

Greenville County
Multi-jurisdictional Hazard Mitigation Plan Update
Section Eight
COMPILATION OF PROPOSED MITIGATION INITIATIVES

Introduction

This section of Greenville County Multi-jurisdictional Hazard Mitigation Plan Update contains the compilation of the proposed mitigation initiatives that have been formulated as the result of the planning efforts by the Disaster Mitigation Committee. These mitigation initiatives form the fundamental mechanism for the implementation of the multi-jurisdictional mitigation plan. That is, when the resources and opportunity to do so become available, the sponsoring organization implements an initiative to address the vulnerabilities of the facilities, systems and planning areas that have been identified through the mitigation planning process. After each successful implementation of an initiative, the benefited community will become that much more resistant to the impacts of future disasters.

Initiatives Incorporated into the Mitigation Plan

The compilation is based on a prioritization that was conducted by the Initiative Ranking Committee, a sub-group of the Disaster Mitigation Committee overseeing the development of the Multi-jurisdictional Hazard Mitigation Plan Update. The proposed initiatives discussed in this section are specific mitigation actions and projects being considered to reduce the effects of each hazard” pursuant to §201.6(c)(3)(ii) of the federal regulations.

As specified in the procedures given in Section 4 of the plan, each proposed mitigation initiative is subjected to a review and analysis by the Disaster Mitigation Committee. The purpose of this review and analysis is to ensure that an initiative proposed by a participating organization or community group is based on an adequate level of technical analysis, that all needed information about the proposal is presented, that any assumptions utilized are reasonable and logical, that the proposal is consistent with the goals and objectives of the DMC, and that it is addressing identified vulnerabilities of the community or shortfalls in the communities’ mitigation policy framework. More specifically, the Initiative Ranking Committee’s review and analysis process is focused on ensuring the technical validity of the proposal, making a judgment whether the initiative would be technically effective and cost-beneficial, if it is duplicative or in conflict with other proposed initiatives, or if its implementation would have an adverse affect in another jurisdiction. If necessary, the proposal is returned to the sponsoring organization for revision.

When the Initiative Ranking Committee reaches a favorable judgment regarding the proposal, a recommendation is made to the Disaster Mitigation Committee that it be adopted for incorporation into the Greenville County Multi-jurisdictional Hazard Mitigation Plan. The Disaster Mitigation Committee can then review the proposal for any other

concerns, such as its consistency with other community-based plans, programs, and political policies, and if appropriate, formally approve the proposal and its incorporation into the plan. In this way, each mitigation initiative is only incorporated into the plan after satisfactorily undergoing a “peer review” process considering both technical validity and policy compliance.

The following is a brief description of the initiatives that have been considered by the Disaster Mitigation Committee for inclusion in the Greenville County Multi-jurisdictional Hazard Mitigation Plan Update. Some of the listed initiatives were introduced in the previous plan (*), but not fully executed. They were re-introduced during the update period. The initiatives are divided into six categories of initiatives: Prevention, Public Education & Awareness, Natural Resources Protection, Emergency Services, Property Protection, and Structural Projects. In addition to the proposed initiatives identified below, the County has also developed a “Debris Management Plan.” This plan’s resolution can be found in Appendix G.

A. Prevention

***Upper Reedy Study:** A storm water master plan for the Upper Reedy River will be prepared. The County will collect information, perform field reconnaissance, and prepare hydraulic & hydrologic models to identify structures, conditions, and parameters affecting hydrologic performance of the watershed. An alternative analysis will be conducted to identify potential solution sets.

***Gilder Creek Study:** To develop a storm water master plan for Gilder Creek, the County will collect field information and perform field reconnaissance to identify structures, conditions, and parameters affecting hydrologic performance of the watershed. This study will also use data from the AMEC study for Gilder Creek which covered approximately 9.5 of the 75 miles of stream. An alternative analysis will be conducted to identify potential solution sets.

Bridge/Culvert Analysis: During major rain events, several roads throughout the County tend to overtop. This mitigation activity will require a detailed analysis of each bridge/culvert on those roads to prioritize possible upgrades.

County Severe Weather Safety Manual: As an effort to keep County Employees safe, this mitigation activity proposes that the County develop a Severe Weather Safety Manual for all field workers. The manual will include safety tactics to follow during heavy rains, thunderstorms, ice storms and other severe weather related events.

B. Public Education and Awareness

Enhance Hazards Education: In an effort to educate County residents about hazard damages and their role in hazard mitigation, information will be distributed at the library and County offices and through a planned “speakers bureau” that will cover a variety of topics, of which hazards will be included.

Realtor Flood Hazard Education: The County proposes to meet with the Greater Greenville Realtor Association to discuss matters of flooding and other hazards involved with real estate.

Pre-prepared Hazard Info Ads: The County proposes to implement use of pre-prepared TV/Radio ads to alert residents of forthcoming Hazards. These ads will cover safety tactics as well as other emergency info that Residents could find useful.

Flood Signs: Flood signs will be placed at designated culverts and bridges to warn drivers of potential flood depths.

Weather Stations: In an attempt to collect more localized hazard data, the County proposes to install weather stations at local fire stations, middle/high Schools, and possibly landfills. This data will be used to collect data on weather events and to educate the public on hazard related issues.

***Flood Insurance Rate Map (FIRM) Updates:** The County is currently in the process of updating its FIRMs. The County has identified priority areas for the mapping efforts. A FEMA study contractor met with the County in January of 2009 to begin efforts.

***Enhance GIS Database:** The County is constantly collecting information on a variety of items. One of the current efforts is in the area of stormwater management including an outfall inventory. Other mitigation related layers may include floodplains, zoning and planning areas, landuses, soils and other hazard related data not limited to, tornado paths, lightening strikes, wildfires, floods and etc.

***Real-time Hazard Updates:** In an effort to effectively distribute information to County residents, the County proposes to formalize an information system to provide regular updates during hazard events. This system can distribute information such as road conditions, tornado sightings, sanding routes, or inundated areas. The updates could be relayed through radio, television, internet, or others. An initial system was in place during the last ice storm. The County received a good response from the community.

C. Natural Resources Protection

***Stream Crossing Debris Removal:** Debris which has accumulated at stream constriction points (eg. bridges, culverts, bends, etc.) can cause localized flooding at those points. Greenville County, in cooperation with the Natural Resources Conservation Service (NRCS), has identified over twenty-five (25) such locations throughout the County. These locations will be cleaned and stream banks repaired using federal funding (25% matching funds). See the table on the next page for identified points. This project is ongoing and accounted for in the County budget.

D. Emergency Services

Early warning system: Early warning systems were discussed for a number of applications including both natural and man-made disasters. A "Reverse 911" based software can be used to dial phone numbers of residents within an impacted area. The LEPC (Local Emergency Planning Committee) is interested using this system to alert citizens of accidental chemical releases. This system could also be used for flooding and wind events. The system requires an initial investment in the software and training and a "per use" fee.

Gates at flooded intersections: The County has several roadways and intersections that flood under more frequent rain events. Currently, during such events, the respective fire departments place temporary barricades at these intersections. These barricades are often moved by motorists wanting passage. This initiative would construct permanent gates at these intersections with “Knox Locks” to allow for passage of emergency vehicles only during flooding events.

Improve Radio Communications: The County currently operates several different radio systems making it difficult for various departments and emergency service providers to communicate with each other. This initiative would purchase a common communications system to be used county-wide.

Installation of River Gages: Installation of river gages at appropriate locations would be useful in gathering data for future studies, determining a stream’s response to rainfall, and in establishing an early warning system for flooding.

Develop Formal Agreements with Utility Providers: After severe events, critical facilities throughout the County need to be functional as soon as possible. This mitigation initiative will form an agreement between the County and utility companies to ensure that they will restore lost power to these facilities first and then proceed to aid the remainder of the County.

Develop Inter-local Agreements: In efforts to keep other municipalities / National Weather Service (NWS) aware of new developments upstream, the County proposes that adjacent municipalities form a standard agreement between one another, and NWS, to share information that may affect the downstream Community. Flooding is a common issue once urbanization occurs. The County also proposes that the NWS be notified if any homes are removed from the floodplain.

Evaluation of Emergency Routes: Emergency routes were discussed to ensure that Emergency Services can properly get to those in need. The purpose of this initiative is to re-evaluate routes taken to certain Communities and ensure that there is more than one way into those Communities.

Comprehensive Training Strategy: This initiative will identify positions throughout the County that require training, find the appropriate training courses, and match the personnel accordingly.

Communication Protocol: The County proposes to have a standard Communication procedure between City’s, the County, EMD and the National Weather Service.

E. Property Protection

***Dwelling Elevation Program:** This is an ongoing program that has currently elevated six (6) structures. Plans are being prepared for others. The program has a priority system of which areas/buildings to mitigate first. The priority is based on the following:

- Repetitive Loss Structures (42 total)

- Buildings in the floodplain with flood insurance
- Other buildings needed mitigation in floodplain without insurance

Other dwellings could be included upon review and availability of funds. Several areas have been identified to receive attention in this program. The areas of highest importance are listed below.

- Del Norte Community
- Rocky Creek
- Gilder Creek
- Plano Drive

As a result of the watershed studies, additional structures were identified for acquisition. To date, twenty-nine (29) properties have been acquired in the Lake Fairfield, Del Norte and Kingsgate communities. During the next planning effort, the acquisition program should be considered as a separate mitigation activity.

Flood Mitigation Acquisition: Structures and properties are purchased by the County and the structures are removed from the property and the property is deed restricted against any new development in perpetuity and is in the name of the County. This program has removed a total of 50 structures from flood prone areas since 2006.

Critical Facility Review: Currently, the assessment of critical facilities for this Mitigation Plan is based on readily available information and did not include detailed site investigations. To improve this portion of the Plan, a review of critical facilities, particularly shelters should be performed. This review will determine if the facilities are designed and constructed to withstand potential disasters.

Relocate Fire Stations: Several fire stations around the County need to have detailed risk assessments performed. The Wade Hampton and Boiling Springs Fire Stations are in or near the floodplain and have difficulty getting out of the station during high flow events. The Parker and Glassy Mountain fire stations may have trouble during ice storms. In addition, the Glassy Mountain Fire Station at 49 Dividing Waters Rd., Travelers Rest, SC is located downstream of a high hazard dam and should be evaluated.

F. Structural Projects

425 Drainage Projects: These are a list of prioritized projects around the County that reduce localized flooding. The list covers all known flooding problem areas and is maintained by the County Engineer.

