Budget	As events occur	All Hazards	Greenville County, All Municipalities

- Evaluation of Emergency Routes
 - Review emergency routes and evacuation routes to ensure they are the safest, most appropriate routes
 - Ongoing evaluation through Emergency Management.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Emergency Services Emergency Management Engineering	County Budget	On-going	All Hazards	Greenville County

- Comprehensive Training
 - Provide appropriate level of emergency response training to all County staff.
 - Greenville County has 5 certified floodplain managers on staff and maintains their certification through webinars and conferences.
 - Emergency Management has 4 SC certified emergency managers on staff. Also has a dedicated training coordinator on staff.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Emergency Management Risk Management	County Budget FEMA Training Programs	As budget becomes available	All Hazards	Greenville County

- Coordinated Bridge De-Icing
 - Continue to coordinate with SCDOT to create a plan for de-icing bridges during winter weather conditions. Currently, “snow meetings” are held with the SCDOT in November and December to prepare for the snow season.
 - Ongoing activity. No issues/storm during this reporting period.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Engineering SCDOT	County Budget SCDOT	On-going	Winter Storms, Hail	Greenville County

- Heating and Cooling

- Continue to provide assistance to the Homeless Alliance and other Non-governmental organizations (NGOs) identifying vulnerable populations and creating plans to provide proper heating and cooling for those populations. Engage with NGOs to find out what type of services they provide that could help with this task.
- If required, notification to the public will be notified where these services are provided.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Emergency Management Codes Enforcement	County Budget Grants	As budget / grant become available	Winter Storms, Drought, Hail	Greenville County

- Backup Power
 - Identify critical places that may require backup power such as fueling stations, food sources, and vulnerable populations and, to the extent practical, work with NGOs and others to create a plan to provide this power in the event of an emergency. Critical County facilities already have emergency power plans in-place.
 - Evaluation of this activity will be addressed in the updated County Comprehensive/Resiliency plan.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Emergency Management	County Budget Grants	On-going	Winter Storms, High Winds/Tornados, Earthquakes, Hail	Greenville County, All Municipalities

PROPERTY PROTECTION

- Elevation Grant Program
 - Continue providing elevation grants to eligible County residents.
 - This plan is still active and available. Information can be found on Floodplain web page.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Floodplain Management	County Budget FEMA HMGP	On-going	Floods	Greenville County

- Flood Mitigation Acquisition Program
 - Continue acquiring appropriate, eligible properties to reduce buildings at high risk of flooding.
 - County continues to fund and promote our floodplain buyout program. To date the county has removed 219 structures from the special flood hazard areas representing 136.5 acres.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Floodplain Management	County Budget FEMA HMGP	On-going, as grants become available	Floods	Greenville County

- Identify/Mitigate Infrastructure
 - Identify infrastructure at risk through basin studies and mitigate as appropriate.
 - County currently has two active basin studies and waiting on FEMA grant for third.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Engineering Floodplain Management	County Budget FEMA Grant	As budget / grant become available	Floods	Greenville County

STRUCTURAL PROJECTS

- Critical Facility Retrofits/Relocations
 - Identify and evaluate critical facilities for risk and mitigate as appropriate.
 - No facilities have currently been identified.

Responsible Party	Funding Source(s)	Timeline	Hazards Addressed	Jurisdictions Covered
Floodplain Management Emergency Management Engineering	County Budget FEMA Grant	As budget / grant become available	Floods	Greenville County



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April 2023

To: Repetitive Loss Area Property Owners

**Re: Repetitive Loss Areas and Floodplain Management Information
National Flood Insurance Program (NFIP)**

Dear Sir or Madam:

You are receiving this letter because you own and/or reside in a home located in an area that is subject to flooding. In fact, one or more properties located in your area have experienced “repetitive losses” due to flooding. Repetitive loss properties are those properties for which two or more claims of more than \$1,000 have been paid by the NFIP within any 10-year period since 1978. Although repetitive loss properties represent only 1% of all the NFIP’s insurance policies, they have accounted for nearly one-third of the claim payments.

Greenville County is concerned about repetitive flooding and has an ongoing program to address problem flooding areas. However, there are things that each property owner can do to protect themselves from damage caused by flooding events. The enclosed Brochure provides information on flooding issues and floodplain management such as:

Local Flood Hazards	Permit Requirements
County Flood Services	Flood Insurance
Flood Warnings	Natural and Beneficial Functions
Property Protection Measures	Drainage System Maintenance
Flood Safety	

Greenville County also has a program to assist residents whose structures are located in floodplain areas and/or have experienced structural flood damage. The Residential Elevation Grant Program will provide up to \$7,500 to elevate flood prone homes which meet eligibility requirements. For more information on this program please visit our web site at www.greenvillecounty.org/floodplainadministration. Information related to flood insurance can be found at www.floodsmart.gov.

Please contact our office if you have questions regarding the enclosed information or floodplain management issues.

Sincerely,

Brian Bishop, P.E., CFM
Floodplain Administrator
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