RESOLUTION NUMBER 10-2010

A RESOLUTION ADOPTING THE CITY OF GREER HAZARD MITIGATION PLAN

WHEREAS, the citizens and property within the City of Greer are subject to the effects of natural hazards and man-made hazard events that pose threats to lives and cause damages to property, and with the knowledge and experience that certain areas, i.e., flood hazard areas, are particularly susceptible to flood hazard events; and

WHEREAS, the City desires to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the Legislature of the State of South Carolina have delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry; and

WHEREAS, the City of Greer has been charged by the Federal Emergency Management Agency and the State of South Carolina with the responsibility of developing a mitigation plan aimed at reducing the community's vulnerability to natural hazards; and

WHEREAS, it is the intent of the City Council of the City of Greer to fulfill this obligation in order that the city will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the city; and

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local governments must develop an All-Hazards Mitigation Plan in order to receive future Hazard Mitigation Grant Program Funds; and

NOW, THEREFORE, be it resolved that the City Council of the City of Greer hereby:

1. Adopts the City of Greer Hazard Mitigation Plan; and

2. Vests the City Fire Chief with the responsibility, authority, and the means to:

   (a) Inform all concerned parties of this action.
   (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of issues relating to threats posed by natural hazards.

3. Agrees to take such other official action as may be reasonably necessary to carry out the strategies outlined within the 2010 City of Greer Hazard Mitigation Plan.

PASSED, ADOPTED and APPROVED by the Council of the City of Greer this 10th day of August, 2010.

CITY OF GREER, SOUTH CAROLINA

Rick Danner, Mayor

ATTEST:

Tammela Duncan, Municipal Clerk

(SEAL)

CITY OF GREER, SOUTH CAROLINA

HAZARD MITIGATION PLAN

Adopted by the City of Greer City Council: August 10, 2010
Approved by the Federal Emergency Management Agency: November 8, 2010

Prepared by:

Holland Consulting Planners, Inc.

Wilmington, North Carolina

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Section 1. Introduction

A. Introduction

When a major natural event strikes our built environment, it is deemed a "natural disaster." Hazard mitigation is simply about preventing natural disasters. The idea of preventing natural disasters at first seems counter-intuitive, if not impossible. We certainly cannot prevent natural events, such as hurricanes and tornadoes. Yet the impacts of natural events—who and what gets hurt-- are largely determined by what, where, and how we build and function. Thus, some impacts of natural hazards on our population and economic, social, and physical environment are, in the bigger picture, self-inflicted. As citizens and local government entities, we have not inherited a perfectly planned and resilient community. Due to this fact, we must assess current vulnerabilities resulting from past decisions relating to development design and location in an effort to reduce the harmful impacts of natural, and in some cases man-made, hazards.

The South Carolina Statewide Plan summarizes hazard mitigation as follows:

> "Hazard mitigation involves the use of specific measures to reduce the impact of hazards on people and the built environment. Measures may include both structural and non-structural techniques, such as protecting buildings and infrastructure from the forces of nature or wise floodplain management practices. Actions may be taken to protect both existing and/or future development. It is widely accepted that the most effective mitigation measures are implemented before an event at the local government level, where decisions on the regulation and control of development are ultimately made."

B. Hazard Mitigation Legislation

In the early 1990s, a new federal policy regarding disasters began to evolve. Rather than simply reacting whenever disasters strike communities, the federal government would encourage communities to first assess their vulnerability to various disasters, and then take actions to reduce or eliminate potential risks. The logic is simply that a disaster resistant community can rebound from a natural disaster with less loss of property or human injury, at much lower cost, and consequently, more quickly. Moreover other costs associated with disasters, such as the time lost from productive activity by business and industries, are minimized.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Pub. Law 93-288, as amended) embodies this new philosophy. Section 409 of the Stafford Act sets forth the requirements that communities evaluate natural hazards within their respective jurisdictions and develop an appropriate plan of action to mitigate those hazards. The amended Stafford Act requires that the community identify potential hazards to the health, safety, and well being of its residents and identify and prioritize actions that can be taken by the community to mitigate those hazards – before disaster strikes. For communities to remain eligible for hazard mitigation assistance from the federal government, they must first prepare a hazard mitigation plan (this plan).

Responsibility for fulfilling the requirements of Section 409 of the Stafford Act and administering the FEMA Hazard Mitigation Program, as outlined in the Code of Federal Regulations (44 CFR 206.405), has been delegated to the State of South Carolina, specifically to the South Carolina Emergency Management Division (SCEMD).

The Disaster Mitigation Act of 2000 (DMA 2K) amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Act) by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of mitigation plan requirements (Section 322). This new section emphasizes the need for state, Tribal, and local entities to closely coordinate mitigation planning and implementation efforts.

C. City of Greer Hazard Mitigation Plan

Hazard mitigation offers the following benefits to the City of Greer, and the HMP is being completed to attain the following goals:

- Saving lives and reducing injuries;
- Preventing or reducing property damage, and reducing economic losses;
- Minimizing social dislocation and stress, and protecting mental health;
- Maintaining critical facilities in functional order;
- Protecting infrastructure from damage;
- Providing options for political leaders regarding hazard reduction;
- Fulfilling Federal and State requirements for receipt of future disaster recovery and hazard mitigation assistance;
- Improving inter-jurisdictional cooperation and coordination, especially regarding the reduction of natural hazard impacts;

- Increasing local awareness regarding threats associated with natural and mad-made hazards.

Hazard mitigation planning is intended to construct a framework for the prevention and reaction to disasters if and when they may occur. The framework created by this plan will help to instill an ongoing effort to lessen the impact that disasters have on citizens and property within the City of Greer. The above listed items are but only a few of the many complex issues that the formulation of such a process will ultimately address.

The City of Greer has received a grant through the South Carolina Emergency Management Division (SCEMD) and the Federal Emergency Management Agency (FEMA) to develop a comprehensive Hazard Mitigation Plan. Through this effort, the City will work to define goals that focus on reducing the vulnerability of city facilities and resources to natural and man-made disasters, in response to the federal regulations outlined above. Goals, policies, and accompanying implementing actions associated with these goals will focus on strengthening existing and future infrastructure, facilities, and development. Additionally, through the planning process, the Mitigation Advisory Committee (MAC) will review existing administrative systems to ensure that proper mechanisms are in place to provide adequate response and facilitate public assistance funding in the event of a natural disaster.

D. Plan Organization

The City of Greer Hazard Mitigation Plan includes the following sections and appendices:

- **Section 1 - Introduction** includes an overview of the planning process and purpose. This section provides a justification for why the plan is being developed, and what the City intends to achieve in carrying out the development and implementation of this document.

  Additionally, this section contains a description of the plan methodology and development process, and a list of participating members of the planning group, a summary of planning group activities, a description of involved stakeholders including state and local agencies and public participants, a list of stakeholder and public involvement efforts, and a description of how this plan will be incorporated into existing programs.

- **Section 2 - Community Profile** outlines the existing conditions within the City of Greer. This overview addresses the following: demographics, topography, climate, and other general information regarding the community.

- **Section 3 - Hazard Identification** provides a breakdown of hazards that have historically impacted the City of Greer. This section also includes a discussion of anticipated effects and impacts resulting from each identified hazard.

- **Section 4 - Capability Assessment** provides an assessment of the City's current hazard mitigation practices, as well as their potential to engage in mitigation activities. This section involves a discussion of the existing plans, codes, and ordinances, and administrative mechanisms currently utilized.

- **Section 5 - Vulnerability Assessment** presents the vulnerability assessment, which includes (1) an inventory of assets, (2) loss estimates, (3) evaluation of the potential impact of development trends, (4) results of the analysis.

- **Section 6 - Mitigation Strategies** contains information regarding the mitigation goals and multi-hazard mitigation action items pertaining to the City as a whole. Section 6 also includes information regarding how mitigation measures will be prioritized, implemented, and administered.

- **Section 7 - Plan Maintenance and Implementation Procedures** describes the system the City of Greer has established to monitor the mitigation plan; provides a description of how, when, and by whom the mitigation plan and mitigation actions will be evaluated; presents the criteria used to evaluate the plan and mitigation actions; and explains how the plan will be maintained and updated.

- **Appendices** presents documentation as outlined within the plan.

E. Planning Process

In 2007, the City of Greer applied for a Pre-Disaster Mitigation (PDM) program grant through the South Carolina Emergency Management Division (SCEMD). In 2008, SCEMD approved the City's grant application (SCEMD Grant Number PDMC-PL-04-SC-2007-004) and the City of Greer began its hazard mitigation planning process.

The primary reason for the City of Greer electing to undergo an independent planning process was the issue of Greer having split-County jurisdictions (see Map 1, Regional Location Map). Greer has been directed by FEMA and SCEMD that the City must either participate in both County planning efforts, or draft one independently. Based on this directive, the City has opted to undertake this process, and may request inclusion in the two County plans in conjunction with the next five-year update cycle, approximately 2012.

Upon receipt of the aforementioned PDM grant, primary responsibility for development of the City of Greer Hazard Mitigation Plan was placed in the hands of the City of Greer Fire Department under the direction of Chief Chris Harvey. Chief Harvey worked closely with all City departments and the Greer Commission of Public Works (CPW) throughout the planning process to develop this document.

The City of Greer Planning Department and other applicable City staff completed significant data collection which contributed towards plan development. This data assisted primarily in the areas of hazard identification and analysis, mapping of hazards, assessment of community capabilities and identification of critical facilities.

In March of 2008, the City of Greer solicited the assistance of Holland Consulting Planners, Inc., (HCP) of Wilmington, North Carolina, to assist in the development of a comprehensive Hazard Mitigation Plan.

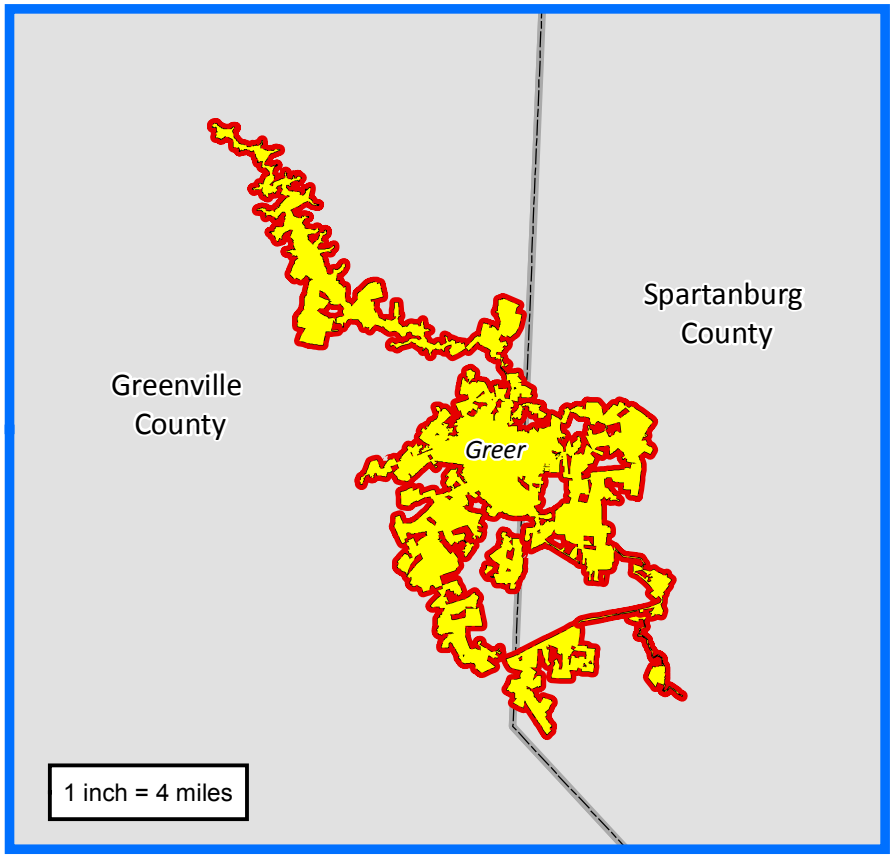
Subsequent to establishing a work authorization with HCP, the City of Greer held an initial scoping meeting with the project consultant. This meeting involved a general discussion of how the project should be carried out, including issues relating to the development of a Mitigation Advisory Committee (MAC). It was determined that the MAC would be comprised predominantly of administrative officials from the City and the Greer Commission of Public Works (CPW). In addition to these individuals, a member of the development community and a citizen at-large were selected to participate.

Dealing with natural hazards and disasters is rarely the responsibility of one employee or official in any community. Rather, it is a team effort, often comprised of representatives from city/town management and administration, planning/zoning, public works, fire/police, and other offices (depending on the size of the community).

Greer
City of Greer, SC

Map 1
Hazard Mitigation Plan
Regional Location





Legend

- City of Greer
- SC County Boundaries

0 10 20 40 60 80 Miles

HCP Holland Consulting Planners, Inc.

The City convened the MAC in order to efficiently address this "multi-disciplinary" aspect of hazard mitigation. MAC members were charged with the responsibility of working through the planning process, and assisting HCP in compiling the information, input, and background required to develop the plan.

The following outlines all individuals assigned to the MAC, and their related area of expertise in relation to the overall project:

MAC Members	Area of Expertise
Chuck Barnes, Randy Olson	Public Utilities
Chris Harvey	Fire Protection & Emergency Management
Dan Reynolds, Jolene Vancil, Matt Hamby	Police Protection, Emergency Management
Phil Rhoads	Building Standards, Inspections
Glenn Pace	Planning
Justin Glenn	Geographic Information Systems (GIS)
Ann Cunningham	Recreation
John Burns	Public Services
Don Holloman	Engineering
Bryant Halt	Developer
George H. McCall	Citizen At-Large

A series of meetings were held to develop the Hazard Mitigation Plan, each focusing on a specific aspect of the planning process. A total of five MAC meetings were held, and several additional meetings took place between staff and various interests involving plan development. The following provides a brief summary of all meetings held and what was addressed at each:

- **May, 2008** – MAC representatives (City staff) convened for a scoping and overview meeting with the consultant. This meeting focused on the planning process, and what the city would like to achieve through the development of a Hazard Mitigation Plan. Formal decisions were made regarding the MAC's compositions, and these recommendations were forwarded to the City Council for formal actions.

- **June, 2008** – The consultant met with several City department heads in an effort to establish an information base for plan development. This effort focused primarily on data collection, and establishing a broad understanding of where the City stands with respect to land use planning and emergency management. Substantial progress was made during these meetings regarding data collection and background analysis.

- **August, 2008** – This was the first of five formal MAC meetings held at the City of Greer Administration Building. This meeting was advertised locally and open to the public. The agenda for this meeting focused on identifying critical/community facilities within the City of Greer. Committee members were provided worksheets in advance of the meeting and asked to identify all facilities and utilities applicable to their respective department they deemed critical to the day-to-day operation of the City. The meeting involved a discussion of the completed worksheets. The committee also began a review and discussion of hazards at this meeting.

- **October, 2008** – The MAC continued discussion of hazard identification and vulnerability. Historical data was presented to the committee outlining weather events impacting the City of Greer, as well as Greenville and Spartanburg Counties. The results of the August meeting were presented, and the committee started to discuss how goals, policies, and implementing actions could be developed to address these hazards. A brain-storming session was conducted at this meeting to outline goals and prioritize where the focus of mitigation efforts should be directed. This meeting was advertised locally, and was open to the public.

- **November, 2008** – A work session was held with the MAC to formalize mitigation objectives and implementing actions focused on addressing the goals developed and prioritized through the brain-storming session conducted at the October meeting. This meeting was not advertised and was handled as a collaborative work session.

- **January, 2009** – Final draft mitigation objectives and implementing actions were presented to the committee. All action statements were reviewed, and primary and secondary responsibility was assigned. Time frames were assigned to each implementing action based on the perceived difficulty of carrying out a given

activity. The results of this effort have been directly translated into the policy section of this document. This meeting was advertised locally, and was open to the public.

- **February, 2009** – Two meetings were held in February to finalize the planning process, and move toward the review process. On February 19, 2009, a public input and information meeting was held to provide an overview of the draft plan and allow the public an opportunity to comment on the strategies that had been developed by the MAC. The meeting was held in the City Council Chambers at the City of Greer Administration Building, and was conducted as an open house with ample opportunity for questions and input from the citizens. The feedback from this meeting was incorporated into future drafts of the plan. On February 18, 2009, a MAC meeting was held to disseminate and review the draft plan. Subsequent to this date, a review period was established to allow adequate time for City, agency, and SCEMD review and comment.

- **August, 2010** – A final public hearing and public review meeting was held prior to adoption of the Greer Hazard Mitigation Plan. This effort was intended to provide an overview of the final draft document and give the public an opportunity to provide feedback. No comments were received from the public.

A draft version of the plan was completed on February 10, 2009, and distributed to MAC members and representatives of the following stakeholder offices/organizations for review and comment at the February 18th MAC meeting.

- Greenville County Emergency Management Department
- Spartanburg County Emergency Management Department
- City of Greer Planning Department
- City of Greer Building Inspections
- Greenville County Department of Social Services
- Spartanburg County Department of Social Services
- Greer Commission of Public Works (CPW)
- South Carolina Department of Transportation
- City of Greer Police Department
- City of Greer Administration
- Salvation Army
- American Red Cross

Comments and concerns received from these solicitations were incorporated into a final HMP draft along with comments received from the public input and information meeting held on February 19, 2009.

After incorporation of all comments, the final draft HMP was submitted to the SCEMD Mitigation Planning Branch for review. Review comments were received from SCEMD in January 2010, and revisions were made to the draft HMP based on SCEMD comments (see Appendix 1).

A final, revised draft HMP was resubmitted to SCEMD in February 2010. Following receipt of a final letter of approval from SCEMD, the HMP was forwarded to City of Greer City Council for adoption. Prior to adoption, a final public hearing was held in order to allow the public and the above-identified stakeholder groups the opportunity to make comments on and provide input to the final plan. The affidavit of publication for the required public hearing notice and the adoption resolution from this meeting have been provided as Appendix 2.

Section 2. Community Profile

A. Location and General Topography

The City of Greer is located within the Piedmont region of South Carolina, at an elevation of approximately 1,016 feet. The City's corporate limits fall within the boundaries of two counties: Greenville and Spartanburg. Approximately 61% (13.2 square miles) of the City is located in Greenville County, while 39% (8.4 square miles) is located in Spartanburg County. The terrain is comprised of foothills with several small intervening watercourses. There are several large lakes located within or near the corporate limits, including Lake Robinson and Lake Cunningham.

The City of Greer is centrally located along Highway 29 between the cities of Greenville (12.5 miles) and Spartanburg (22 miles). Other significant urban centers and their proximity to Greer are outlined below:

- Columbia, South Carolina – 110 miles
- Atlanta, Georgia – 159 miles
- Charlotte, North Carolina – 93 miles
- Asheville, North Carolina – 62 miles

B. History

From a tiny crossroads village/trading post, Greer had its beginning over 100 years ago in 1876, and has grown into a thriving city with a population of approximately 20,000. As we journey into the next cycle of 100 years, Greer's future looks bright and promising.

During the earlier years of Greer's existence, the "horse and buggy" days, growth seemed to move at a snail's pace. But the rugged men and women who settled Greer (or Greer's Station as it was first known) were true pioneers who left their mark and a rich heritage for their descendants. Many of the early settlers of Greer and the surrounding area have descendants who are still living and who have had important roles in the development and progress that has been achieved over the years.

From the earliest days, Greer had a reputation as a good trading post, and for the past half-century the City has been known as one of the best business towns in all of South Carolina. The City attracts trade from a large area and has grown and prospered through the years.

For many years, Greer was an agriculture center and the principal industry was textiles. But today, many fine diversified industries have located in and around Greer, helping to give the city and area a more balanced economy. Most of the industries, which have located in Greer and the surrounding area since the end of World War II, have expanded their plants, increased production, and added more employees with larger payrolls, all of which has been a boon to the economy of this entire area.

After World War II, the agriculture area around Greer gradually moved away from cotton. Peaches are still an important crop, but farmers have also turned in increasing numbers to cattle raising and the growing of soybeans and other crops.

Greer, by being strategically located between Atlanta and Charlotte, is in one of the fastest growing areas in the country with splendid rail, highway and air transportation facilities available. The area also has dependable labor, good roads and schools, and an ideal climate.

The City of Greer has excellent utilities systems provided by the Greer Commission of Public Works. Through the construction of Lake Robinson, Greer has a water supply source adequate to meet the area's projected growth for many years to come.

Today, Greer is a blend of the old and the new – the old being the descendants of the old timers, and the new being those of us who have moved in from elsewhere to share in, and have a part in, the growth and prosperity of Greer and Upper South Carolina.

Source: http://www.cityofgreer.org/About/History_First100Years.aspx

C. Climate

The City of Greer has a mean high temperature of 70.8° F, a mean low temperature of 49.2° F, and a annual mean average temperature of 60.0° F. The City receives approximately 51.27 inches of precipitation annually. The earliest freeze day will typically occur in mid-October, with freezing weather subsiding by early April.

The following summarizes annual climatic conditions for the City of Greer:

	Temperature (Low / High)
January	30˚ F / 50˚ F
February	32˚ F / 54˚ F
March	39˚ F / 63˚ F
April	47˚ F / 72˚ F
May	56˚ F / 79˚ F
June	64˚ F / 85˚ F
July	68˚ F / 88˚ F
August	67˚ F / 86˚ F
September	61˚ F / 81˚ F
October	49˚ F / 71˚ F
November	40˚ F / 62˚ F
December	33˚ F / 53˚ F
Average Annual Rainfall	50.6 inches
Average Annual Snowfall	6.5 inches
Annual # of Days with Mostly Sunny Weather	221
Annual # of Days Below 32˚ F / 0˚ C	88
Annual # of Days Above 90˚ F / 32˚ C	29

Source: National Oceanic and Atmospheric Administration.

D. Demographic Summary

1. Population

The South Carolina Office of Research and Statistics has estimated the City of Greer's permanent population at 23,395 for 2007, a substantial 38.9% increase since the year 2000. Since the 1990 US Census, the City of Greer has become one the fastest growing municipalities within South Carolina. The 2007 City of Greer State of the City Report estimates that the City's population may exceed 25,000 persons by the year 2010, and possibly 40,000 by 2020. These estimates are aggressive; however, feasible according to growth trends outlined since the 1990 Census. Table 1 provides a summary of the City's population growth from 1970-2007.

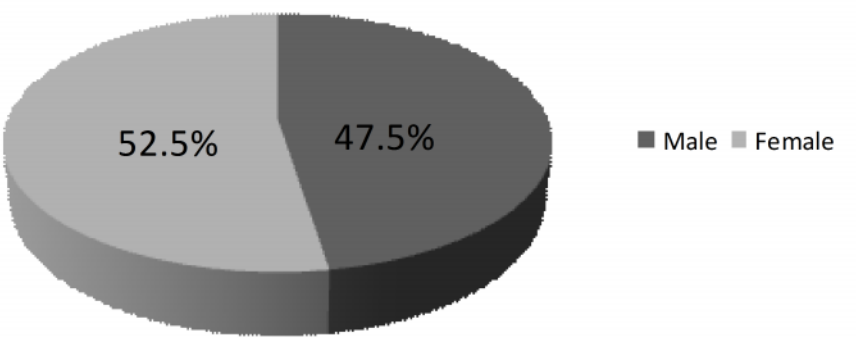
Table 1. City of Greer Population Growth, 1970-2007

	Population					Percentage Change				
	1970	1980	1990	2000	2007	'70-'80	'80-'90	'90-'00	'00-'07	'70-'07
Greer	10,642	10,525	10,322	16,843	23,395	-1.1%	-1.9%	63.2%	38.9%	119.8%

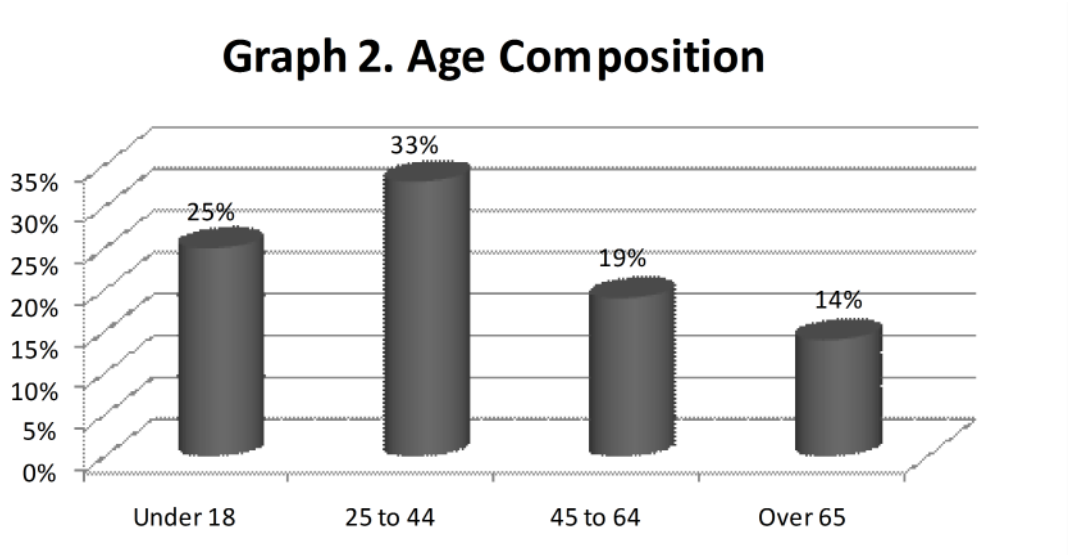
Source: US Census Bureau.

As shown in Graph 1, the City of Greer population is fairly evenly distributed with respect to gender composition.

Graph 1. Gender Composition



The following graph provides an overview of the age breakdown for Greer's population.



2. Housing

As evidenced by the population figures outlined in the previous section, the City of Greer has experienced a drastic increase in residential development since 1990. This development is a result of the population boom sparked by increased job opportunity, and the City's close proximity to the cities of Greenville and Spartanburg. A detailed summary of existing land use is provided later in the Plan (see Section 5).

Throughout the development of this plan, it is critical that hazard mitigation play a role in defining land use development policy. Through these efforts, the City will establish a built environment that is sustainable and resistant to the effects of natural and man-made disasters. The tables below provide an overview of the drastic increases in development activity the City has experienced in recent years.

Table 2 summarizes housing tenure of residential units within the City of Greer, while Table 3 provides an overview of construction activity related to residential development in the City dating back to 2005.

Table 2. City of Greer Housing Units, 2000

	Number	Percentage
Occupied Housing Units	**6,714**	**90.9%**
Owner Occupied	4,111	55.7%
Renter Occupied	2,603	35.2%
Vacant Housing Units	**672**	**9.1%**
Vacant for Rent	292	4.0%
Vacant for Sale	127	1.7%
Rented or Sold, Not Occupied	77	1.0%
Vacant for Seasonal, Recreational, or Occasional Use	19	0.3%
Vacant for Migrant Workers	0	0.0%
Vacant for Other Reasons	157	2.1%
Total Housing Units	**7,386**	**100.0%**

Source: US Census Bureau.

Table 3. City of Greer Residential Building Permit Activity

Year	Single-Family Permits	Multi-Family Permits	Total Residential Permits	Total Construction Value
2005	454	6	460	$52,443,442
2006	418	0	418	$49,561,558
2007	303	18	321	$40,860,142

Source: City of Greer.

According to the US Census, there were 5,206 housing units within the City as of 1980. Since that time, there has been a drastic increase in the City's housing stock. This increase has been necessary to support the City's burgeoning population.

Based on building permit activity collected at the end of 2007, there were 10,303 total housing units within the City. Since the year 2000, an average of 390 additional units have been constructed annually. Nearly all of this housing development has been in the form of single-family homes; however, there has been modest increases in multi-family construction.

3. Economy

The following provides a brief summary of significant economic factors for the City of Greer. The City has established itself as a regional center through the expansion of its industrial base and increased housing opportunities. The most significant economic factor impacting the City in recent years (1994) was the opening of the BMW manufacturing plant located immediately adjacent to the City's corporate limits. Although the plant is not located within the City, it has been a major contributing factor to the growth and expansion of the City over the last fourteen years. Table 4 lists the major employers impacting job creation within the City of Greer as of 2008.

Table 4. City of Greer Major Employers

Employer	# of Employees	Major Product/Service
BMW Manufacturing Corporation	5,000	Automobiles
Mitsubishi Polyester Film LLC	662	Polyester Film
Greer Memorial Campus	500	Health Services
Cryovac Division-Sealed Air Corporation	1,152	Plastic Packaging Material
Honeywell Engine Systems & Services	500	Parts for Gas Turbine Engines
Ashmore Brothers	180	Road Building
Michelin North America	952	Radial Truck Tires
City of Greer	203	Government
Lear Corporation	392	Automotive Seats
CDS Ensembles Inc.	162	Bedding Manufacturer
Greer Commission of Public Works	136	Utility
Creform Corporation	150	Modular Material Handling Systems

Source: Greer Development Corporation.

The City of Greer maintains a median income that falls slightly below the neighboring cities of Greenville and Spartanburg. The median income for the City of Greer according to the 2000 US Census was $53,039, while the cities of Greenville and Spartanburg had median incomes of $58,607 and $55,559, respectively.

Section 3. Hazard Identification

A. Introduction

This section of the HMP identifies and analyzes the hazards facing the City of Greer, as well as Greenville and Spartanburg Counties. This approach was taken due to the fact that a number of these natural hazards can impact large or small portions of the City in conjunction with unincorporated portions of the County. This section also includes a discussion of man-made hazards located within the City of Greer. Through discussions with the MAC, it was determined that the City is much more vulnerable to the potential impacts of man-made disasters as opposed to natural disasters. This determination was based on a review of historical occurrences of natural disasters within the City and the surrounding region.

This section aims to address the following questions:

- What are the *types* of natural hazards that threaten the community?
- What are the *characteristics* of each hazards?
- What is the *likelihood* of occurrence (or probability) of each hazard?
- What is the likely *magnitude* of the potential hazards?
- What are the possible *impacts* of the hazards on the community?

The following section identifies each hazard, natural and man-made, that poses an elevated threat to the City of Greer. A rating system is provided that rates the potential for occurrence for each identified threat. The following natural hazards were determined to be of concern for the City of Greer:

- Severe Winter Weather/Ice Storm
- Severe Weather/Thunderstorm
- Dam/Levee Failure
- Flooding
- Hail
- Lightning
- Drought/Extreme Heat
- Tornado
- Wildfire
- Earthquake

A detailed explanation of these hazards and how they have historically impacted the City of Greer is provided on the following pages. The weather history summaries provided throughout this discussion have been compiled from two independent sources: the National Oceanic and Atmospheric Administration (NOAA) and the University of South Carolina Spatial Hazard Events and Losses Database for the United States (SHELDUS).

Data utilized from NOAA was provided through the National Climatic Data Center (NCDC). The NCDC compiles monthly reports that track weather events and any financial or life loss associated with a given occurrence. These reports are compiled and stored in an online database that is organized by state and county for the entire United States.

SHELDUS is a county-level hazard data set for the United States for 18 different natural hazard event types such as thunderstorms, hurricanes, floods, wildfires, and tornadoes. For each event the database includes the beginning date, location (county and state), property losses, crop losses, injuries, and fatalities that affected each county. The data set does not include Puerto Rico, Guam, or other U.S. territories.

The records from these two sources were cross-referenced for accuracy and completeness. The tables presented within this section , as well as Appendix 3 are the results of this research.

B. Severe Winter Weather/Ice Storm

Geographically, the City of Greer lies within a region historically prone to the affects of occasional snowstorms and ice storms. These events can, and often time do, produce numerous negative impacts upon the transportation network, power transmission facilities, communications facilities, agricultural commodities, and the health of citizens.

Severe winter storms display themselves in a wide variety of ways including heavy snow, blizzards, freezing rain, ice pellets, and extreme cold. Severe winter storms are extra-tropical cyclones fueled by strong temperature gradients and an active upper-level jet stream. The storms that hit South Carolina usually form in the Gulf of Mexico or off the southeast Atlantic Coast. In South Carolina, very few of these storms result in a blizzard.

Snow and ice storms are fairly common, with 85 incidents recorded since 1960, resulting in a conservative estimate of $24.8 million in property damage for both Greenville and Spartanburg Counties.

The following provides an overview of historical occurrences relating to severe winter weather within the City of Greer and unincorporated Greenville and Spartanburg Counties dating back to 1995. A comprehensive summary of winter weather events dating back to 1960 has been provided in Appendix 3.

Table 5. Greenville and Spartanburg Counties Severe Winter Weather, 1995-2007

Date	Type/Magnitude	Injuries	Fatalities	Property Damage
1/6/1995	Freezing Rain	0	0	20,000
2/4/1995	Cold Weather	0	1	0
2/12/1995	Cold Weather	0	1	0
12/27/1995	Cold	0	1	0
1/6/1996	Winter Storm	0	0	14,286
1/7/1996	Winter Storm	0	0	14,286
1/12/1996	Extreme Cold	0	2	0
3/8/1996	Extreme Cold	0	0	0
12/25/1996	Cold	0	2	0
1/9/1997	Ice Storm	0	0	80,000
2/21/1998	Cold	0	1	0
1/2/1999	Ice Storm	0	0	4,000,000
12/4/2002	Snow, Ice, Sleet	0	0	18,181,818
2/26/2004	Ice	0	0	475,000
12/15/2005	Ice Storm	0	0	600,000
4/8/2007	Frost/Freeze	0	0	0
	TOTAL	0	8	23,385,390

Source: NOAA and SHELDUS.

C. Severe Weather/Thunderstorm

Thunderstorms are underrated with respect to the damage, injury, and death they can bring. Lighting precedes thunder, because lightning causes thunder. As lightning moves through the atmosphere, it can generate temperatures of up to 54,000 degrees Fahrenheit. This intense heating generates shockwaves which turn into sound waves, thus generating thunder.

Warm, humid conditions encourage thunderstorms as the warm, wet air updrafts into the storm. As warm, moisture rich air rises, it forms cumulus nimbus clouds (thunderstorm clouds) usually with a flattened top or an anvil shape, which can reach altitudes of over 40,000 feet. If this air is unstable, the conditions are favorable for causing hail, damaging winds, and tornadoes.

Damage to property from direct or indirect lightning can take the form of an explosion or a burn. Damage to property has increased over the last 35 years as a direct results of increased population. The National Weather Service recorded 19,814 incidents of property damage between 1959 and 1994. Yearly losses are estimated at $35 million by the National Weather Service. This amount is compiled from newspaper reports, but many strikes are not reported. The National Lightning Safety Institute estimates annual damages between $4 and $5 billion. This information is compiled from insurance reports and other sources that keep track of weather damages.

Thunderstorm winds also cause widespread damage and death. Thunderstorm "straight line" wind occurs when rain-cooled air descends with accompanying precipitation. A thunderstorm is considered severe when winds exceed 57.5 mph. At the very extreme, winds of 160 mph have been recorded. These winds can smash buildings, uproot and snap trees, and are often mistaken for tornadoes.

"Downbursts" are often spawned during thunderstorms. Downbursts are an excessive burst of wind that is sometimes mistaken for tornadic activity. These are defined as surface winds in excess of 125 mph, which are caused by small scale downdrafts from the base of a convective cloud. A downburst occurs when rain-cooled air within a convective cloud becomes heavier than its surroundings. Since cool air is heavier than warm air, it rushes toward the ground with a destructive force. Exactly what triggers the sudden downward rush is still unknown.

Downbursts appear to strike at a central point and blow outward. Picture a bucket of water dashed against grass. If it hits straight on, the grass will be flattened in a circular pattern. If it hits at an angle, the grass will be flattened in a teardrop pattern. Downbursts can be further classified into two categories:

- **Microburst** – Less than 2-1/2 miles wide at the surface, duration less than 5 minutes and winds up to 146 miles per hour.

- **Macroburst** – Greater than 2-1/2 miles wide at the surface, duration of 5-30 minutes with winds up to 117 miles per hour.

The City of Greer is extremely susceptible to thunderstorms and windstorms, suffering 149 such events since 1961. Although statistics regarding deaths, injuries, and property damage are only available on a regional basis (Greenville and Spartanburg Counties combined), these storms have caused 9 deaths, 18 injuries and over $15.2 million in property damage regionally.

The following provides an overview of historical occurrences relating to severe weather/thunderstorms within the City of Greer and unincorporated Greenville and Spartanburg Counties dating back to 2004. A comprehensive summary of winter weather events dating back to 1961 has been provided within Appendix 3.

Table 6. Greenville and Spartanburg Counties Severe Weather/Thunderstorms, 2004-2008

Date	Type/Magnitude	Injuries	Fatalities	Property Damage
7/5/2004	Not Reported	0	0	$155,000
7/11/2004	Not Reported	0	0	$110,000
7/29/2004	Not Reported	0	0	$5,000
8/20/2004	Thunderstorm Wind	0	0	$2,000
4/22/2005	Thunderstorm Wind	0	0	$45,000
6/6/2005	Thunderstorm Wind	0	0	$1,000
7/1/2005	Thunderstorm Wind	0	0	$5,000
7/7/2005	Thunderstorm Wind	0	0	$5,000
8/10/2005	Heavy Rain	0	0	$10,000
10/7/2005	Heavy Rain	0	0	$20,000
8/20/2006	Thunderstorm Wind (G50)	0	1	$0
6/14/2007	Thunderstorm Wind (60EG)	0	0	$8,000,000
6/25/2007	Thunderstorm Wind (65EG)	0	0	$60,000
6/30/2007	Thunderstorm Wind (55EG)	0	0	$3,000
3/4/2008	Not Reported	0	0	$0
	TOTAL	0	1	8,421,000

Source: NOAA and SHELDUS.

D. Dam/Levee Failure

A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. This term is roughly synonymous with the term "levee" and these terms will be used interchangeably in this document.

Dams provide tremendous benefits, including water supply for drinking and irrigation, hydroelectric power, recreation, and navigation. At the same time, however, dams also represent a great risk to public safety, the environment, and local and regional economies when they fail. Dam failure is the collapse, breach, or other failure of a dam resulting in downstream flooding. Since 1993, more than 200 documented dam failures nationwide have cause millions of dollars in property damage and repair costs.

In 1994, the Federal Emergency Management Agency (FEMA) and the US Army Corps of Engineers (USACE) sponsored a National Inventory of Dams (NID). Through working with State dam safety officials, each dam was assigned a downstream hazard classification based on the potential for loss of life and damage to property should the dam fail. This NID is updated yearly by FEMA with USACE funds and the assistance of state regulators.

The three classifications of dams identified by the NID are "high-hazard," "significant hazard," and "low hazard." High hazard dams are those dams whose failure would cause loss of human life and significant property damage. South Carolina has 185 high hazard dams. Another 792 dams in the State are classified as significant or low hazard dams.

Dams in South Carolina are regulated under the Dams and Reservoir Act of 1977, which authorizes the implementation of a dam inspection and certification program in the interest of public health, safety, and welfare. The dam inspection and certification program is administered by the Dam Safety Program (DSP) of the South Carolina Department of Health and Environmental Control (DHEC). Each year, the DHEC performs inspections and identifies dams which exhibit conditions that could lead to failures. These dams are called "unsafe" dams, which mean that they have deficiencies that leave the dam susceptible to failure. Most "unsafe" dams are also "high-hazard" dams.

Dams are dynamic structures that experience both internal and external changes in their conditions as they age. Old pipes deteriorate and development in a watershed causes more runoff that can result in the overtopping of dams. Large storm events, such as hurricanes or severe thunderstorms, can overwhelm a dam's ability to function properly.

In conclusion, the growing number of dams, the aging of the dams, and the significant increase in population exposed to consequences of dam failure mean that the risk to citizens of South Carolina from dam failure is increasing.

There are three dams that have been identified by DHEC as potentially having an impact on the City of Greer. These include the Lake Robinson Dam, Lake Cunningham Dam, and Moon Lake Dam. Lake Cunningham serves as the primary water source for the City of Greer and surrounding areas. Lake Robinson serves as a backup water source. These two dams are monitored heavily, and breach of these structures would impact the City of Greer. DHEC last inspected these dams in August of 2007. No significant problems were identified during these inspections.

Moon Lake Dam is a small structure located on private property. Some improvements to this structure were conducted in 2006 to remedy a problem related to the dam's outfall. The structural integrity of this dam is currently stable, and no problems exist according to DHEC.

There is no documented history of dam/levee failure for any of the dams located within close proximity to the City of Greer. Thus, no listing of historical occurrences is provided.

E. Flooding

The City of Greer is located within South Carolina's Tyger Watershed, and has several watercourses running through its corporate limits including the Enoree River, South Tyger River, Maple Creek, Ward's Creek, and Frohawk Creek. There are several different types of flooding which have various levels of potential for affecting the City of Greer. These types of flooding are as follows:

- **Riverine Flooding** – This is the most common type of flooding. It occurs when a river or streams overflows its banks. In large rivers, it usually occurs after a serious, large-scale weather event. In streams, this can occur from more localized weather systems.

- **Flash Floods** – Flash floods typically encompass a quick rise of high velocity water and large amounts of debris. Factors that contribute to flash flooding include the length and intensity of rain and the steepness of watershed and stream gradients. Other factors influencing flash floods include the amount of watershed vegetation, natural and artificial water storage, and the configuration

of the streambed and floodplain. Flash floods not only occur from weather systems, but also from a dam failure. This type of flood poses the most risk to property and lives. Because of the rapid rise of the water levels, a large percentage of flood deaths occur from motorists who underestimate the depth and velocity of the floodwaters and attempt to cross flooded areas. This typically occurs when a weather event quickly drops an extensive amount of water. Walls of water from this type of event can reach 15 to 20 feet.

- **Dam Break Floods** – Results from structural failures of dams.

- **Local Drainage or High Groundwater Levels** – Heavy precipitation from local weather events may produce flooding outside of delineated floodplains. If the local soil cannot handle precipitation through infiltration and runoff, the water may accumulate. During winter, frozen ground and accumulated snow will contribute to this problem. This type of flooding generally occurs in flat and urban areas. High groundwater levels may cause leakage in susceptible basements.

- **Fluctuating Lake Levels** – Lake levels can change over a short period of time, over a season, or on a long-term basis. Heavy rain or snow can influence levels. All lakes are susceptible to changes in water level, but the problem seems to occur most often in lakes that are landlocked or have inadequate outlets for maintaining a balance between in and outflow. These types of lakes can fluctuate from 5 to 15 feet over an extended period of time.

The City of Greer administers local ordinances which regulate development within designated flood areas. The City also participates in the National Flood Insurance Program which rates areas within the City in regards to susceptibility of flooding.

The dominant sources of flooding in the City of Greer are riverine flooding and flooding resulting from localized drainage issues. Approximately 14.5% of the City's land area is located in the 100-year floodplain, according to the most recent Flood Insurance Rate Maps (FIRM). Updated FIRM maps will be produced in the near future under the South Carolina remapping initiative. The hazard vulnerability section of the plan will provide further details regarding City of Greer acreage located within the floodplain.

Greer has not been subjected to flooding on a frequent basis. In 2003, there were two serious flooding events in the months of March and August that resulted in property damages of approximately $1,000,000 and $10,000, respectively. Of greater concern to the citizens of Greer is localized flooding. The City operates a municipal stormwater system (MS4) that is maintained by the City's engineering department. Stormwater hot spots within the City have been mapped and are delineated on Map 2. The engineering department constantly monitors the system and identifies capital projects that will serve to alleviate localized flooding. This issue will be discussed further within the vulnerability assessment portion of the plan.

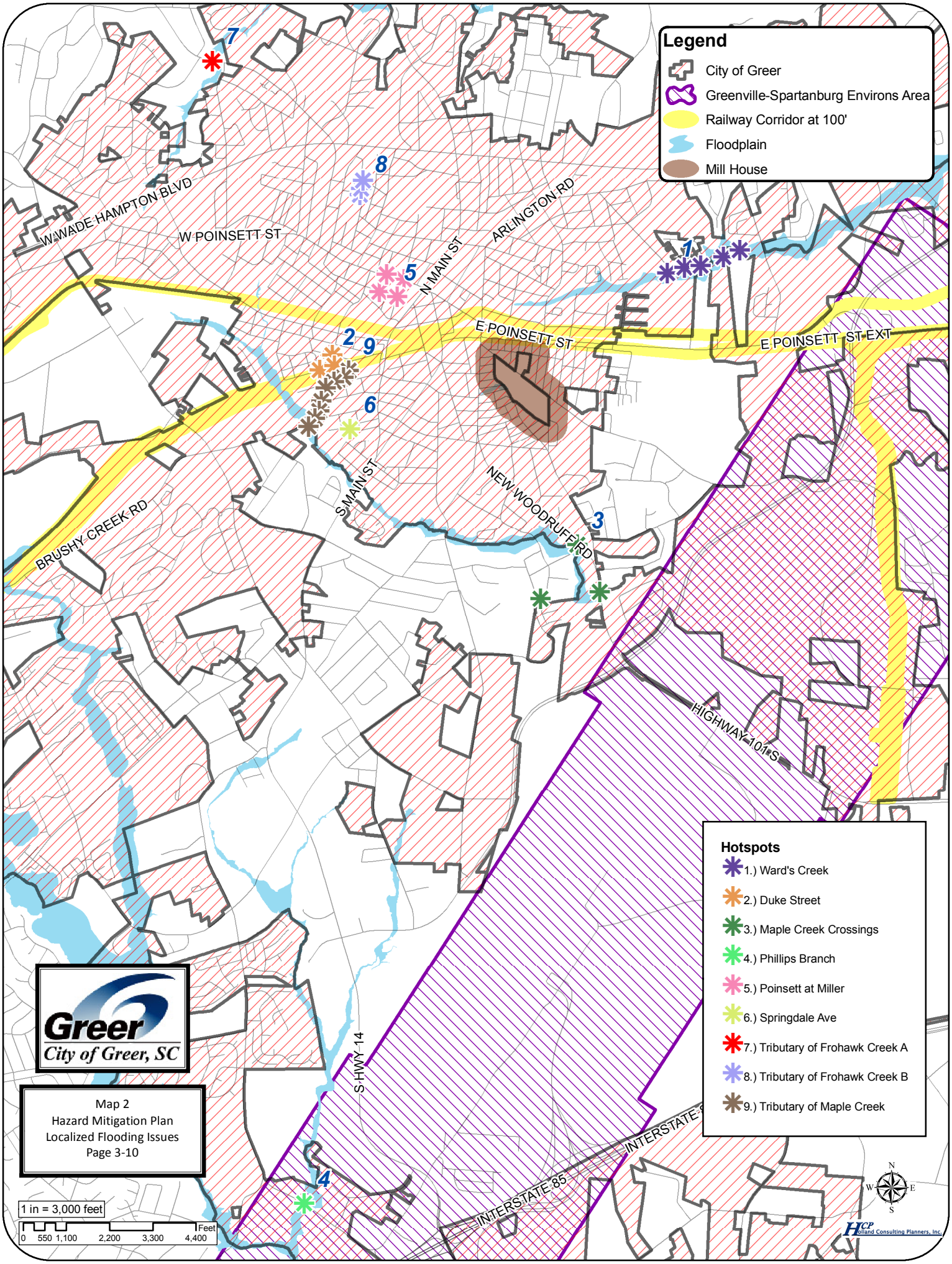
A comprehensive summary of flooding events dating back to 1966 for all of Greenville and Spartanburg Counties has been provided within Appendix 3.

F. Hail

Hail is formed in huge cumulonimbus clouds, commonly known as thunderheads. When the ground is heated during the day by the sun, the air close to the ground is heated as well. Hot air, being less dense and therefore lighter than cold air, rises and cools. As it cools, its capacity for holding moisture decreases. When the rising, warm air has cooled so much that it cannot retain all of its moisture, water vapor condenses, forming puffy-looking clouds. The condensing moisture releases heat of its own into the surrounding air, causing the air to rise faster and give up even more moisture.

Cumulonimbus clouds contain vast amounts of energy in the form of updrafts and downdrafts. These vertical winds can reach speeds over 176 kilometers (110 miles) per hour. Hail grows in the storm cloud's main updraft, where most of the cloud is in the form of "supercooled" water. This is water that remains liquid although its temperature is at or below 0 degrees Celsius (32 degrees Fahrenheit). Supercooled water drops need something on which to freeze, or it remains liquid. Ice crystals, frozen raindrops, dust, and salt from the ocean are also present in the cloud. On collision, supercooled water will freeze onto any of these hosts, creating new hailstones or enlarging those that already exist.

When there is a great deal of supercooled liquid in the air through which the hailstone falls, water accumulates faster than it can freeze, so a coat of liquid forms. This becomes a layer of clear ice when it does freeze. When a hailstone falls through air with a smaller amount of liquid, the liquid freezes on contact with the hailstone, forming small air bubbles in the opaque layers. The more supercooled water a hailstone makes contact with, the larger and heavier the stone is likely to become. When the hailstone becomes so heavy that the updraft can no longer support it, it falls from the sky.


Legend
City of Greer
Greenville-Spartanburg Environs Area
Railway Corridor at 100'
Floodplain
Mill House
W WADE HAMPTON BLVD
W POINSETT ST
ARLINGTON RD
N MAIN ST
E POINSETT ST
E POINSETT ST EXT
S MAIN ST
NEW WOODRUFF RD
BRUSHY CREEK RD
HIGHWAY 101 S
S HWY 14
INTERSTATE 85
INTERSTATE
Hotspots
1.) Ward's Creek
2.) Duke Street
3.) Maple Creek Crossings
4.) Phillips Branch
5.) Poinsett at Miller
6.) Springdale Ave
7.) Tributary of Frohawk Creek A
8.) Tributary of Frohawk Creek B
9.) Tributary of Maple Creek
Greer
City of Greer, SC
Map 2
Hazard Mitigation Plan
Localized Flooding Issues
Page 3-10
1 in = 3,000 feet
0 550 1,100 2,200 3,300 4,400 Feet
N
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HCP Holland Consulting Planners, Inc.

NOAA has three rankings associated with hail hazards that provide an indication of the threat associated with an approaching hailstorm: Low, Moderate, and High. The following provides a summary of conditions that may be anticipated under each warning classification:

- **Low** – Chance of a damaging hail (>3/4 inch in diameter [penny size or larger]) is in the 5-15% range. Hail size is generally expected to be less than 3/4 inch in diameter (pea size).

- **Moderate** – Chance of a damaging hail (>3/4 inch in diameter [penny size or larger]) is in the 15-25% range. Hail size is generally expected to be in the 3/4 to 1 inch in diameter range (penny to quarter size).

- **High** – Chance of a damaging hail (>3/4 inch in diamter [penny size or larger]) is greater than 25%. Hail size is generally expected to be greater than 1 inch in diameter (half dollar size or larger).

Hail storms occur in the City of Greer on a periodic basis. There have been 16 hail storms reported in the City dating back to 1997. This does not necessarily account for events that may have occurred within Greenville and Spartanburg Counties that impacted the City. One hail storm in May of 2003 caused property damage of approximately $100,000, but there were no property loss reports associated with the other events. Hail has historically posed more of a threat to agricultural production than the built environment.

A comprehensive summary of hail events dating back to 1961 for all of the Greenville and Spartanburg County region has been provided within Appendix 3.

G. Lightning

Inside of clouds are small particles known as “hydrometeors”. As these particles grow and interact, the collisions cause them to become charged. After studying these particles, researchers believe that the smaller particles tend to become positively charged while the larger particles become negatively charged. Gravity pulls the larger, negatively charged particles downward, and updrafts tend to send the smaller, positively charged particles upward. The result is that the higher portion of the cloud has a net positive charge while the lower portion of the cloud has a net negative charge. The separation of particles causes a large electrical potential not only within the cloud itself, but also between the cloud and the earth. This electrical potential can become millions of volts in magnitude. Eventually, the electrical

resistance in the air breaks down and lightning, the electrical discharge between the regions of the cloud or between the cloud and the ground, is formed.

Lightning is generally associated with other weather events outlined throughout this section. It is being discussed independently due to the fact that it has been identified as a significant hazard in the State of South Carolina Hazard Mitigation Plan, and the fact that there are specific measures that may be taken to mitigate the adverse impacts of lightning strikes. Historical data related to lightning occurrences within the City of Greer and the surrounding Counties has been provided, but these events may also be associated with other weather events listed throughout this section.

The following provides an overview of historical occurrences related to significant lightning storms within the City of Greer dating back to 1996. A comprehensive summary of lightning events dating back to 1961 for all of the Greenville and Spartanburg County region has been provided within Appendix 3.

Table 7. City of Greer Lightning Storms, 1996-2008

Date	Injuries	Fatalities	Property Damage
8/11/1998	0	0	$5,000
5/18/1999	0	0	$20,000
7/11/2004	0	0	$5,000

Source: NOAA and SHELDUS.

H. Drought/Extreme Heat

Drought has several meanings, but generally, drought reduces the amount of water available for agriculture, municipalities, industry, commerce, tourism, fire suppression, and wildlife. Reduction of electrical power generation and water quality deterioration is likely.

Water shortages in some communities have had dramatic effects on local budgets, revenues, and citizens. Near panic situations among some members of the public have caused elected officials to expend considerable efforts to assist the public.

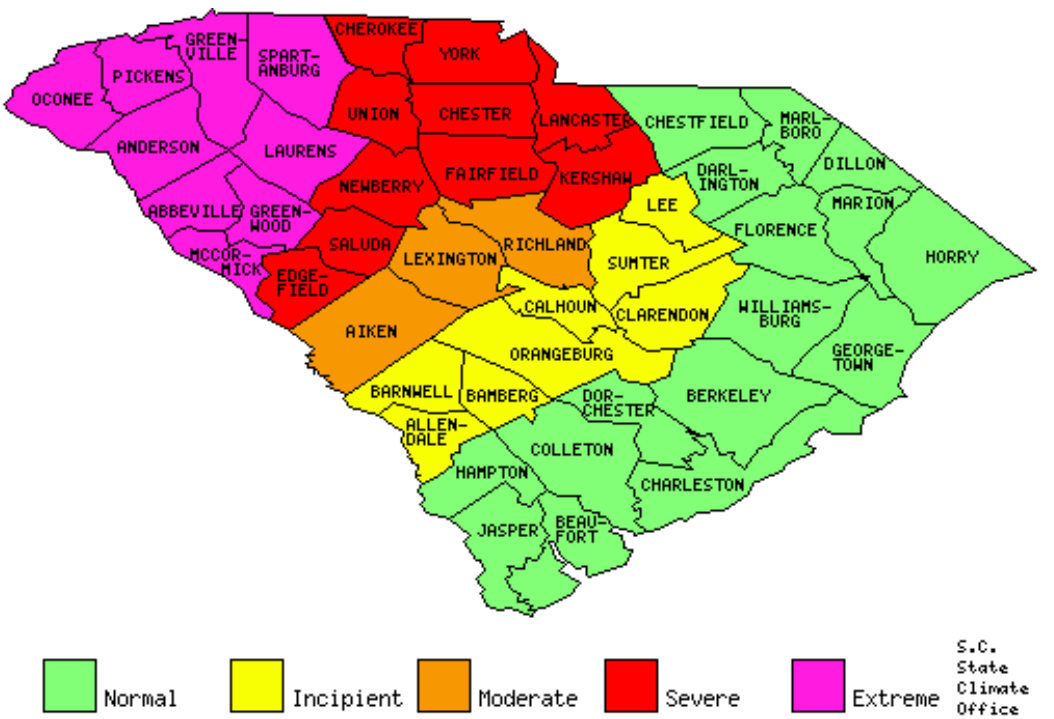
Serious drought conditions have impacted the City of Greer and the surrounding region dating back to late 2007. According to an article in the Raleigh News and Observer in 2008, the

drought is at least the worst on record and statistics have been kept for 113 years. Figure 1 provides an overview of drought conditions present throughout South Carolina in October of 2008.

The South Carolina Drought Response Committee, a council of various state agencies, was organized to coordinate activities of state agencies in the assessment and the response to drought conditions. The Federal Agricultural Assistance Act of 2003 *may* provide assistance to the agriculture community during times of crop or livestock losses during drought periods.

Drought can last for extended periods and effects all citizens, businesses, and government. The Greer Commission of Public Works (CPW) has the authority to restrict use of certain water resources. These restrictions must be enforced through local ordinances. At this time, no mandatory water restrictions have been issued by CPW. Voluntary restrictions were put into place in 2008 in an effort to reduce water consumption by 12%. CPW monitors water levels within Lake Cunningham and Lake Robinson on a daily basis. The need for additional water restrictions is determined solely from decreasing water supply levels at these two sources. If mandatory restrictions become necessary, CPW will work with the City of Greer to establish policies geared toward the enforcement of these restrictions.

Figure 1. South Carolina Drought Status by County, October 28, 2008



A comprehensive summary of droughts dating back to 1977 for all of the Greenville and Spartanburg County region has been provided in Appendix 3.

I. Tornadoes

Tornadoes are produced during severe thunderstorms, which are created near the convergence zone between warm, moist air and cold, dry air. Tornadoes derive their energy from the heat contained in warm, moist air masses. Tornadoes do not form during every thunderstorm. They occur when the moist, warm air is trapped beneath a stable layer of cold, dry air by an intervening layer of warm, dry air. This is called an inversion. If this is disturbed, the moist air will push through the stable air that is holding it down. The warm air will then condense as the latent heat it holds is released. This air will then spiral upwards. With the help of different types of winds, this spiral gains speed, producing a tornado.

The path of a tornado is generally less then .6 miles wide. The length of the path ranges from a few hundred yards to dozens of miles. A tornado will rarely last longer then 30 minutes. The combinations of conditions that cause tornadoes are common across the southern United States in early spring, especially in April and May. Tornadoes have been reported lifting and moving objects weighing more then 300 tons up to 30 feet. They can also lift homes off their foundations and move them 300 feet. They collect an incredible amount of debris, which then can be projected outward at high velocities. Typically, tornadoes are accompanied by heavy rain.

The National Weather Service issues a tornado watch for a specific geographic area when conditions favor tornadic activity. A tornado warning is issued when a tornado has actually been sighted or indicated by weather radar. Tornado intensity or strength is measured using the Enhanced Fujita Tornado Scale as outlined in Table 8.

Table 8. Enhanced Fujita Tornado Scale

Category	Maximum Wind Speeds	Equivalent Saffir-Simpson Scale	Typical Effects
EF0	65 – 85 mph	N/A	Light Damage: Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	86 – 110 mph	Cat 1/2/3	Moderate damage: Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.

Category	Maximum Wind Speeds	Equivalent Saffir-Simpson Scale	Typical Effects
EF2	111 – 135 mph	Cat 3/4/5	Considerable damage: Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136 – 165 mph	Cat 5	Severe damage: Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off ground and thrown; structures with weak foundations blown away some distance.
EF4	166 – 200 mph	Cat 5	Devastating damage: Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	> 200 mph	N/A	Total destruction: strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 300 ft; steel reinforced concrete structures badly damaged; high-rise buildings have significant structural deformation; incredible phenomena will occur.

Source: NOAA.

Tornadoes are not very common but do occur within the region. There have been 20 reported incidents since 1967, resulting in a conservative estimate of $2.9 million in property damage, 102 injuries, and 2 deaths for both Greenville and Spartanburg Counties.

The following provides an overview of historical occurrences relating to tornadoes within the City of Greer and unincorporated Greenville and Spartanburg Counties dating back to 1980. A comprehensive summary of tornado events dating back to 1967 has been provided within Appendix 3.

Table 9. Greenville and Spartanburg Counties Tornado Activity, 1980-2008

Date	Injuries	Fatalities	Property Damage
5/2/1967	0	0	$25,000
5/18/1969	0	0	$50,000
5/27/1973	31	0	$333,334
3/24/1975	4	0	$25,000
9/7/1977	0	0	$25,000
3/23/1979	2	0	$500,000
4/13/1980	3	0	$250,000
5/23/1980	0	0	$50,000
8/17/1985	39	0	$500,000
4/4/1989	0	0	$50,000
5/5/1989	18	2	$250,000
2/10/1990	0	0	$50,000
4/28/1990	4	0	$100,000
3/27/1994	2	0	$25,000
8/16/1994	0	0	$16,667
10/5/1995	0	0	$75,000
9/16/1996	0	0	$15,000
2/21/1997	0	0	$330,000
11/11/2002	0	0	$252,000
1/5/2007	0	0	$10,000
TOTAL	68	2	$2,932,001

Source: NOAA and SHELDUS.

J. Wildfires

A wildfire is an undesirable, uncontrolled burning of grasslands, brush, or woodlands. According to the National Weather Service, more than 100,000 wildfires occur in the United States each year. Approximately 90% of wildfires start as a result of human actions (i.e., campfires, debris burning, smoking, etc.); lightning starts the other 10%.

The potential for wildfire depends upon surface fuel characteristics, weather conditions, recent climate conditions, topography, and fire behavior. Fuels are anything that fire can and will burn, and are the combustible materials that sustain a wildfire. Typically, this is the most prevalent vegetation in a given area. The intensity of fires and the rate with which they spread is directly related to wind speed, temperature, and relative humidity. Climatic conditions such as long-term drought also play a major role in the number and intensity of wildfires, and topography is important because the slope and shape of the terrain can change the rate of speed at which fire travels. There are four major types of wildfires:

- **Ground Fires** – Burn in natural litter, duff, roots or sometimes-high organic soils. Once started they are very difficult to control, and some ground fires may even rekindle after being extinguished.

- **Surface Fires** – Burn in grasses and low shrubs (up to 4' tall) or in the lower branches of trees. They have the potential to spread rapidly, and the ease of their control depends upon the fuel involved.

- **Crown Fires** – Burn in the tops of trees, and the ease of their control depends greatly upon wind conditions.

- **Spotting Fires** – Occur when burning embers are thrown ahead of the main fire, and can be produced by crown fires as well as wind and topographic conditions. Once spotting begins, the fire will be very difficult to control.

Wildfires become significant threats to life and property along what is known as the "wildland/urban interface." The wildland/urban interface is defined as the area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Since 1985, approximately 9,000 homes have been lost to urban/wildland interface fires across the United States.

There is substantial acreage surrounding the City of Greer comprised of undisturbed forestland. As development has spread into areas which were previously rural, new residents have been relatively unaware of the hazards posed by wildfires, and have used highly flammable material for building construction. This has not only increased the threat of loss of life and property, but has also resulted in a greater population of people less prepared to cope with wildfire hazards.

The following provides an overview of historical occurrences relating to wildfire events in the Greenville and Spartanburg County region dating back to 1966.

Table 10. Greenville and Spartanburg Counties - Wildfires

Date	Injuries	Fatalities	Property Damage
3/15/1966	0	0	$21,740
2/1/1976	0	0	$220
3/1/1985	0	0	$21,740
4/1/1985	0.04	0	$220
TOTAL	0.04	0	$43,920

Source: NOAA and SHELDUS.

K. Earthquake

Although earthquakes are unlikely, the potential for seismic activity is present, and therefore needs to be acknowledged (see Appendix 7 for the Modified Mercalli Scale of Earthquake Intensity). The following information regarding earthquake potential within the region was taken from the Greenville County Hazard Mitigation Plan.

> "This hazard involves the sudden quick movement of large pieces of earth, believed to be caused by the slipping of tectonic plates past one another, releasing energy to surface layers. This sudden motion can cause major destruction to buildings, roads, dams, and other structures. In addition, underground utility lines can be ruptured. Greenville County is located approximately 60 miles southeast of an epicenter located near Asheville, North Carolina. An epicenter is the estimated origin of the seismic waves that eventually reach the ground surface.
>
> Although earthquakes have occurred in South Carolina in the recent past, most are of a magnitude that they are not noticed by anyone other than a seismologist. Most of the earthquakes that have occurred recently were located near the Charleston/Summerville area to the south. This is also the location of one of the worst earthquakes in the written history of the eastern United States. Union County to the east has not experienced a significant earthquake in over 90 years. Due to the proximity of Greenville County to this designated epicenter,

the County is considered to be at risk to this hazard. All areas of the County are equally susceptible to this hazard."

The likelihood of a serious earthquake impacting the City of Greer is minimal; therefore, mitigation against significant seismic activity is uniformly not cost-effective. There is no data available relating to historical occurrences of earthquakes with the City of Greer. Although earthquakes are a potential threat, there is no history of occurrence.

L. Ranking of Natural Hazard Potential

The hazards outlined within the preceding sections have been ranked below based on a score derived from several factors. Each hazard was ranked based on frequency, injuries caused, resulting deaths, and annualized property damage losses since 1960. These factors have been ranked on a scale of 1 (High) to 10 (Low). Data utilized to calculate this score was regional in scope including the City of Greer, as well as Greenville and Spartanburg Counties. The table is organized to display the ranking of each hazard with respect to a given factor. As evidenced by the table, the hazards have been listed in order by hazard potential with respect to the City of Greer. Refer to Appendix 4 for detailed analysis. Appendix 4 also contains a map outlining all natural and man-made hazards addressed in this plan.

Table 11. City of Greer Ranking of Hazard Potential

Hazard	Frequency	Property Damage Losses	Injuries	Deaths	Severity
Severe Weather/Thunder Storm	1	3	2	3	9
Severe Winter Weather/Ice Storm	4	1	5	1	11
Flooding	3	2	4	4	13
Lightning	5	6	3	2	16
Hail	2	4	6	5	17
Tornado	7	7	1	6	21
Drought/Extreme Heat	6	5	8	8	27
Wildfire	8	8	7	7	30
Dam/Levee Failure	9	9	9	9	36
Earthquake	10	10	10	10	40

Source: NOAA and SHELDUS.

M. Hazard Damage and Likelihood of Occurrence Summary

The following table provides an estimate of damage potential and likelihood of occurrence based on the preceding sections. All factors were taken into account when filling out these tables including: input from city staff members, data documenting historical occurrences, and instances of storms impacting the region.

Table 12. City of Greer Hazard Impact

Type of Hazard & Associated Elements	Likelihood of Occurrence[1] (Highly Likely, Likely, Possible, Unlikely)	Intensity Rating[2] (Intensity Scales or Relative Terms)	Potential Impact[3] (Catastrophic, Critical, Limited, Negligible)
Severe Weather/ Thunderstorm	Highly likely	Severe	Negligible
Severe Winter Weather/Ice Storm	Likely	Severe	Negligible
Flooding	Possible	Severe	Limited
Lightning	Highly Likely	Severe	Negligible
Hail	Likely	Severe	Negligible
Tornado	Possible	Moderate	Critical
Drought/Extreme Heat	Likely	Moderate	Negligible
Wildfire	Unlikely	Moderate	Critical
Dam/Levee Failure	Unlikely	Moderate	Catastrophic
Earthquake *	Likely	Moderate	Limited

* It should be noted that the earthquakes occurring in and around the City of Greer are extremely minor.

NOTES:

[1] Likelihood of occurrence was estimated using historic data and the following chart:

Likelihood	**Frequency of Occurrence**
Highly Likely	Near 100% probability in the next year.
Likely	Between 10 and 100% probability in the next year, or at least one chance in the next 10 years.
Possible	Between 1 and 10% probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1% probability in the next year, or less than one chance in the next 100 years.

[2] The hazard's intensity was estimated using historic data and various standardized scales as outlined in Table 11 Ranking of Hazard Potential. This table provides a composite score of hazard impact and potential based on four factors including: frequency, number of injuries, number of deaths, ranking based on total property damage losses. The classification listed in the table above is based on the following classifications:

Severe: Hazard potential ranking of 0 to 18
Moderate: Hazard potential ranking of 14 or greater

[3] The potential impact was estimated by considering the magnitude of the event, how large an area within the community is affected, and the amount of human activity in that area, then using the following chart as a tool:

Level	Area Affected	Impact
Catastrophic	More than 50%	• Multiple deaths • Complete shutdown of facilities for 30 days or more • More than 50 percent of property is severely damaged
Critical	25 to 50%	• Multiple severe injuries • Shutdown of critical facilities for 1-2 weeks • More than 25 percent of property is severely damaged
Limited	10 to 25%	• Some injuries • Shutdown of some critical facilities 24 hours to one week • More than 10 percent of property is severely damaged
Negligible	Less than 10%	• Minor injuries • Minimal quality-of-life impact • Shutdown of some critical facilities and services for 24 hours or less • Less than 10 percent of property is severely damaged
N/A	Hazard has no discernable impact on the built environment	

N. Explanation of Hazards not Identified

The following hazards were not identified within the context of this document for the reasons indicated.

Hazard	Why Not Identified
Tsunamis	Given the distance between the City of Greer and the Atlantic Ocean, approximately 200 linear miles, the likelihood of Greer or the surrounding region feeling the effects of such an event are minimal.
Volcanoes	There has been no record of any volcanic activities within proximity to the City of Greer in recent geologic time.
Hurricanes	Although the City of Greer may receive latent effects of hurricanes, such as severe thunderstorms, there is minimal history of adverse impacts relating to hurricanes and tropical storms.
Coastal Storms	As with Tsunamis, the City of Greer's distance from the Atlantic Ocean greatly diminishes and possibly eliminates coastal storms as being a factor of concern.

O. Man-Made Hazards

While working through the planning process with the MAC, it was determined that the City of Greer faces several man-made hazards that pose a potential threat to life and property. Although identifying and addressing man-made hazards are not a requirement under the Hazard Mitigation planning guidelines, it is recommended that they be identified and acknowledged within the context of the plan. The MAC has identified four man-made hazards and attempted to address them within the context of this plan: development located within and adjacent to the environs of the Greenville-Spartanburg International Airport, Tier II or other hazardous chemical sites located within the City's corporate limits, development within proximity to the "Old Mill House" site, and development encroaching on the rail lines which traverse through the center of the City.

1. Greenville-Spartanburg International Airport Environs

Environs of the Greenville-Spartanburg International Airport (GSP) are flanked on all sides by reaches of the City of Greer corporate limits. The environs in relation to the City of Greer are shown on Map 3. Development within close proximity to the airport is regulated through the Greenville-Spartanburg Airport Environs Area Zoning Ordinance. An overlay district specifies zoning standards aimed at minimizing encroachment along runway approach zones. As noted in the policy portion of this plan (Section 6), the City will aim to address development regulations within portions of the town adjacent to this overlay district. This effort will incorporate guidance from airport administration, as well as the Greenville and Spartanburg County Planning Departments. Existing and anticipated development figures for this area are provided within Section 4 (Vulnerability Assessment) of the plan.

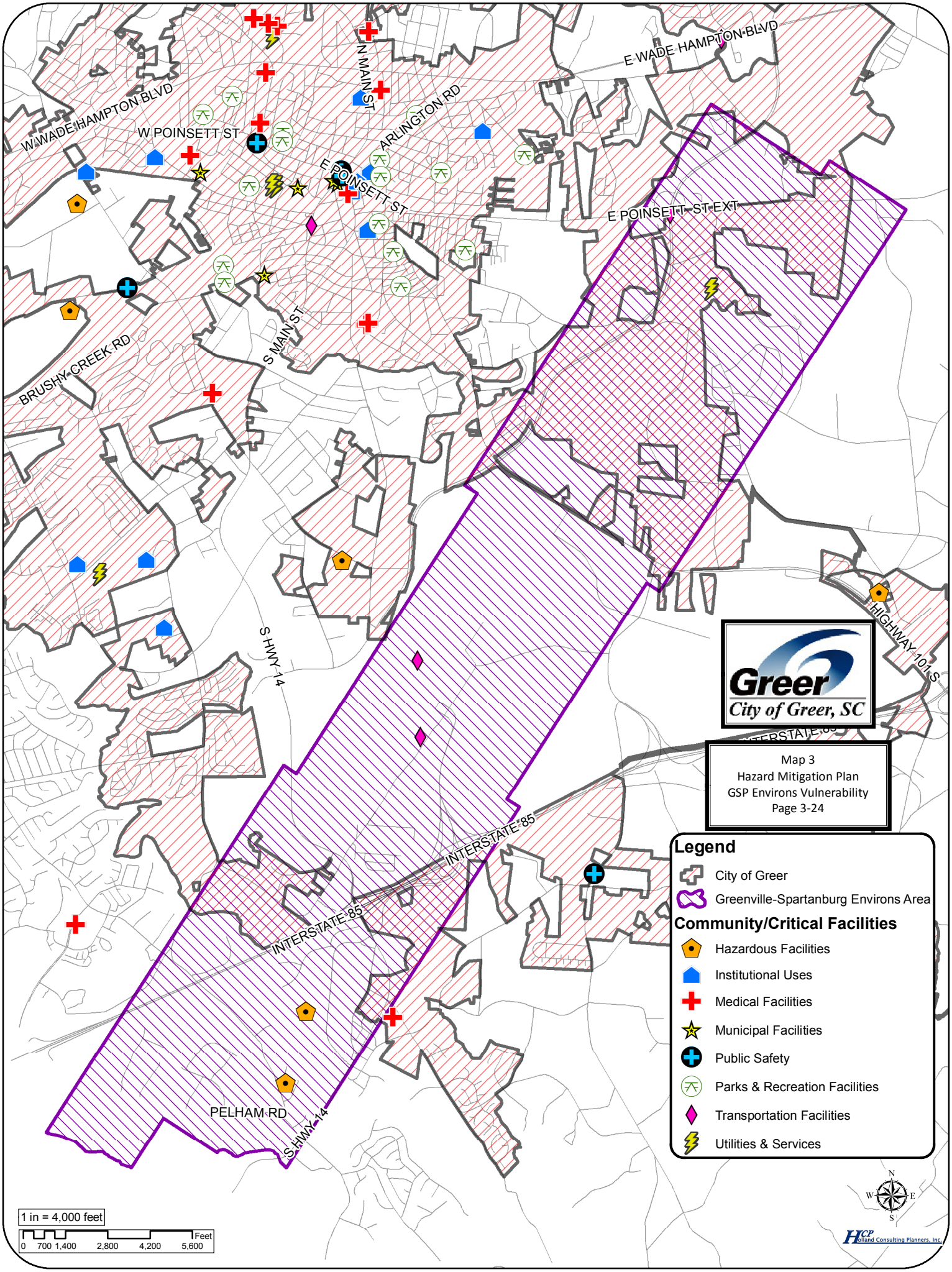
2. Hazardous Materials Sites (Tier II)

The City of Greer has seen a considerable increase in industrial development over the last ten to fifteen years. The most significant development has been the location of the BMW plant within direct proximity to the City of Greer's corporate limits. In fact, the existing corporate limit line completely surrounds the BMW plant site. This increase in industrial development prompted the MAC to address sites that house and utilize hazardous materials on a daily basis.

Facilities covered by the Federal Emergency Planning and Community Right-to-Know Act (EPCRA) must report the characteristics and quantities of chemicals stored on-site as well as emergency contact information by the first day of March every year. This information, known as Tier II reporting, is submitted to the State Emergency Response Commission, the Local Emergency Planning Committee (LEPC), and the fire department with jurisdiction over the facility. Once information is submitted by the facility, it must be reviewed and filed at the state and county levels.

In general, facilities that have Tier II reporting requirements contain materials that can be mildly to extremely (depending on the specific chemical) dangerous if mishandled, spilled, or burned. Such facilities should generally be located away from residential and retail commercial land uses. The MAC, in conjunction with input from the City of Greer Fire Chief, have identified eight manufacturing operations that should be acknowledged within the context of this plan. Decisions relating to development, land use, and zoning within close proximity to these sites should take into account the potential issues that may arise from allowing incompatible uses to evolve within close proximity to one another. The following provides a listing of the manufacturing operations identified as EPA defined toxic facilities. The location of each manufactured site is delineated on Map 6-7 in Appendix 6.

- Mitsubishi
- Honeywell
- Advance Composite
- BMW Manufacturing
- Aiken Chemical Company
- RMAX, Operating LLC
- Safety-Kleen Systems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W WADE HAMPTON BLVD
N MAIN ST
W POINSETT ST
ARLINGTON RD
E POINSETT ST
E POINSETT ST EXT
S MAIN ST
BRUSHY CREEK RD
S HWY 14
INTERSTATE 85
HIGHWAY 101 S
PELHAM RD
Greer
City of Greer, SC
Map 3
Hazard Mitigation Plan
GSP Environs Vulnerability
Page 3-24
Legend
City of Greer
Greenville-Spartanburg Environs Area
Community/Critical Facilities
Hazardous Facilities
Institutional Uses
Medical Facilities
Municipal Facilities
Public Safety
Parks & Recreation Facilities
Transportation Facilities
Utilities & Services
1 in = 4,000 feet
0 700 1,400 2,800 4,200 5,600 Feet
N
W
E
S
HCP Holland Consulting Planners, Inc.

3. "Old Mill House" Area

The "Old Mill House" area has been identified as a man-made hazard due to the location of a deteriorated cotton mill situated in the center of an existing residential neighborhood. The old mill site is located within Spartanburg County, but is surrounded on all sides by incorporated portions of the City of Greer. Demolition of the mill was initiated in 2004, but was halted due to funding. Subsequently, due to a tax issue, Spartanburg County attained ownership of the site. No action has been taken to clear the site since this point. The site poses a significant fire hazard to the surrounding neighborhood.

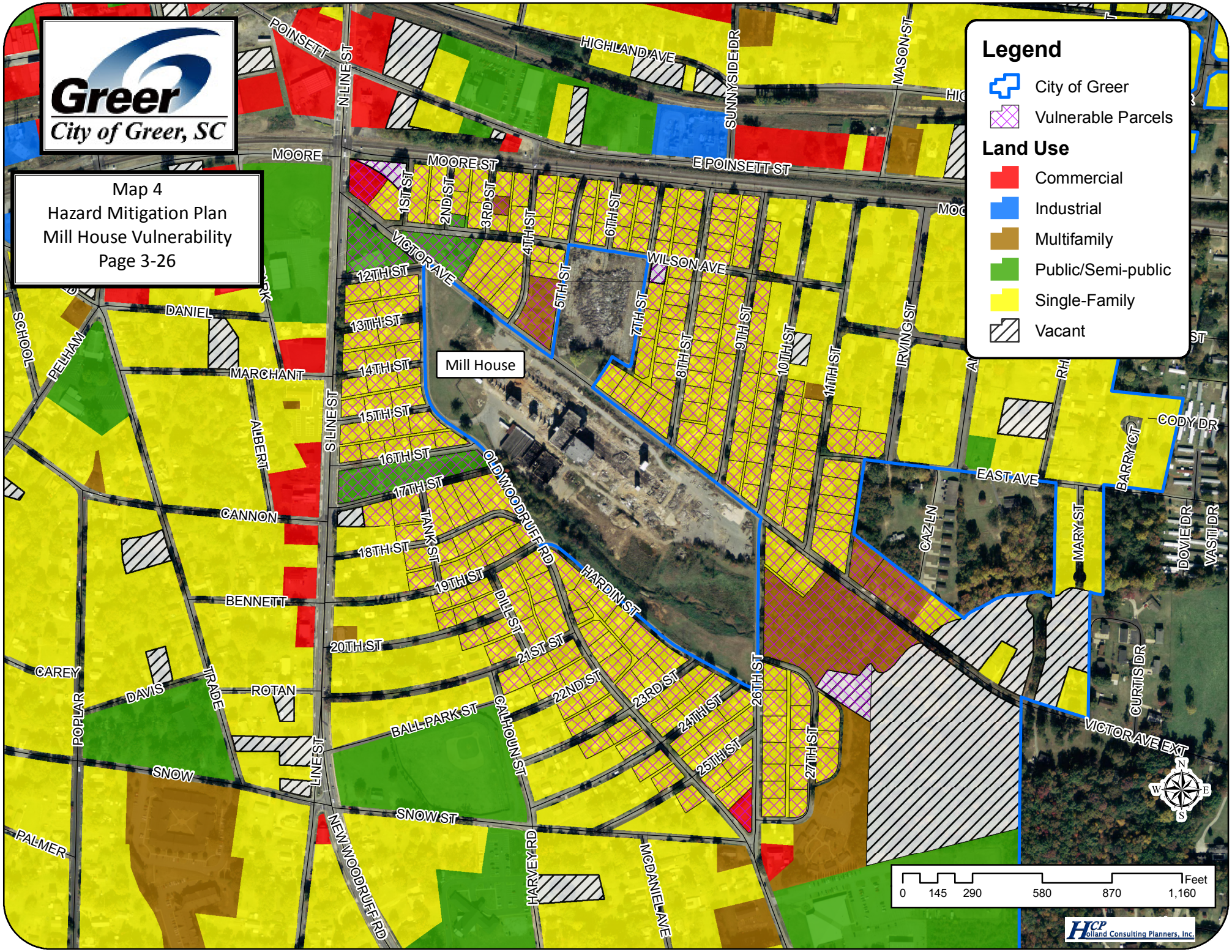
The existing housing within this area is situated so close to the remaining wood stock and debris, that a fire event could be catastrophic. In an effort to assess the severity of the situation within the context of this plan, a five hundred (500) hundred foot buffer has been drawn around the mill house site (see Map 4). Development located within this buffer has been deemed vulnerable to the potential effects of a fire outbreak within the site. Existing vulnerability relating to this area is further defined within the next section of the plan.

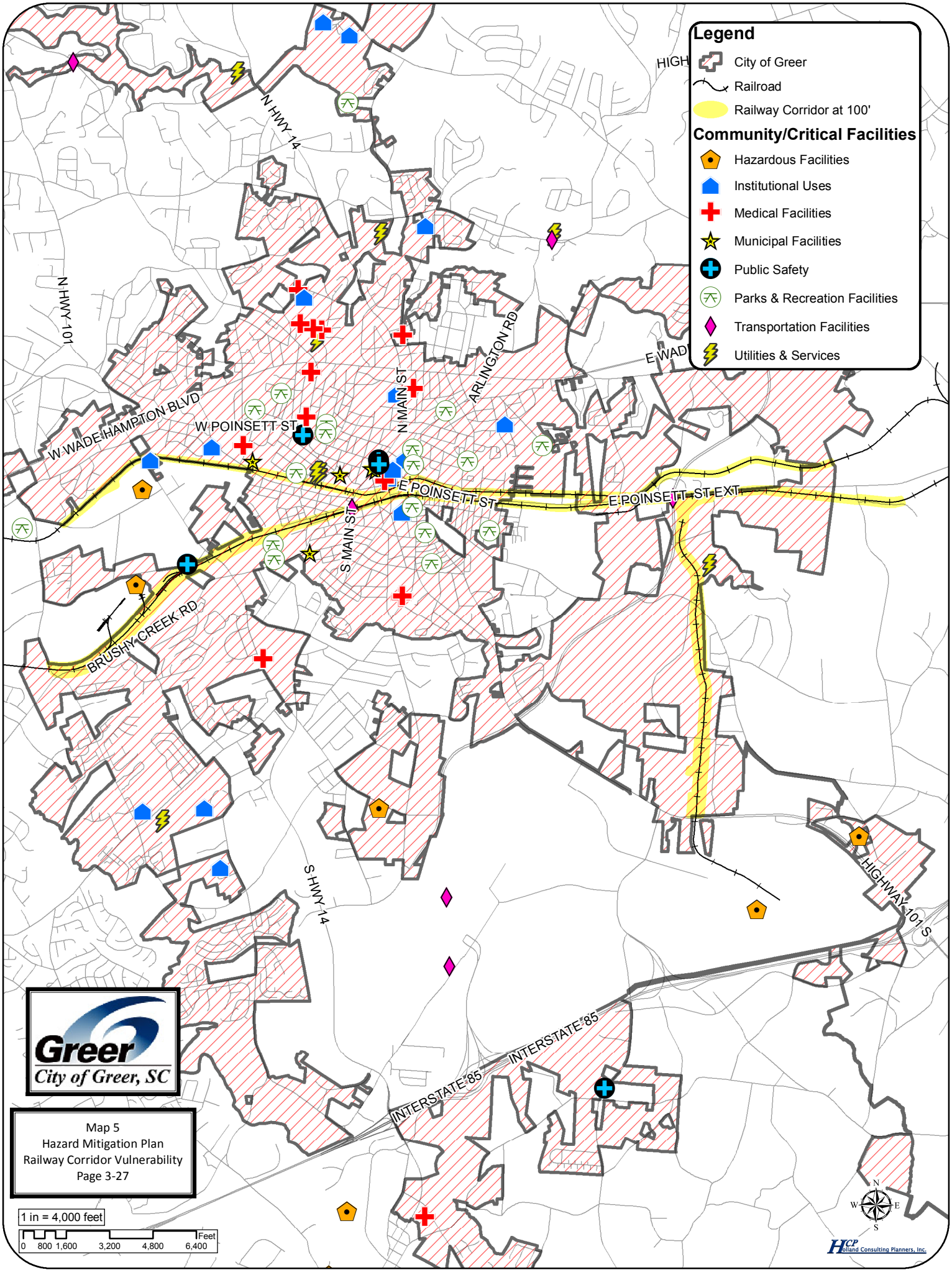
The City will continue to work with Spartanburg County to find a solution or funding source to properly clear the site. Once the site is cleaned up, the cleared property will serve as an asset to the neighborhood as opposed to a threat.

4. Rail Corridor

There are two rail corridors that centrally traverse through the City of Greer corporate limits. The CSX and Norfolk Southern rail lines run directly through Greer's central business district, and fall within close proximity to both residential an d non-residential development. It is difficult to mitigate or protect from the risk associated with existing development in close proximity to these rail corridors; however, the City can take steps to protect future growth. There are many risks associated with development adjacent to rail lines including: structural stability, noise and vibration impacts, and car derailment.

In an effort to identify and address risks associated with this hazard, a 100-foot buffer has been established and measured from the northern and southern edge of both rail corridors. The defined hazard area has been outlined on Map 5.


Greer
City of Greer, SC
Map 4
Hazard Mitigation Plan
Mill House Vulnerability
Page 3-26
Mill House
Legend
City of Greer
Vulnerable Parcels
Land Use
Commercial
Industrial
Multifamily
Public/Semi-public
Single-Family
Vacant
POINSETT
N LINE ST
HIGHLAND AVE
SUNNYSIDE DR
MASON ST
MOORE
MOORE ST
E POINSETT ST
1ST ST
2ND ST
3RD ST
4TH ST
6TH ST
VICTOR AVE
12TH ST
5TH ST
WILSON AVE
7TH ST
8TH ST
9TH ST
10TH ST
11TH ST
IRVING ST
13TH ST
DANIEL
SCHOOL
PELHAM
14TH ST
MARCHANT
15TH ST
S LINE ST
ALBERT
16TH ST
17TH ST
OLD WOODRUFF RD
CODY DR
BARRY CT
EAST AVE
CAZ LN
MARY ST
DOVIE DR
VAST DR
CANNON
TANK ST
18TH ST
19TH ST
HARDIN ST
BENNETT
DILL ST
20TH ST
21ST ST
CAREY
DAVIS
TRADE
ROTAN
22ND ST
23RD ST
26TH ST
CURTIS DR
POPLAR
BALL PARK ST
CALHOUN ST
24TH ST
VICTOR AVE EXT
25TH ST
27TH ST
SNOW
LINE ST
SNOW ST
PALMER
NEW WOODRUFF RD
HARVEY RD
MCDANIEL AVE
N
W
E
S
0 145 290 580 870 1,160 Feet
HCP Holland Consulting Planners, Inc.


Legend
City of Greer
Railroad
Railway Corridor at 100'
Community/Critical Facilities
Hazardous Facilities
Institutional Uses
Medical Facilities
Municipal Facilities
Public Safety
Parks & Recreation Facilities
Transportation Facilities
Utilities & Services
N HWY 14
N HWY 101
W WADE HAMPTON BLVD
W POINSETT ST
N MAIN ST
ARLINGTON RD
E POINSETT ST
E POINSETT ST EXT
S MAIN ST
BRUSHY CREEK RD
S HWY 14
HIGHWAY 101 S
INTERSTATE 85
INTERSTATE 85
Greer
City of Greer, SC
Map 5
Hazard Mitigation Plan
Railway Corridor Vulnerability
Page 3-27
1 in = 4,000 feet
0 800 1,600 3,200 4,800 6,400 Feet
N
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HCP Holland Consulting Planners, Inc.

Section 4. Capability Assessment

This section of the HMP analyzes the City of Greer's capacity to address the threats that natural hazards pose, and identifies those areas in which the City is already undertaking positive hazard mitigation efforts through existing policy and regulatory mechanisms. Additionally, this section outlines the City's organizational ability to carry out the objectives and implementing actions outlined within Section 7 of this plan.

The Capability Assessment section contains the following subsections:

A) Agency/Organizational Review
B) Existing Policies and Program Review
C) Legal Capability Review
D) Fiscal Capability Review
E) Political Acceptability Review

A. Agency/Organizational Review

The purpose of this subsection of the HMP is to list and describe all local government departments, agencies, and organizations that have a direct (or indirect) impact on hazard mitigation and/or hazard control through specific responsibilities in these areas, and to describe these responsibilities.

Area of Responsibility	Description	Contact Person and Telephone
Planning and Zoning, Building Inspections, and Code Enforcement	The City of Greer has an adopted Comprehensive Plan (currently being updated), subdivision ordinance, zoning ordinance, regional airport height control zoning ordinance, and a flood damage prevention ordinance which it administers through its Building and Development Standards Department. The City also has an appointed, seven-member Planning Commission, a seven-member Board of Zoning Appeals, and a seven-member Construction Board of Adjustments and Appeals all operated out of the Building and Development Standards Department. Inspections and permitting (building, plumbing, HVAC) are administered to State standards.	Glenn Pace Greer Planning & Zoning 301 E. Poinsett Street Greer SC, 29651 (864) 801-2009 gpace@cityofgreer.org Phil Rhoads, Director Building & Develop. Standards 301 E. Poinsett Street Greer SC, 29651 (864) 848-2175 prhoads@cityofgreer.org

Area of Responsibility	Description	Contact Person and Telephone
Engineering (includes capital improvement plan)	The City of Greer maintains an engineering department that oversees all capital projects, as well as enforcement and implementation of all stormwater regulations outlined under the NPDES Phase II program. The City has adopted a Capital Improvements Plan which is administered by the engineering department. Projects within the plan are either designed and constructed with staff resources, or contracted out through a formal procurement process.	Don Holloman Greer Engineering 315 Buncombe Street Greer, SC, 29650 (864) 848-2181 dholloman@cityofgreer.org
Water, Sewer, Electric & Gas	Water, sewer, electric and gas services are all provided through the Greer Commission of Public Works.	Randy Olson Greer CPW 301 McCall Street Greer SC, 29650 (864) 968-5500
Fire	The City of Greer Fire Department is currently staffed with a total of 38 full-time, 16 volunteers, 12 explorers. The department maintains three stations within the City. Currently, fire protection is adequate to meet demand and there are no plans in the immediate future to add new departments or personnel. Equipment acquisition is handled on an as-needed basis.	Chief Chris Harvey Greer Fire Department 103 Poinsett Street Greer SC, 29650 (864) 848-2165 charvey@cityofgreer.org
Roads/Streets	Streets within the City of Greer are maintained by the public services department.	John Burns Greer Public Services City Operations Center 446 Pennsylvania Avenue Greer, SC 29650 (864) 848-2184 jburns@cityofgreer.org
Stormwater Management / Drainage Maintenance	Greer supports/enforces state and federal regulations relating to stormwater runoff resulting from development. This includes the implementation and enforcement of the City's National Pollutant Discharge and Elimination System (NPDES) Phase II stormwater management program. This program is carried out by both the engineering and public services departments.	Lillian Hanley Greer Engineering 315 Buncombe Street Greer, SC, 29650 (864) 848-2181 lhanley@cityofgreer.org
Parks, Greenways, Open Space	The City of Greer Parks and Recreation Department is staffed with a full-time director, and comprehensive staff that oversees program development and facility maintenance. The City owns and operates 12 primary facilities that provide a wide range of indoor and outdoor recreation opportunities.	Ann Cunningham Greer Parks and Recreation City Operations Center 446 Pennsylvania Avenue Greer, SC 29650 (864) 848-2190 acunningham@cityofgreer.org

Area of Responsibility	Description	Contact Person and Telephone
Police Services	The City of Greer maintains a full service municipal police department. The department provides a wide range of services to the community.	Chief Dan Reynolds Greer Police Department 102 South Main Street Greer SC, 29650 (864) 848-2187 dreynolds@cityofgreer.org

B. Existing Policies and Program Review

The purpose of this subsection of the HMP is to describe the policies, programs, ordinances, and practices that the City of Greer has in place that affect hazard control and/or hazard mitigation. The City of Greer utilizes the following documents to guide growth, development, and infrastructure investment. When making amendments to or recommendations regarding these policy documents, the recommendations and findings presented in this plan will be taken into consideration.

1. Flood Damage and Prevention Ordinance

The City is a participant in the National Flood Insurance Program (NFIP). Each community that participates in the NFIP must adopt a flood damage prevention ordinance. In general, this ordinance requires the following provisions in all areas of special flood hazard (100-year floodplain) identified by the Federal Emergency Management Agency in its Flood Insurance Rate Map (FIRM):

- All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure;
- All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damages;
- All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damages;
- Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;

- All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

- New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;

- On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding; and,

- Any alteration, repair, reconstruction, or improvements to a structure which is in compliance with the provisions of this ordinance, shall meet the requirements of "new construction" as contained in this ordinance.

In areas designated as floodways, no encroachments, including fill, new construction, substantial improvements, and other developments shall be permitted unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood.

Implementation responsibility is through the City Planning Department as a condition of a zoning permit.

New FIRMs are currently being developed by the South Carolina Floodplain Mapping Program and the Federal Emergency Management Agency. At this point, it is unclear when the City of Greer will receive new maps for review. The mapping is conducted by county; therefore, the City of Greer will be involved in both the Greenville and Spartanburg County remapping initiatives.

2. South Carolina State Building Code

The SC State Building Codes regulate for fire resistance, in addition to seismic, flooding, and high wind resilience. These codes are reviewed annually and amended as new requirements and materials are introduced. Building codes apply primarily to new construction or buildings undergoing substantial alteration.

Enforcement at the local level is provided by the City of Greer Building Standards Department and similar departments, and extends beyond construction inspections to the advance review of plans. An applicant for a building permit must submit plans for approval. The Building Standards Department reviews the plans and elects to approve or reject them or to require revisions. Construction cannot begin until local officials confirm that the plans are prepared in accordance with the code.

A building inspector must then visually monitor the construction of the building. The inspector's duty is to make sure that the project follows the plans as approved. Inspectors are empowered to stop work on projects that fail to conform to the plans. Any observed errors must be fixed before work can continue. The inspector must perform a final review before an occupancy permit is issued.

3. Zoning Ordinance

Zoning is the traditional and nearly ubiquitous tool available to local governments to control the use of land. Broad enabling authority for municipalities in South Carolina to engage in zoning is granted in S.C. Code of Laws § 6-29-.720. The statutory purpose for the grant of power is to promote health, safety, morals, or the general welfare of the community. Land "uses" controlled by zoning include the type of use (e.g., residential, commercial, industrial) as well as minimum specifications for use such as lot size, building height and setbacks, density of population, and the like. The local government is authorized to divide its territorial jurisdiction into districts, and to regulate and restrict the erection, construction, reconstruction, alteration, repair or use of buildings, structures, or land within those districts. Districts may include general use districts, overlay districts, and special use districts or conditional use districts. Zoning ordinances consist of maps and written text.

The following provides a summary of zoning districts outlined within the City of Greer Zoning Ordinance (see Map 6).

- **R-S** Residential Suburban District
- **R-20** Single-Family Residential District
- **R-12** Single-Family Residential District
- **R-10** Single-Family Residential District
- **R-7.5** Single-Family Residential District
- **R-5** Single-Family Residential District
- **R-M1 and R-M2** Multiple-Family Residential District
- **O-D** Office District

- **C-1** Central Business District
- **C-2** Commercial District
- **C-3** Highway Commercial District
- **PD** Planned Development District
- **S-1** Service District
- **I-1** Industrial District
- **FP** Flood Protective Area
- **GIBC** Gateway International Business Center

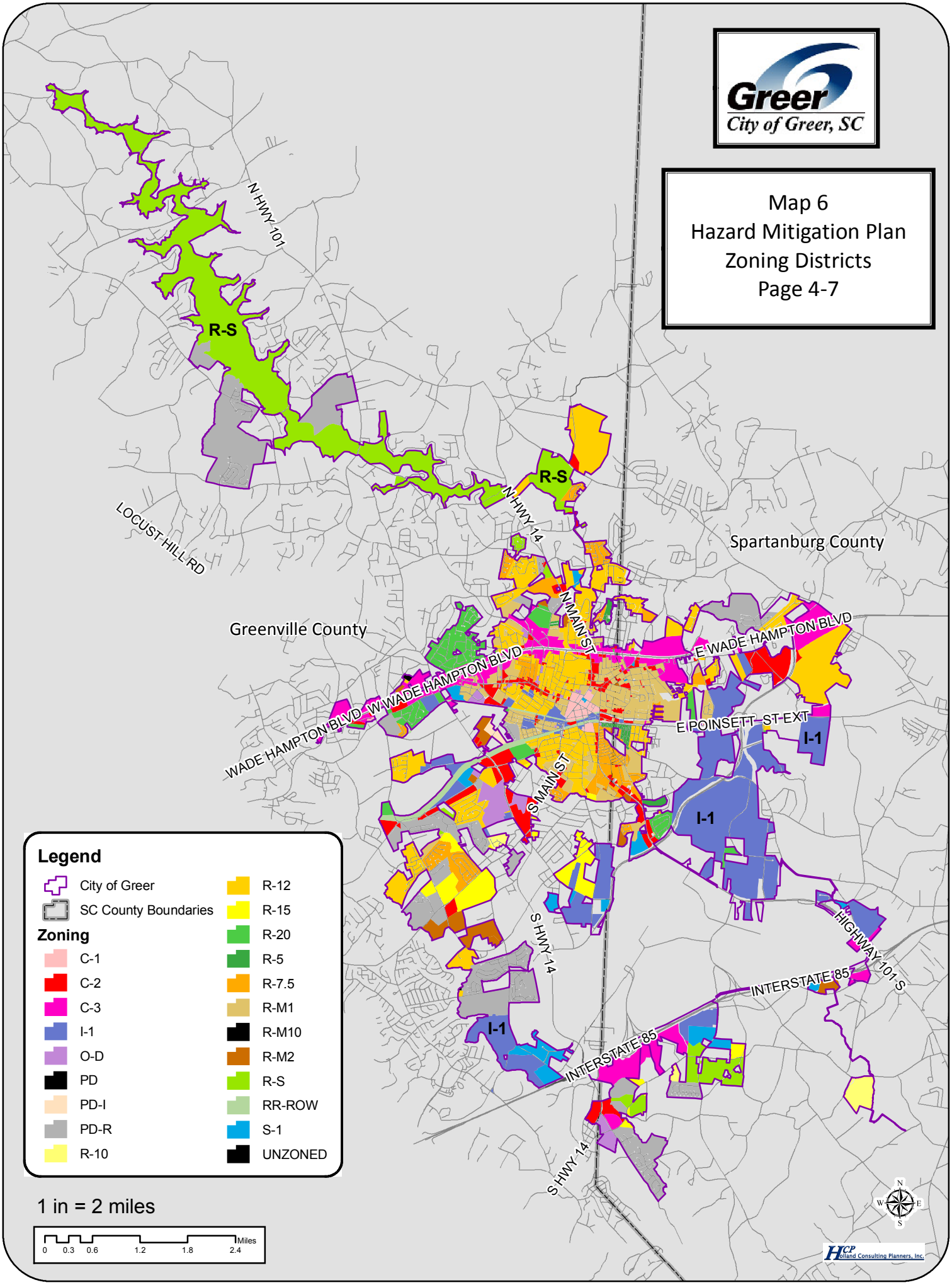
4. Capital Improvements Plan

A capital improvements program is a planned schedule of capital expenditures for physical improvements within a local government's jurisdiction, usually over a five-year period, listed according to priority. The City of Greer maintains a capital improvements plan that is overseen by the City Council and Administrator. Implementation of the programs is addressed through the City's annual budget ordinance.

5. Comprehensive Plan

The State of South Carolina requires all jurisdictions to maintain a land use planning mechanism that outlines a given locality's plans and policies relating to growth and development. State laws outline the minimum requirements that must be addressed within these documents as follows:

- Required Planning Process:
  - Inventory of existing conditions
  - Statement of goals and needs
  - Implementation strategies with time frames
- Required Planning Elements:
  - Population
  - Economic Development
  - Natural Resources
  - Cultural Resources – historic/housing districts
  - Community Facility
  - Housing
  - Land Use
  - Transportation
  - Priority Investment


Greer
City of Greer, SC
Map 6
Hazard Mitigation Plan
Zoning Districts
Page 4-7
N HWY 101
R-S
R-S
N HWY 14
LOCUST HILL RD
Spartanburg County
Greenville County
N MAIN ST
E WADE HAMPTON BLVD
W WADE HAMPTON BLVD
WADE HAMPTON BLVD
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I-1
S MAIN ST
I-1
S HWY 14
HIGHWAY 101 S
INTERSTATE 85
I-1
INTERSTATE 85
S HWY 14
Legend
City of Greer
SC County Boundaries
Zoning
C-1
C-2
C-3
I-1
O-D
PD
PD-I
PD-R
R-10
R-12
R-15
R-20
R-5
R-7.5
R-M1
R-M10
R-M2
R-S
RR-ROW
S-1
UNZONED
1 in = 2 miles
0 0.3 0.6 1.2 1.8 2.4 Miles
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E
S
HCP Holland Consulting Planners, Inc.

South Carolina requires that land use plans be reviewed and updated every five years. The City is currently in the process of updating the Greer Comprehensive Plan. This undertaking will enable the City to acknowledge the goals outlined through the Hazard Mitigation Plan within the comprehensive plan process.

6. Community Rating System

The National Flood Insurance Program's (NFIP) Community Rating System (CRS) was implemented in 1990 as a program for recognizing and encouraging community floodplain management activities that exceed the minimum NFIP standards. The National Flood Insurance Reform Act of 1994 codified the Community Rating System in the NFIP. Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance.

There are now 994 communities receiving flood insurance premium discounts based on their implementation of local mitigation, outreach, and educational activities that go well beyond minimum NFIP requirements. While premium discounts are one of the benefits of participation in CRS, it is more important that these communities are carrying out activities that save lives and reduce property damage. These 994 communities represent a significant portion of the nation's flood risk as evidenced by the fact that over 66% of the NFIP's policy base is located in these communities. Communities receiving premium discounts through the CRS cover a full range of sizes from small to large, and a broad mixture of flood risks including coastal and riverine.

The City of Greer is not currently a participant in the CRS program.

7. Water and Sewer Policies

The Greer Commission of Public Works aggressively pursues the policy that central water service should be provided to all areas of the city as demand arises. Greer CPW provides wastewater services to more than 7,650 customers, water service to more than 12,500 customers, electric service to more than 11,000 customers, and gas service to more than 11,400 customers. The commission is one of 21 municipally-owned and -operated utilities in the State of South Carolina. It is governed by three elected Commissioners and managed by an appointed General Manager.

8. Stormwater Management

The Environmental Protection Agency (EPA) has begun implementation of Phase II of the Stormwater Management Plan. These policies apply to municipalities with populations greater than 10,000 and with densities of 1,000 per square mile. For municipalities that meet these parameters, submittal of a stormwater management plan is required. Phase II regulations also apply to entities designated under the 1990 census as a Small MS4 (Small Municipal Separate Storm Sewer System). MS4s are defined as a publicly-owned conveyance or system of conveyances designed or used for collecting and conveying stormwater. MS4's are not combined with sewer and are not part of a publicly-owned treatment facility. Municipally-owned MS4's can include counties, town, airports, federal properties, hospitals, schools, etc. Small community MS4's are regulated if they discharge into impaired or sensitive US waters. Based on the 1990 Census, the City of Greer is required to meet the EPA Phase II Stormwater Management Program regulations.

Effective management of stormwater runoff offers a multitude of possible benefits that include: protection of wetlands and aquatic eco-systems, improved quality of receding water bodies, conservation of water resources, protection of public health through flood control, and improved operation and hydraulic characteristics of streams receiving run-off; all of which can cause higher peak flow rates that increase frequency and duration of bank full and sub-bank full flows. Increased occurrences in downstream flooding can also be reduced by lowering base flood levels, such as with traditional flood control methods that rely on the detention of the peak flows. They are generally not targeted to the reduction of flooding and in many cases have exacerbated the problems associated with changes in hydrology and hydraulics.

The EPA has developed guidelines for implementing the Phase II Stormwater Management Program. The guidelines outline six (6) steps for development of Best Management Practices for a stormwater management plan. Those six steps are as follows:

- Public Education and Outreach on Stormwater Impacts
- Public Involvement and Participation
- Elicit Discharge Detection and Elimination
- Construction Site and Stormwater Runoff Control
- Post-Construction Stormwater Management and New Development or Redevelopment
- Pollution Prevention and Good Housekeeping for Municipal Operations

The City of Greer maintains a stormwater department and is currently in the process of implementing the City's stormwater program.

C. Legal Capability Review

As a general rule, local governments have only that legal authority which is not expressly prohibited to them by their home state. This principle, that all power is vested in the State and can only be exercised to the extent it is delegated, is known as "Home Rule" and applies to all South Carolina political subdivisions. The following provides an overview of characteristics associated with home rule:

- Home rule is the exercise of independent authority by elected local governments. However, no local government is completely independent of its state.

- The United States Constitution does not mention local governments. Each state decides for itself what kinds of local governments to allow and what powers they may exercise. Some states include the definition of home rule in their constitutions and define the forms it may take in legislation. Home rule in other states is defined simply by statute.

- States reserve certain powers, especially those they think should be uniform statewide.

Any mitigation measures that are undertaken by the local government in its regulatory capacity must be worded and enforced carefully within the parameters established by the state and federal constitutions, even when such measures are authorized by the General Statutes of South Carolina, and even when such measures are enacted in order to protect public health and safety by protecting the community from the impacts of natural hazards.

Within the limits of home rule and the federal and state constitutions, local governments in South Carolina have a wide latitude within which to institute mitigation programs, policies, and actions. All local government powers fall into one of four basic groups (although some governmental activities may be classified as more than one type of power): regulation, acquisition, taxation, and spending. Hazard mitigation measures can be carried out under each of the four types of powers. Following is a list of these powers and how they may be useful tools for hazard mitigation:

1. Regulation

a. General Police Power

Local governments in South Carolina may exercise regulatory powers in their jurisdictions. South Carolina General Statutes allow for exercise of the general police power on local governments, allowing them to enact and enforce ordinances which define, prohibit, regulate, or abate acts, omissions, or conditions detrimental to the health, safety, and welfare of the people, and to define and abate nuisances (including public health nuisances). Since hazard mitigation can be included under the police power (as protection of public health, safety, and welfare), towns, cities, and counties may include requirements for hazard mitigation in local ordinances. Local governments may also use their ordinance-making power to abate "nuisances," which could include, by local definition, any activity or condition making people or property more vulnerable to any hazard.

b. Building Codes and Building Inspections

Many structural mitigation measures involve constructing and retrofitting homes, businesses, and other structures according to standards designed to make the buildings more resilient to the impacts of natural hazards. Many of these standards are imposed through the building code. South Carolina has a state compulsory building code which applies throughout the state. However, municipalities and counties may adopt codes for the respective areas if approved by the state as providing "adequate minimum standards." However, local regulations cannot be less restrictive than the state code.

Local governments in North Carolina are also empowered to carry out building inspection. Cities have the responsibility to create an inspection department and enumerate its duties and responsibilities, which include enforcing state and local laws relating to the construction of buildings; installation of plumbing, electrical, heating systems, etc.; building maintenance; and other matters.

c. Land Use

Regulatory powers afforded local governments are the most basic manner in which a local government can control the use of land within its jurisdiction. Through various land use regulatory powers, a local government can control the amount, timing, density, quality, and location of new development; all these characteristics of growth can determine the

level of vulnerability of the community in the event of a natural hazard. Land use regulatory powers include the power to engage in planning, and to enact and enforce zoning ordinances and floodplain ordinances.

Zoning: See Section 4(B)(3) above.

Floodway Regulation: Flood zone regulations state that the channel and a portion of the floodplain of all the state's streams will be designated as a floodway, either by the local government or by the state. The legislatively declared purpose of designating these areas as a floodway is to help control and minimize the extent of floods by preventing obstructions which inhibit water flow and increase flood height and damage and other losses (both public and private) in flood hazard areas, and to promote the public health, safety, and welfare of citizens of South Carolina in flood hazard areas.

To carry out this purpose, local governments are empowered to grant permits for the use of the floodways, including the placement of any artificial obstruction in the floodway. No permit is required for certain uses, including agricultural, wildlife and related uses; ground level uses such as parking areas, rotary aircraft ports, lawns, gardens, golf courses, tennis courts, parks, open space; and similar private and public recreational uses. Existing artificial obstructions in the floodway may not be enlarged or replaced without a permit; local governments are empowered to acquire existing obstructions by purchase, exchange, or condemnation if necessary to avoid flood damages.

The procedures that are laid out for issuing permits for floodway use require the local government to consider the dangerous effects a proposed artificial obstruction may create by causing water to be backed up or diverted; or the danger that the obstruction will be swept downstream to the injury of others; and by the injury or damage that may occur at the site of the obstruction itself. Local governments are to take into account anticipated development in the foreseeable future which may be adversely affected by the obstruction, as well as existing development.

Planning: In order to exercise the regulatory powers allowed through state law, local governments in North Carolina are required to create or designate a planning agency. The planning agency may perform a number of duties, including: make studies of the area; determine objectives; prepare and adopt plans for achieving those objectives; develop and recommend policies, ordinances, and administrative means to implement plans; and perform other related duties.

2. Acquisition

The power of acquisition can be a useful tool for pursuing mitigation goals. Local governments may find the most effective method for completely "hazard-proofing" a particular piece of property or area is to acquire the property (either in fee or a lesser interest, such as an easement), thus removing the property from the private market and eliminating or reducing the possibility of inappropriate development occurring. South Carolina legislation enables cities, towns, and counties to acquire property for public purpose by gift, grant, devise, bequest, exchange, purchase, lease, or eminent domain.

3. Taxation

Taxation is yet another power afforded to local governments by South Carolina law which can be used as a hazard mitigation tool. The power of taxation extends beyond merely the collection of revenue. Many communities set preferential tax rates for areas which are unsuitable for development (e.g., agricultural land, wetlands) and can be used to discourage development in hazardous areas.

Local units of government also have the authority to levy special assessments on property owners for all or part of the costs of acquiring, constructing, reconstructing, extending, or otherwise building or improving beach erosion control or flood and hurricane protection works within a designated area. This practice can serve to increase the cost of building in such areas, thereby discouraging development.

Because the usual methods of apportionment seem mechanical and arbitrary, and because the tax burden on a particular piece of property is often quite large, the major constraint in using special assessments is political. Special assessments seem to offer little in terms of control over land use in developing areas. They can, however, be used to finance the provision of services a city deems necessary within its boundaries. In addition, special assessments are useful in distributing to the new property owners the costs of the infrastructure required by new development.

4. Spending

The fourth major power that is provided for local governments through South Carolina law is the power to make expenditures in the public interest. Hazard mitigation principles

should be made a routine part of all spending decisions made by the local government, including annual budgets and capital improvement plans.

A capital program is usually a timetable by which a city indicates the timing and level of municipal services it intends to provide over a specified duration. Capital programming, by itself, can be used as a growth management technique or hazard mitigation tool. By tentatively committing itself to a timetable for the provision of capital to extend municipal services, a community can control its growth to some extent.

In addition to formulating a timetable for the provision of services, a local community can regulate the extension of and access to municipal/utility services. In the City of Greer this issue is controlled through the Greer Commission of Public Works.

A capital improvement program (CIP) that is coordinated with extension and access policies can provide a significant degree of control over the location and timing of growth. These tools can also influence the cost of growth if the CIP is effective in directing growth away from environmentally sensitive or high hazard areas.

D. Fiscal Capability Review

There are many diverse sources of funding available to communities to implement local hazard mitigation plans, including both government and private programs. Often an organization with a particular focus will fund only part of a project. However, with coordination, the community can combine the funding efforts of one program with those of another, thereby serving multiple missions. The grant and loan programs described in the following pages of this plan are a significant, although certainly not a sole, source of funding options.

While federal and national programs carry out the bulk of disaster relief programs providing funds for mitigation, local governments are encouraged to open the search field as wide as possible, and include alternative funding sources to supplement the local hazard mitigation budget. For instance, local businesses and organizations will frequently support projects that benefit their customers or employees, or which constitute good "PR." Other groups or individuals may be willing to donate "in-kind" services, eliminating the need for cash. Often the in-kind and volunteer services of local community members can be counted toward the local share that is typically needed to match an outside source of funds.

Local governments may also engage in their own "fund-raising" efforts to pay for mitigation programs that benefit the community at large. The State of South Carolina has conferred upon cities, towns, and counties the power to levy property taxes for various purposes, including: ambulance services, rescue squads, and other emergency medical services; natural disasters (flood protection); civil defense; drainage projects or programs; fire protection; hospitals; joint undertakings with other county, city, or political subdivisions; planning; sewage; solid waste; water; water resources; and watershed improvement projects. Thus, local governments are empowered to finance certain emergency management activities, including mitigation activities, with property taxes.

The following is a list and description of several funding sources which should be considered throughout the implementation of this plan for hazard mitigation, redevelopment, and post-disaster recovery:

- **Staff Resources** – Where possible the implementing actions outlined in Section 6 will be carried out by City staff through coordination with City, County, and regional agencies. Implementation of this plan through staff efforts will minimize the cost, and will serve to leverage funding required for action items needing financial backing.

- **General Funding** – If deemed necessary, several of the action items listed will require expenditures through the City's general fund. Some of these expenses may come from departmental budgets or may be appropriated through the annual City Budget Ordinance.

- **Enterprise Funding** – This funding source refers to revenue generated through the City of Greer Commission of Public Works annual budget. The City will need to work closely with CPW to address projects that may require expenditures through CPW.

- **Federal Funding** – There are many federally-sponsored grant programs that may assist the City in implementing actions recommended through this plan. A comprehensive list of potential federal funding sources has been provided in Appendix 5 of this plan.

E. Political Acceptability Review

This subsection of the plan is intended to address the City's "political willpower" to address hazards threats in a proactive manner. This "political willpower" is a significant component of a community's capability to implement hazard mitigation. It is, however, a very difficult factor to assess and evaluate as it is constantly changing based on the turnover in elected officials and the (perceived and actual) frequency and severity of natural hazard events.

The following principles of political acceptability are applicable to the implementation of this plan, including all implementing actions outlined in Section 6:

- Independent of existing regulations that directly address hazard mitigation (e.g., floodplain management ordinance), hazard mitigation is not a goal that should be addressed *independent of* other goals and objectives of the City, due to limited local government resources; and

- Hazard mitigation should be considered and incorporated into policies, procedures and programs which affect land use and development, such as siting of roadways, siting and building of public facilities, zoning ordinances, and extension of infrastructure necessary for growth; and

- Local revenues are insufficient to support hazard mitigation projects for mitigation of existing hazards at the local level; however, Federal and State grant funds for priority hazard mitigation projects should be pursued when available.

- One of local government's primary roles in implementing hazard mitigation is educating the public about the risks of natural hazards and how to reduce these risks and/or the costs of these risks.

Section 5. Vulnerability Assessment

A. Introduction

This section of the HMP identifies specific locations and facilities vulnerable to natural and man-made hazards with narrative, data and maps. This section will identify the existing and potential threat posed by each hazard outlined within the previous sections of the plan. Many of the hazards listed pose a direct threat to a defined geographic area, while others are considered to impact the City's entire corporate limits. Where possible, maps have been provided to further clarify the impact area of a respective hazard type. Earthquakes and dam failure have not been referenced within this sections because (1) the City of Greer has no history of these events taking place; and (2) it is very difficult to estimate and/or quantify the existing and/or potential threat that these hazards pose.

B. Hazards Impacting the City Overall

Several of the hazards outlined within Section 3 result in impacts that are not geographically targeted at a specific area or portion of the City. These following hazards typically impact the region, and, in turn, affect the City of Greer: severe winter weather/ice storms, severe weather/thunderstorms, hail, lightning, wildfires, and tornadoes. These weather events may have adverse impacts on a very specific or very broad portion of the City. Thus, assessment of vulnerability takes into account the City's entire corporate limits. Refer to Map 7, Existing Land Use for an overview of the planning area impacted by these hazards.

In order to assess existing and future vulnerability, an analysis of existing land use and zoning regulations was performed. The City of Greer Planning Department has recently completed an existing land use survey in conjunction with development of a Comprehensive Plan. This data provides a detailed snapshot of what is currently developed throughout the city on a parcel-by-parcel basis. Collection of this information was accomplished through a combination of geographic information systems (GIS) analysis and field observations.

In order to make an assessment of future vulnerability potential, all property deemed vacant through the existing land use survey was identified. Each parcel was then cross-referenced with its applicable zoning district. This analysis provides an idea of how much vulnerability exists if these areas are built out under current development regulations. For the purposes of this plan, the City's zoning districts have been classified into four independent categories: commercial, industrial, offices & services, and residential. The following outlines a key to which zoning

districts fall under each land use designation. Zoning districts are discussed further within Section 5 of the plan. These districts are also defined in Article 3 of the City of Greer Zoning Ordinance.

- **Commercial** – C-1, C-2, C-3
- **Industrial** – PD-I, I-1
- **Offices & Services** – O-D, S-1
- **Residential** – R-S, R-20, R-12, R-10, R-7.5, R-5, R-M1, R-M2, PD

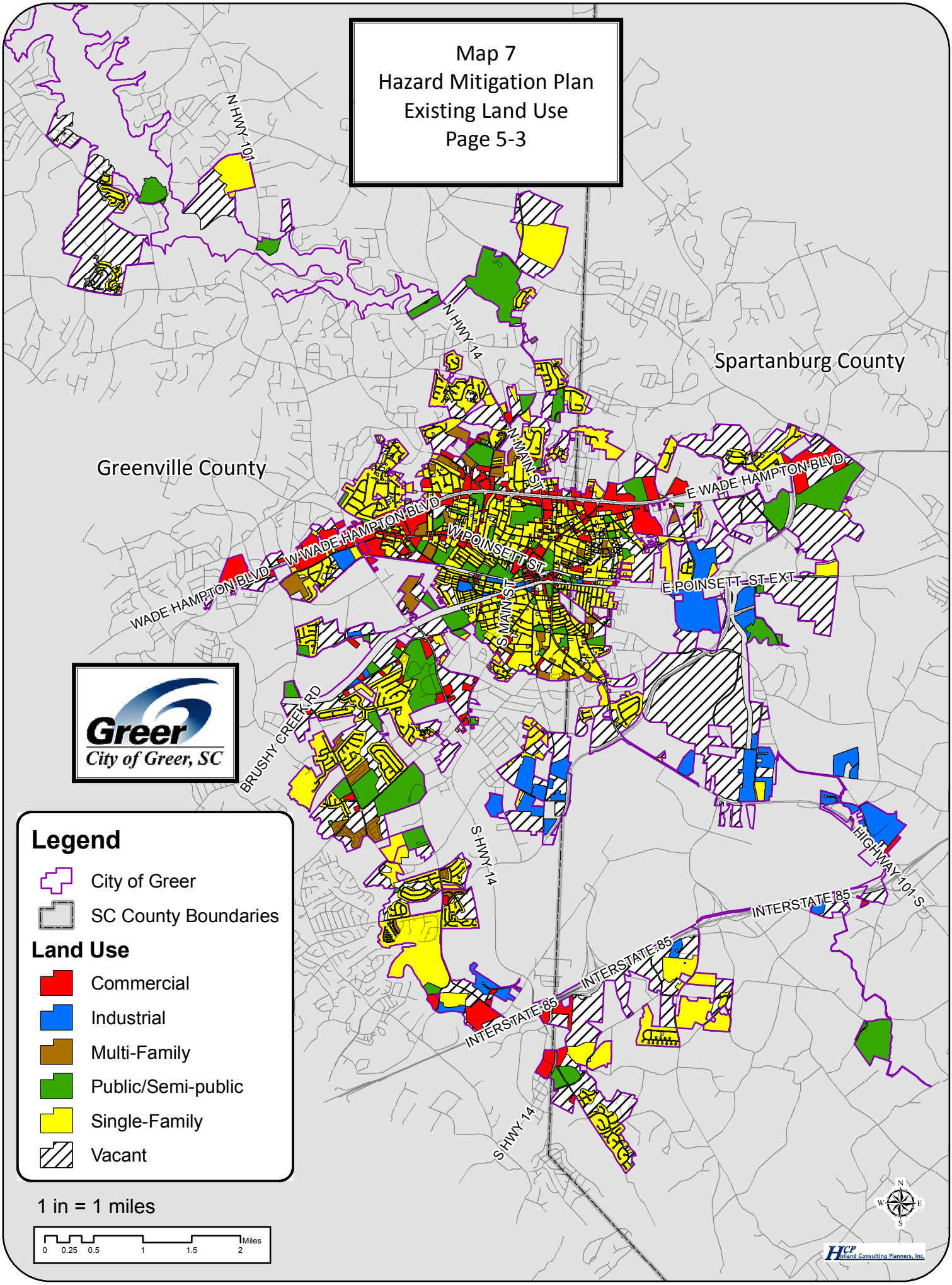
1. Existing Vulnerability

As discussed, Table 12 provides the data associated with property deemed to be vulnerable to wildfire, earthquakes, severe winter weather/ice storms, severe weather/ thunderstorms, hail, lightning, and tornadoes. Based on the unpredictable nature of these weather events, it was determined that the City of Greer's entire corporate limit area is susceptible to the impact of these events. The following table provides an overview of existing land use for the City of Greer. Acreage and property counts are provided, as well as the value of structures and land that fall within Greer's corporate limits.

Table 13. City of Greer Existing Land Use

Land Use	# of Properties	Acres	% of Total	Bldg. Value	Tax Value
Commercial	725	934	15.1%	$193,349,324	$294,453,857
Industrial	94	590	9.6%	$33,673,101	$46,877,267
Multi-Family	1,195	315	5.1%	$121,912,418	$150,446,717
Public/Semi-Public	232	1,132	18.3%	$15,559,305	$40,080,303
Single-Family	7,781	3,208	51.9%	$691,030,413	$841,135,702
Total	10,027	6,179	100.0%	$1,055,524,561	$1,372,993,846

Source: City of Greer, Greenville County, and Spartanburg County.


Map 7
Hazard Mitigation Plan
Existing Land Use
Page 5-3
Greenville County
Spartanburg County
N HWY 101
N HWY 14
N MAIN ST
E WADE HAMPTON BLVD
W WADE HAMPTON BLVD
WADE HAMPTON BLVD
W POINSETT ST
E POINSETT ST EXT
S MAIN ST
BRUSHY CREEK RD
S HWY 14
HIGHWAY 101 S
INTERSTATE 85
INTERSTATE 85
INTERSTATE 85
S HWY 14
Greer
City of Greer, SC
Legend
City of Greer
SC County Boundaries
Land Use
Commercial
Industrial
Multi-Family
Public/Semi-public
Single-Family
Vacant
1 in = 1 miles
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2. Future Vulnerability

Table 14 summarizes all vacant land currently within the City of Greer by zoning district. This analysis was performed in an effort to determine the hazard potential if development under current regulations is fully realized. In order to estimate the future value of structures and property within portions of the City that are currently vacant, an estimate of total potential investment (property and structures) was calculated. This figure was derived by utilizing an average per acre value for each use based on existing conditions. Current tax values in relation to total existing development stock by land use yielded the following average figures:

- **Commercial/Office Uses** – $315,252
- **Industrial Uses** – $79,422
- **Residential Uses (single- and multi-family)** – $512,213

Also, refer to Table 13. These figures serve as approximate value per acre based upon existing tax values provided through the Greenville and Spartanburg County Tax Departments. They are not intended to reflect current market conditions or specific value in relation to property within the City of Greer.

Table 14. City of Greer Vacant Land by Zoning District

Use	Acres	% of Total	Total Potential Developed Value
Commercial/Office	788	18.4%	$248,490,737
Industrial	1,162	27.1%	$92,288,364
Residential	2,331	54.5%	$1,193,968,503
Total	4,281	100.0%	$1,534,747,604

Source: City of Greer, Greenville County, and Spartanburg County.

3. Estimated Impact On Residential Development

The hazard mitigation planning guidelines also require jurisdictions to estimate the number of structures that may be impacted in the future based on current development guidelines and patterns. In order to meet this requirement, additional residential units have been calculated based on the City's existing housing stock. As noted earlier in the plan, as of 2007, the City of Greer had approximately 10,303 residential units.

Based on the total acreage for residential use derived through the existing land use survey (3,523 acres), this results in an average of 2.9 units per acre. This figure was then multiplied times the total vacant acreage falling within a residential zoning classification (2,331 acres). The results of this analysis estimate that within the City of Greer, 6,760 additional housing units are anticipated through build-out. This estimate assumes that current development regulations will remain consistent, and that the corporate limits of the City will not be extended. Based on an average household size of 2.47, as reported in the 2000 US Census, this development will result in an estimated population increase of 16,697 persons. It should be noted that these figures assume build-out of the City's existing corporate limits. No estimate of how long this will take has been factored into the analysis.

An estimate of commercial or industrial use development has not been conducted within the context of this plan. It is difficult to formulate a justifiable projection due the many factors that impact growth and expansion of these uses.

C. Flooding

As discussed in Section 3, riverine flooding is not substantial problem within the City of Greer. Historically, very little development has taken place within the flood prone portions of the City. However, there are several floodplains that traverse the City's jurisdiction, which may pose a threat to existing and future development.

Map 8 graphically depicts the extent of the high risk flooding areas within the City as defined by the Greenville and Spartanburg County Flood Insurance Rate Maps (FIRMs) developed by the Federal Emergency Management Agency (FEMA). FEMA defines areas within "flood zones," based on varying levels of risk of flooding in each area (see definitions below). Properties in zones "A" and "AE" are considered to be high-risk flood zones, as there is a 1% or greater chance of flooding each year. Properties in zone "X-500" have an approximately .02 or 1 in 500 chance of flooding each year.

- **Zone A** is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations (BFEs) or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

- **Zone AE** is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In most instances, Base Flood Elevations (BFEs) derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

- **Zone X** is the flood insurance rate zone that corresponds to areas outside the 100-year floodplains, areas of 100-year sheet flow flooding where average depths are less than 1 foot, areas of 100-year stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 100-year flood by levees. No Base Flood Elevations (BFEs) or depths are shown within this zone.

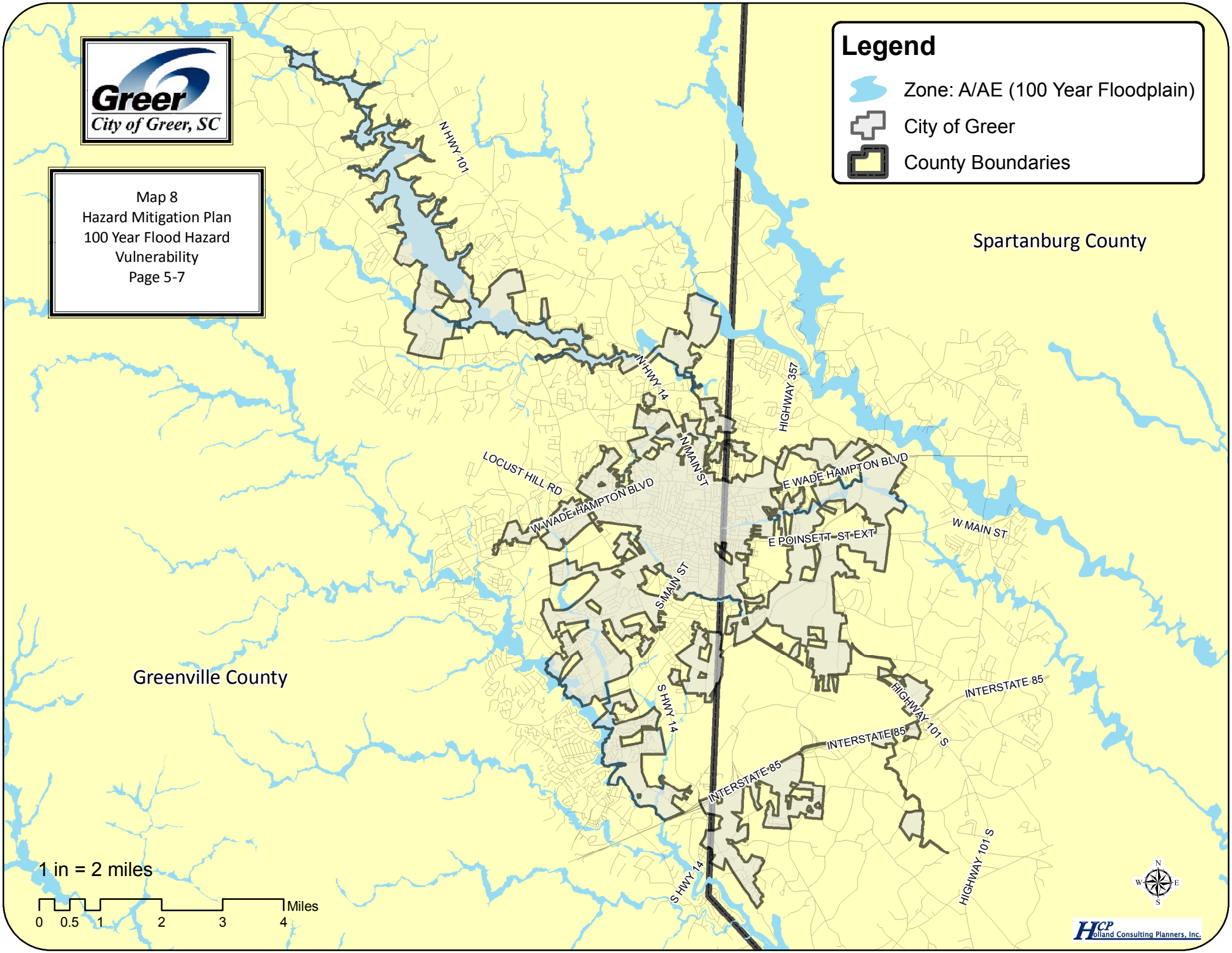
- **Zone X-500** is the flood insurance rate zone that corresponds to the 500-year floodplains. No Base Flood Elevations (BFEs) or depths are shown within this zone.

Table 15 provides information on the number of acres in the FEMA-defined 100-year and 500-year floodplains within the City of Greer.

Table 15. City of Greer Flood Zones

Flood Zone	Acres	% of Total
A	194	1.4%
AE	1,814	13.1%
X	11,670	84.4%
X-500	152	1.1%
Total	13,830	100.0%

Source: City of Greer, Greenville County, and Spartanburg County.


Greer
City of Greer, SC
Map 8
Hazard Mitigation Plan
100 Year Flood Hazard
Vulnerability
Page 5-7
Legend
Zone: A/AE (100 Year Floodplain)
City of Greer
County Boundaries
Spartanburg County
Greenville County
N HWY 101
N HWY 14
HIGHWAY 357
LOCUST HILL RD
N MAIN ST
E WADE HAMPTON BLVD
W WADE HAMPTON BLVD
E POINSETT ST EXT
W MAIN ST
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S HWY 14
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1. Existing Vulnerability

The following provides an estimate of existing vulnerability relating to the 100-year floodplain utilizing the same methodology outlined above. Please refer to Section 5.B. Estimates for development within the floodplain is based on actual structures. Due to the fact that these properties must carry flood insurance, and are typically the focus of specific mitigation measures, it is important to address floodplain development in this manner.

Table 16. City of Greer Floodprone Structures

Land Use	# of Buildings	Bldg. Value	Tax Value	% of Total
Commercial	1	$179,706	$300,946	3.4%
Industrial	5	$499,620	$3,537,290	40.3%
Multi-Family	8	$2,210,270	$2,354,208	26.8%
Single-Family	8	$968,179	$2,582,789	29.4%
Total	22	$3,857,775	$8,775,233	100.0%

Source: City of Greer, Greenville County, and Spartanburg County.

2. Future Vulnerability

The following table provides a breakdown of development potential for portions of Greer falling within the 100-year floodplain. This analysis has been based on the same methodology outlined in Section 5.B.

Table 17. City of Greer Vacant Zoning in Floodplain

Use	Acres	% of Total	Total Potential Developed Value
Commercial	29	9.0%	$9,043,067
Industrial	27	8.0%	$2,156,180
Residential	270	83.0%	$138,395,701
Total	326	100.0%	$149,594,948

Source: City of Greer, Greenville County, and Spartanburg County.

3. Estimated Impact On Residential Development

As outlined above, there are approximately 270 acres of vacant land zoned for residential development within the City of Greer's 100-year floodplain. Based on an average of 2.9 units per acre, this will result in an additional 783 residential units within the 100-year floodplain at build-out. If this development were to transpire, an additional 1,934 individuals would be located within a FEMA-defined flood hazard area. It should be noted that there are only eight single-family and eight multi-family structures currently located within the 100-year floodplain.

4. Repetitive Loss and Severe Repetitive Loss Structures

As noted in "Keeping Natural Hazards from Becoming Disasters: A Mitigation Planning Guidebook for Local Governments" produced by NCEM, repetitive loss structures are NFIP-insured property that, since 1978 and regardless of any change(s) of ownership during that period, has experienced:

- Four or more paid flood losses of more than $1,000 each; or
- Two paid flood losses within a 10-year period that, in the aggregate, equal or exceed the current value of the insured property; or
- Three or more paid losses that, in the aggregate, equal or exceed the current value of the insured property.

The only reliable source of information on repetitive loss structures is flood insurance claims data available through the National Flood Insurance Program (NFIP). There are currently no repetitive loss structures in the City of Greer.

The definition of severe repetitive loss as applied to this program was established in section 1361A of the National Flood Insurance Act, as amended (NFIA), 42 U.S.C. 4102a. An SRL property is defined as a residential property that is covered under an NFIP flood insurance policy and:

(a) That has at least four NFIP claim payments (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or

(b) For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

For both (a) and (b) above, at least two of the referenced claims must have occurred within any ten-year period, and must be greater than 10 days apart.

There are currently no severe repetitive loss properties within the City of Greer.

D. Drought/Extreme Heat

No analysis was performed to address the drought/extreme heat hazard. All properties and citizens are equally vulnerable to this risk within the City of Greer. The City, in conjunction with CPW, will continue to monitor the drought situation in conjunction with the State of South Carolina to ensure that water supply resources are protected and maintained. As noted earlier in the plan, the City has not been required at this point to enforce mandatory water restrictions. This issue is at the forefront of discussions relating to public health and safety within the City.

E. Airport Environs

1. Existing Vulnerability

The following provides an overview of existing vulnerability within the Greenville-Spartanburg Airport (GSP) environs. For an overview of this hazard area, refer to page 3-22.

Table 18. City of Greer Land Use and Property Vulnerability to GSP Environs

Land Use	# of Properties	Acres	% of Total	Bldg. Value	Tax Value
Commercial	17	101	41.2%	$5,277,938	$9,023,036
Industrial	20	106	43.1%	$9,364,578	$12,225,967
Single-Family	46	39	15.7%	$3,150,258	$3,950,683
Total	83	246	100.0%	$17,792,774	$25,199,686

Source: City of Greer, Greenville County, and Spartanburg County.

2. Future Vulnerability

The following table provides an estimate of potential future vulnerability relating to the defined airport environs.

Table 19. City of Greer Vacant Zoning in GSP Environs

Use	Acres	% of Total	Total Potential Developed Value
Commercial	117	13.8%	$36,832,562
Industrial	717	84.7%	$56,982,394
Residential	13	1.5%	$6,587,725
Total	847	100.0%	$100,402,681

Source: City of Greer, Greenville County, and Spartanburg County.

3. Estimated Impact On Residential Development

As outlined above, there are approximately 13 acres of vacant land zoned for residential development within the Greenville-Spartanburg Airport environs. Based on an average of 2.9 units per acre, this will result in an additional 38 residential units within this area at build-out. If this development were to transpire, an additional 94 individuals would be located within this defined man-made hazard area.

F. "Old Mill House" Area

1. Existing Vulnerability

The following provides an overview of existing vulnerability within the Old Mill House area. For an overview of this hazard area, refer to page 3-25.

Table 20. City of Greer Land Use and Property Vulnerability to the "Old Mill House" Area

Land Use	# of Properties	Acres	% of Total	Bldg. Value	Tax Value
Multi-Family	2	1	2.3%	$303,000	$318,000
Public/Semi-Public	3	2	4.4%	$0	$54,500
Single-Family	206	38	93.4%	$7,262,500	$8,301,500
Total	211	41	100.0%	$7,565,500	$8,674,000

Source: City of Greer, Greenville County, and Spartanburg County.

2. Future Vulnerability

There is no estimate of future vulnerability for the Old Mill House residential area. This decision was based on the fact the within the 500-foot buffer area surrounding the mill house site, there is approximately 5,000 square feet of vacant land. The established density within this district only serves to exacerbated the fire hazard that persists in this area.

G. Rail Corridor Hazard Area

The following tables provide an overview of existing and potential vulnerability for portions of the City located within one hundred feet of the existing CSX and Norfolk Southern rail lines that traverse through the center of Greer's corporate limits.

1. Existing Vulnerability

The following provides an overview of existing vulnerability within the rail corridor hazard area. For an overview of this hazard area, refer to page 3-25.

Table 21. City of Greer Land Use and Property Vulnerability to the Railway Corridor

Land Use	# of Properties	Acres	% of Total	Bldg. Value	Tax Value
Commercial	34	14	17.6%	$2,318,057	$3,800,818
Industrial	8	38	48.4%	$1,986,503	$2,378,857
Multi-Family	2	0	0.4%	$66,812	$87,452
Public/Semi-Public	6	1	1.1%	$66,246	$274,653
Single-Family	97	26	32.4%	$4,425,901	$5,371,686
Total	147	79	100.0%	$8,863,519	$11,913,466

Source: City of Greer, Greenville County, and Spartanburg County.

2. Future Vulnerability

The following table provides an estimate of potential future vulnerability relating to the defined rail corridor hazard area.

Table 22. City of Greer Vacant Zoning in Railway Corridor

Use	Acres	% of Total	Total Potential Developed Value
Commercial	3	18.1%	$1,022,898
Industrial	8	42.1%	$598,794
Residential	7	39.8%	$3,649,057
Total	18	100.0%	$5,270,749

Source: City of Greer, Greenville County, and Spartanburg County.

3. Estimated Impact On Residential Development

As outlined above, there are approximately 7 acres of vacant land zoned for residential development within the rail corridor hazard area. Based on an average of 2.9 units per acre, this will result in an additional 20 residential units within this area at build-out. If this development were to transpire, an additional 50 individuals would be located within this defined man-made hazard area. It should be noted that land which falls within the rail corridor hazard area may fall within a larger tax parcel. Where this is the case, portions of the property within the rail corridor should be preserved in an effort to mitigate adverse impacts on the future development that may result from encroachment.

H. Community/Critical Facilities

The hazard mitigation planning guidelines require the City to identify all community/critical facilities, and determine if any of these structures or locations fall within a defined hazard area. The MAC went through an exercise which tasked each member with identifying facilities and locations throughout the City of Greer that serve citizen's day-to-day needs. Each MAC member was charged with identifying facilities that were pertinent to their department's area of concern. The results of this analysis are provided in Appendix 6 of this plan. All community facilities have been broken down by key function. A majority of these facilities have been mapped, and are also provided in Appendix 6.

The following table outlines all community/critical facilities that fall within a defined hazard area. This table also provides an estimated replacement value (if available) for these facilities. At this time, no expansion of critical or community facilities is anticipated within the City of Greer; therefore, this has not been addressed in the following table.

Table 23. City of Greer Community/Critical Facilities

Facility	Type	Hazard
Greer Sewage Disposal Plant	Utilities & Services	Environs
Bridge - HWY 101	Transportation Facilities	Flood
Bridge - E Wade Hampton	Transportation Facilities	Flood
Dam - Lake Cunningham	Utilities & Services	Flood
Dam - Lake Robinson	Utilities & Services	Flood
Church	Institutional Uses	Rail Corridor
City Transfer Station	Transportation Facilities	Rail Corridor
Bridge - HWY 14	Transportation Facilities	Rail Corridor
Bridge - J Verne Smith Parkway	Transportation Facilities	Rail Corridor
Railroad Switching Points	Transportation Facilities	Rail Corridor
Railroad Switching Points	Transportation Facilities	Rail Corridor
Railroad Switching Points	Transportation Facilities	Rail Corridor
Bridge - J Verne Smith Parkway	Transportation Facilities	Environs
Railroad Switching Points	Transportation Facilities	Environs
Railroad Switching Points	Transportation Facilities	Environs
Veteran's Park	Parks & Recreation Facilities	Mill House
Veteran's Park	Parks & Recreation Facilities	Flood

Source: City of Greer, Holland Consulting Planners, Inc.

Section 6. Mitigation Strategies

A. Introduction

Goals are statements of desirable future conditions that are to be achieved. They are broad in scope and assist in setting community priorities. Objectives are more tangible and specific than goals. The following goals will provide the basis for the objectives, and corresponding implementation strategies that will be included in this plan, some of which are already being administered and implemented through existing City departments and initiatives:

1. Saving lives and reducing injuries;
2. Preventing or reducing property damage and reducing economic losses;
3. Minimizing social dislocation and stress and protecting mental health;
4. Maintaining critical facilities in functional order;
5. Protecting infrastructure from damage;
6. Providing options for political leaders regarding hazard reduction;
7. Fulfilling Federal and State requirements for receipt of future disaster recovery and hazard mitigation assistance;
8. Improving inter-jurisdictional cooperation and coordination, especially regarding the reduction of natural hazard impacts;
9. Increasing local awareness regarding threats associated with natural and man-made hazards.

The overall hazard mitigation planning effort is focused on providing the City of Greer with an action plan that will strive toward the achievement of these goals. In order to establish this plan, the MAC was charged with developing objectives and specific implementing actions tied to each of these goal statements. The following provides definitions of how goals, objectives, and implementing action relate to one another:

- **Goals** – A broad based statement of intent that establishes the direction for the City of Greer Hazard Mitigation Plan. Goals state desired outcomes for the overall implementation process.

- **Objective** – The stated means of achieving each defined goal, or tasks to be executed in the process of achieving stated goals.

- **Implementing Actions** – A project specific strategy aimed at mitigation and involving a specific entity, interest, and funding mechanism.

As the MAC worked through the development of this action plan, the group focused on six primary mitigation focus areas. These focus areas define the various aspects of mitigation, and provide guidance toward the development of a truly comprehensive solution to mitigation planning.

- **Prevention Mechanisms** include regulatory methods such as planning and zoning, building regulations, open space planning, land development regulations, and stormwater management.

- **Property Protection** actions diminish the risk of structural damage through acquisition of land, relocation of buildings, modifying high-risk structures, and floodproofing high-risk structures.

- **Natural Resource Protection** can soften hazard impacts through mechanisms such as erosion and sediment control or wetlands protection.

- **Emergency Services** measures include warning, response capacity, critical infrastructures protection, and health and safety maintenance.

- **Structural Mitigation** controls natural hazards through projects such as reservoirs, levees, diversions, channel modifications and storm sewers.

- **Public Education** includes providing hazard maps and information, outreach programs, real estate disclosure, technical assistance and education.

The table below outlines all objectives and implementing actions developed through the City of Greer Planning process. The table provides a description of each objective and supporting actions aimed at furthering each. The table also provides guidance relating to funding sources, party responsible for implementation, priority, and identification of which goals and mitigation focus areas are being addressed through each implementation action.

The actions in this table have been ranked based on a cost-benefit review conducted by the MAC through the planning process. Consideration was also given to continued compliance with the NFIP through the development of these strategies.

- **High Priority** - Highly cost-effective, administratively feasible and politically feasible policies that should be implemented in fiscal years 2010/2011 and 2011/2012 and be continued.

- **Medium Priority** - Policies that have at least two of the following characteristics (but not all three) and should be implemented in fiscal years 2012/2013 to 2014/2015:

  - Highly cost-effective; or
  - Administratively feasible, given current levels of staffing and resources; or
  - Are politically popular and supportable given the current environment.

- **Low Priority** - Policies that have at least one of the following characteristics (but not two or three) and should be implemented in the next five (5) years (by the end of 2014/2015):

  - Highly cost-effective; or
  - Administratively feasible, given current levels of staffing and resources; or
  - Are politically popular and supportable given the current environment.

Policies will be implemented earlier if resources are available. It should also be noted that projects or initiatives given low priority may be ultimately contingent upon grant funding.

City of Greer

B. Hazard Mitigation Goals and Action Items

Objective #1: Provide adequate human relief during and following natural and man-made hazards

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Complete an evaluation checklist for a defined local/regional shelter facility, including structural inspection, resource inventory, staffing plan, and vulnerability assessment. (1) Identify eligible shelters from the American Red Cross existing shelter list. (2) Determine which shelters will be best suited for activation for a localized event.	1,3,8	Emergency Services	1,3,4,8,9,10	Staff Resources, General Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department - 103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department & American Red Cross (ARC)
Formalize a local and regional shelter plan with Greenville County Spartanburg County and the American Red Cross, including shelter identification and staffing plans for various types/magnitudes of disasters.	1,3,8	Emergency Services	1,3,4,8,9,10	Staff Resources, General Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department - 103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department, Greenville County Emergency Management, Spartanburg County Emergency Management & American Red Cross (ARC)
Establish and MOU with the American Red Cross to establish the City's capability for activating a local shelter for localized events: (1) Determine under which conditions activiation will be necessary, (2) Determine who the primary point of contact will be for the City, (3) coordinate all activation prameters with the ARC, and incoporate into the MOU.	1,3,8	Emergency Services	1,3,4,8,9,10	Staff Resources, General Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department & American Red Cross (ARC)
Identify and evaluate potential new city run shelter facilities (not sponsored by ARC), with emphasis on building local volunteer capability and creating locally-staffed shelters for small magnitude disaster events.	1,3,8,	Emergency Services	1,3,4,8,9,10	Staff Resources, General Funding	Low	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department
Acknowledge the potential need for safe evacuation routes prior to or following natural and manmade disasters. Review annually.	1,3,8,	Emergency Services	3,4,8,9,10	Staff Resources, General Funding	Low	**Primary** - Chief Chris Harvey - 103 Poinsett Street - Greer SC, 29560 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department
Meet annually with owners/managers of city nursing homes and healthcare facilities to review evacuation procedures, disaster staffing plans, emergency power capability, etc.	1,2,3,4,8	Emergency Services	3,4,8,9,10	Staff Resources	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department - 103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department
Hazards Addressed: 1 Severe Winter Weather/Ice Storm; 2 Severe Weather/ Thunderstorm; 3 Dam/Levee Failure; 4 Flooding; 5 Hail; 6 Lightning; 7 Drought/ Extreme Heat; 8 Tornado; 9 Wildfire; 10 Earthquake						

City of Greer

Hazard Mitigation Goals and Action Items

Objective #2: Ensure uninterrupted and effective local/interagency communication and response during disaster events

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Formalize an independent, local response/communication plan for both immediate and long-term disaster events, including definition of command hierarchy/response plans and primary/backup communication network plans for typical local disaster events. This plan is to assume dependence on existing communications equipment and response equipment.	1,2,3,4,5,8	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding, State Funding, Federal Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department
Prepare a formal agreement with both County EM Departments that defines parameters for independent local disaster response to avoid redundancy by county emergency response teams and activation of county EOP's during smaller-scale disaster events.	1,2,3,4,5,8	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department, Greenville County Emergency Management, Spartanburg County Emergency Management
Evaluate adequacy of existing local emergency response communication equipment with regard to both local and regional disasters and prepare a capital improvements plan designed specifically to improve local communications capabilities and improve communications with county/state emergency response teams. This discussion should include communication flow with CPW representatives.	1,2,3,4,5,8	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding, State Funding, Federal Funding	Low	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department & Greer Commission of Public Works (CPW)
Establish city wide utilization of the REACH SC program, including a public service campaign prompting citizens to register their unlisted or mobile telephone numbers.	1,3	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Reources	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department
Monitor state and federal grant programs for opportunities that allow for the funding of expanded or improved communication equipment.	1,3,6,7	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Resources	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department
Hazards Addressed: 1 Severe Winter Weather/Ice Storm; 2 Severe Weather/ Thunderstorm; 3 Dam/Levee Failure; 4 Flooding; 5 Hail; 6 Lightning; 7 Drought/ Extreme Heat; 8 Tornado; 9 Wildfire; 10 Earthquake						

City of Greer

Hazard Mitigation Goals and Action Items

Objective #3: Improve training level and response capacity of local professional and volunteer emergency response teams.

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Evaluate adequacy of existing local emergency response staffing and equipment with regard to both local and regional disasters and evaluate current ability to respond in accordance with requirements of existing county EOP's. Establish annual exercises to test preparedness and improve operations.	1,2,3,4,5,8	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding, State Funding, Federal Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department, Greenville County Emergency Management, Spartanburg County Emergency Management
Develop standard protocols for training/certification of volunteer staff for shelter management, traffic control, first aid, etc., to improve volunteer response capacity during and following disaster events.	1,3,8,9	Emergency Services	1,3,4,8,9,10	Staff Resources, General Funding, State Funding, Federal Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department
Develop specific annual disaster response training plans for city fire/EMS and police departments and improve capability of city to respond independently to small-scale and large-scale disaster events and to improve the integration of city staff/equipment into response parameters required by county EOP's.	1,3,4,8	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding, State Funding, Federal Funding	Low	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department, Greenville County Emergency Management, Spartanburg County Emergency Management
In collaboration with Goal #1 work on improving/training emergency response coordination and effectiveness between the City, CPW, and County Emergency Management Departments.	1,2,3,4,5,8	Emergency Services	1,2,3,4,5,6,7,8,9,10	Staff Resources, General Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Dan Reynolds, City of Greer Police Department
Hazards Addressed: 1 Severe Winter Weather/Ice Storm; 2 Severe Weather/ Thunderstorm; 3 Dam/Levee Failure; 4 Flooding; 5 Hail; 6 Lightning; 7 Drought/ Extreme Heat; 8 Tornado; 9 Wildfire; 10 Earthquake						

City of Greer

Hazard Mitigation Goals and Action Items

Objective #4: Manage growth and regulate development to mitigate natural and man-made hazards.

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Incorporate "risk mapping" components of the hazard mitigation plan, including mapping of vulnerable critical facilities and residential/commercial development, into new City Comprehensive Plan.	2,3,6,7	Prevention Mechanisms/Property Protection	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Justin Glenn, City of Greer Geographic Information Systems (GIS)
Integrate new bikeway/greenway and public park improvements into comprehensive planning and capital improvement efforts.	2,7	Prevention Mechanisms/Natural Resource Protection	3,4	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Ann Cunningham, City of Greer Recreation Director
Provide more specific analysis of manmade hazards associated with the railroad corridor within the city's planning jurisdiction, identify high risk development along this corridor, and priorize proposed property protection initiatives.	1,2,5	Prevention Mechanisms/Property Protection	Man-made Hazards	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Justin Glenn, City of Greer Geographic Information Systems (GIS)
Develop a zoning overlay district along the railroad corridor that would serve to reduce subsequent development density, mitigate negative impacts, and preserve open space along the corridor.	1,2,5	Prevention Mechanisms/Property Protection/Natural Resource Protection	Rail Corridor Protection	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Justin Glenn, City of Greer Geographic Information Systems (GIS)
Provide annual review of development restrictions in floodplain areas and maintain initiatives to ensure limited residential and commercial development in the floodplain.	1,2,4,5,7	Prevention Mechanisms/Property Protection/Natural Resource Protection	3,4	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Justin Glenn, City of Greer Geographic Information Systems (GIS)
Maintain map of floodplain and floodprone areas on city website and at building inspection offices.	1,2,9	Prevention Mechanisms/Property Protection/Natural Resource Protection	3,4	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Steve Owens, City of Greer Commnications Manager
Review existing/develop new/enforce building codes to mitigate potential economic and human losses during disasters as deemed necessary.	1,2,4,5	Prevention Mechanisms/Property Protection	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding	Low	**Primary** - Phil Rhoads - City of Greer Building Standards - 301 East Poinsett Street - Greer SC, 29651 - (864)848-2175 - prhoads@cityofgreer.org **Secondary** - Glenn Pace, City of Greer Planning & Zoning Administration
The City of Greer will continue to work with Spartanburg County to identify funding sources that may assist in the demolition and removal of the "Old Mill". This will be carried out in an effort to eliminate this significant fire hazard centrally located to affect properties located within the City of Greer.	1,2,3,5	Prevention Mechanisms/Property Protection	"Old Mill House" Hazard	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Ed Driggers, City of Greer Administrator & Spartanburg County
Hazards Addressed: 1 Severe Winter Weather/Ice Storm; 2 Severe Weather/ Thunderstorm; 3 Dam/Levee Failure; 4 Flooding; 5 Hail; 6 Lightning; 7 Drought/ Extreme Heat; 8 Tornado; 9 Wildfire; 10 Earthquake						

City of Greer

Hazard Mitigation Goals and Action Items

Objective #5: Improve public understanding of local vulnerability to hazards and improve disaster warning/post-disaster information efforts.

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Mail hazard advisory/mitigation information summary to city citizens on an annual basis.	2,3,7,9	Public Education	1,2,3,4,5,6,7,8,9,10	Staff Resources, General Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Steve Owens, City of Greer Communications Manager
Incorporate risk mapping (natural and manmade hazard identification) into city website.	7,9	Public Education	1,2,3,4,5,6,7,8,9,10	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Steve Owens, City of Greer Communications Manager & Justin Glenn, Geographic Information Systems (GIS)
Provide hazard mitigation goals and actions/timelines/progress on city website.	7,9	Public Education	1,2,3,4,5,6,7,8,9,10	Staff Resources, General Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Steve Owens, City of Greer Communications Manager
Run periodic public advisories concerning the city's disaster response providers/efforts on local television and in local newspapers.	7,9	Public Education	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - Steve Owens, City of Greer Communications Manager
Hold an annual public hazard mitigation meeting, attended by the MAC and City Council, to educate the public and elected officials and receive comments about the location of high risk facilities/development, the city's overall vulnerability to natural and manmade hazards, and the city's hazard mitigation efforts.	6,7,9	Public Education	12,3,4,5,6,8,9,10	Staff Resources, General Funding	Low	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - All Mitigation Advisory Committee members & City of Greer elected officials
Maintain citizen representation on the MAC, to be involved in all discussions and decision making relating to plan implementation.	7,9	Public Education	1,2,3,4,5,6,7,8,9,10	Staff Resources	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - All Mitigation Advisory Committee members
Hazards Addressed: 1 Severe Winter Weather/Ice Storm; 2 Severe Weather/ Thunderstorm; 3 Dam/Levee Failure; 4 Flooding; 5 Hail; 6 Lightning; 7 Drought/ Extreme Heat; 8 Tornado; 9 Wildfire; 10 Earthquake						

City of Greer

Hazard Mitigation Goals and Action Items

Objective #6: Reduce flooding and erosion vulnerability through land development initiatives and maintenance, and improvement of storm drainage infrastructure.

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Establish and maintain a comprehensive GIS inventory of the existing city-maintained storm drainage system.	2,5,7	Structural Mitigation	3	Staff Resources, General Funding	High	**Primary** - Don Holleman - City of Greer Engineering - 301 E. Poinsett Street, Greer, SC 29651 - (864)848-2181 - dholleman@cityofgreer.org **Secondary** - Lillian Hanley, Storm Water Program Director
Identify and map stormwater "hot spots" and develop a prioritzed capital improvement plan for upgrade of substandard storm drainage components.	2,5,7	Structural Mitigation	3	Staff Resources, General Funding	High	**Primary** - Don Holleman - City of Greer Engineering - 301 E. Poinsett Street, Greer, SC 29651 - (864)848-2181 - dholleman@cityofgreer.org **Secondary** - Lillian Hanley, Storm Water Program Director
Continue to stringently enforce state stormwater regulations.	2,5	Prevention Mechanisms	3	Staff Resources, General Funding	High	**Primary** - Lillian Hanley - City of Greer Engineering - 301 E. Poinsett Street, Greer, SC 29651 - (864)848-2181 - lhanley@cityofgreer.org **Secondary** - Don Holleman, City of Greer Engineering
Develop a written policy and schedule for periodic clearing and maintenance of streams and watercourses in floodprone areas.	2,5	Structural Mitigation	3	Staff Resources, General Funding	Low	**Primary** - Don Holleman - City of Greer Engineering - 301 E. Poinsett Street, Greer, SC 29651 - (864)848-2181 - dholleman@cityofgreer.org **Secondary** - Jlilian Hanley, Storm Water Program Director
Hazards Addressed: 1 Severe Winter Weather/Ice Storm; 2 Severe Weather/ Thunderstorm; 3 Dam/Levee Failure; 4 Flooding; 5 Hail; 6 Lightning; 7 Drought/ Extreme Heat; 8 Tornado; 9 Wildfire; 10 Earthquake						

City of Greer

Hazard Mitigation Goals and Action Items

Objective #7: Mitigate vulnerability of critical facilities and at-risk structures to natural hazards through retrofitting or other mitigation activity.

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Map and inventory all floodprone structures and develop priority list for elevation/retrofitting or acquisition based on cost/benefit analysis and overall feasibility.	1,2,6,7	Property Protection	3,4	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Justin Glenn, City of Greer Geographic Information Systems (GIS)
Map and inventory all structures posing a significant fire hazard and develop a priority list for code enforcement or acquisition based on potential risk.	1,2,6,7	Property Protection	9	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Justin Glenn, City of Greer Geographic Information Systems (GIS)
Map and inventory all structures along the railroad corridor and develop a priority list for code enforcement, relocation, or acquisition based on potential risk.	1,2,6,7	Property Protection	Rail Corridor Protection	Staff Resources, General Funding	High	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29651 - (864)801-2009 - gpace@cityofgreer.org **Secondary** - Justin Glenn, City of Greer Geographic Information Systems (GIS)
Improve security at city fuel depot.	4,8	Emergency Services	Man-made Hazards	Staff Resources, General Funding, State Funding, Federal Funding	Low	**Primary** - John Burns - City of Greer Public Services - City Operations Center, 446 Pennsylvania Ave - Greer, SC 29650 - (864)801-2009 - jburns@cityofgreer.org **Secondary** - Chief Dan Reynolds, City of Greer Police Chief
Improve capability of secondary power source at city fuel depot.	4,8	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Resources, General Funding, State Funding, Federal Funding	Low	**Primary** - John Burns - City of Greer Public Services - City Operations Center, 446 Pennsylvania Ave - Greer, SC 29650 - (864)801-2009 - jburns@cityofgreer.org **Secondary** - Don Holleman, City of Greer Engineering
Maintain a representative of the public electric power authority on the MAC.	4,8	Emergency Services	1,2,3,4,5,6,8,9,10	Staff Resources	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - All Mitigation Advisory Committee members
Encourage owners of critical facilities to provide secondary electrical power sources.	3,4,8,9	Emergency Services	1,3,4,5,6,8,9,10	Staff Resources	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - All Mitigation Advisory Committee members
Encourage owners of critical facilities to retrofit for lightning protection and evaluate city's public facilities lightning protection capabilities.	3,4,8,9	Property Protection/Emergency Services	1,3,4,5,6,8,9,10	Staff Resources	High	**Primary** - Chief Chris Harvey - City of Greer Fire Department -103 Poinsett Street - Greer SC, 29650 - (864)848-2165 - charvey@cityofgreer.org **Secondary** - All Mitigation Advisory Committee members

City of Greer

Hazard Mitigation Goals and Action Items

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Improve generator response capabilities at high-risk traffic intersections.	1,3,5,6	Emergency Services	Man-made Hazards	Staff Resources, General Funding, State Funding, Federal Funding	Low	**Primary** - Chief Dan Reynolds - City of Greer Police Department -102 South Main Street- Greer SC, 29650 - (864)848-2187 - dreynolds@cityofgreer.org **Secondary** - Chief Chris Harvey, City of Greer Fire Department
Establish measures to improve resistance of public electric system to wind and ice storm events.	3,4,5	Emergency Services	1,2,8	Staff Resources, General Funding, Enterprise Funding, State Funding, Federal Funding	Low	**Primary** - Randy Olson - Greer CPW - 301 McCall Street - Greer SC, 29650 - (864)968-5500 **Secondary** - John Burns, City of Greer Public Services
Hazards Addressed: 1 Severe Winter Weather/Ice Storm; 2 Severe Weather/ Thunderstorm; 3 Dam/Levee Failure; 4 Flooding; 5 Hail; 6 Lightning; 7 Drought/ Extreme Heat; 8 Tornado; 9 Wildfire; 10 Earthquake						

City of Greer

Hazard Mitigation Goals and Action Items

Objective #8: Identify specific potential man-made hazards and mitigate potential risks.

Action Item	Mitigation Goals Addressed -- See Page 6-1	Focus Area(s)	Hazards Addressed	Funding Source (refer to Appendix 5)	Priority	Responsible Party
Evaluate rail crossing risks and develop schedule for mitigation of traffic hazards at high-risk rail crossings; incorporate this information into public awarenesss efforts.	1,3,5	Structural Mitigation/Emergency Services/Public Education	Rail Corridor Protection	Staff Resources	High	**Primary** - Chief Dan Reynolds - City of Greer Police Department -102 South Main Street- Greer SC, 29650 - (864)848-2187 - dreynolds@cityofgreer.org **Secondary** - Chief Chris Harvey, City of Greer Fire Department
Initiate communication with Highway Patrol and SCDOT concerning mitigation of safety risks associated with diversion of traffic from I-85 through city streets following a major accident.	1,5,8,9	Emergency Services	Man-made Hazards	Staff Resources	Low	**Primary** - Chief Dan Reynolds - City of Greer Police Department -102 South Main Street- Greer SC, 29650 - (864)848-2187 - dreynolds@cityofgreer.org **Secondary** - Chief Chris Harvey, City of Greer Fire Department
Maintain dialogue with the Airport Authority to effectively regulate land use as the City continues to grow and encroach upon the airport environs defined within this plan.	1,2,5,8		Airport Environs Protection	Staff Resources, General Funding	Low	**Primary** - Glenn Pace - City of Greer Planning & Zoning Administration - 301 East Poinsett Street - Greer SC, 29650 - (864)848-5396 - gpace@cityofgreer.org **Secondary** - Justin Glenn, City of Greer Geographic Information Systems (GIS)
Hazards Addressed: 1 Severe Winter Weather/Ice Storm; 2 Severe Weather/ Thunderstorm; 3 Dam/Levee Failure; 4 Flooding; 5 Hail; 6 Lightning; 7 Drought/ Extreme Heat; 8 Tornado; 9 Wildfire; 10 Earthquake						

Section 7. Plan Maintenance and Implementation Procedures

A. Implementation

Implementation of the City of Greer Hazard Mitigation Plan will commence with adoption of the document by the City Council. The Resolution of Adoption has been provided as Appendix 2 of the plan.

Upon adoption, the City of Greer Hazard Mitigation Plan faces the truest test of its worth, implementation. Implementation implies two concepts: action and priority. These are closely related. While this plan puts forth many worthwhile and high priority recommendations, the decision about which action to undertake first will be the first task facing the Mitigation Advisory Committee (MAC). There are two factors to consider in making that decision; the priority of the item and available funding. Thus, pursuing low or no-cost high-priority recommendations will have the greatest likelihood of success.

Another important implementation mechanism that is highly effective and low-cost is incorporation of the hazard mitigation plan recommendations and their underlying principles into other city plans and regulatory mechanisms, such as the Capital Improvements Plan and the Greer Comprehensive Plan, currently underway. The City will utilize this plan as a starting point toward implementing policies and programs to reduce losses to life and property from natural hazards.

Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. This integration is accomplished by constant efforts to network, identify, and highlight the multi-objective benefits to each program, and its stakeholders. This effort is achieved through the routine actions of monitoring implementation efforts, attending meetings, and promoting a safe, sustainable community. Additional mitigation strategies could include consistent and ongoing enforcement of existing policies and review of city and county (Greenville and Spartanburg) programs for coordination and regional multi-objective opportunities.

Simultaneous to these efforts, it is important to maintain a constant monitoring of funding opportunities that can be leveraged to implement some of the more costly recommended actions. This will include creating and maintaining a bank of ideas on how any required local match or participation requirement can be met. When funding does become available, the MAC will be in a position to capitalize on the opportunity. Funding opportunities to be

monitored include special pre- and post-disaster funds, special district budgeted funds, state or federal earmarked funds, and grant programs, including those that can serve or support multi-objective implementing actions.

B. Role of the Mitigation Advisory Committee in Implementation and Maintenance

With adoption of this plan, the MAC will be tasked with plan implementation and maintenance. The MAC, led by the Chief Chris Harvey of the City of Greer Fire Department, agrees to:

- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation of high-priority, low/no-cost recommended actions;
- Keep the concept of mitigation in the forefront of community decision making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters;
- Continuously monitor multi-objective cost-share opportunities to help the community implement the plan's recommended actions for which no current funding exists;
- Monitor and assist in implementation and update of this plan;
- Report on plan progress and recommended changes to the Greer City Council; and
- Inform and solicit input from the public.

The MAC will not have any powers over City staff; it will be purely an advisory body. Its primary duty is to see the plan successfully carried out and to report to the community governing board and the public on the status of plan implementation and mitigation opportunities for the City. Other duties include reviewing and promoting mitigation proposals, considering stakeholder concerns about hazard mitigation, passing concerns on to appropriate entities, and posting relevant information on the City website.

C. Maintenance

Plan maintenance implies an ongoing effort to monitor and evaluate plan implementation and to update the plan as progress, roadblocks, or changing circumstances are recognized.

In order to track progress and update the mitigation strategies identified in the policy section of the plan, the City will revisit this plan on a bi-annual basis and after a hazard event. The City of Greer Fire Chief is responsible for initiating this review and will consult with members of the MAC. This monitoring and updating will take place through a formal review by the MAC twice annually, and a five-year written update to be submitted to the SCEMD and FEMA Region IV, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule.

Evaluation of progress can be achieved by monitoring changes in vulnerabilities identified in the plan. Changes in vulnerability can be identified by noting:

- Decreased vulnerability as a result of implementing recommended actions;
- Increased vulnerability as a result of failed or ineffective mitigation actions; and/or
- Increased vulnerability as a result of new development (and/or annexation).

Updates to this plan will:

- Consider changes in vulnerability due to project implementation;
- Document success stories where mitigation efforts have proven effective;
- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Incorporate new data or studies on hazards and risks;
- Incorporate new capabilities or changes in capabilities;
- Incorporate growth and development-related changes to city inventories; and
- Incorporate new project recommendations or changes in project prioritization.

In order to best evaluate any changes in vulnerability as a result of plan implementation, the MAC will use the following process:

- A representative from the responsible office identified in each mitigation action will be responsible for tracking and reporting on a bi-annual basis to the MAC on project status and provide input on whether the project as implemented meets the defined objectives and is likely to be successful in reducing vulnerabilities.

- If the project does not meet identified objectives, the MAC will determine what additional measures may be implemented and an assigned individual will be responsible for defining project scope, implementing the project, monitoring success of the project, and making any required modifications to the plan.

Changes will be made to the plan to accommodate for projects that have failed or are not considered feasible after a review for their consistency with established criteria, the time frame, City priorities, and/or funding resources. Priorities that were identified as potential mitigation strategies will be reviewed as well during the monitoring and update of this plan to determine feasibility of future implementation.

Updating of the plan will be by written changes and submissions, as the MAC deems appropriate and necessary, and as approved by the Greer City Council. In keeping with the process of adopting the plan, a public involvement process to receive public comment on plan maintenance and updating will be held once annually, and the final product will be adopted by City Council.

D. Incorporation of Existing Planning Mechanisms

The mitigation actions in Section 6 of this plan recommends using existing plans and/or programs to implement hazard mitigation in the City, where possible. This point is also emphasized previously in this Section. Based on this plan's capability assessment, the City has and continues to implement policies and programs to reduce losses to life and property from natural hazards. This plan builds upon the momentum developed through previous and related planning efforts and recommends implementing projects, where possible, through the following mechanisms:

- Greer Comprehensive Plan
- City Code of Regulations
- Flood Management Regulations
- Fire Code
- Greer Building Code
- Capital Improvement Plans and Budgets
- Other plans, regulations, and practices with a mitigation focus

As noted within the Capability Assessment section, when amending or updating the documents outlined above, the City of Greer will take the strategies and findings outlined within this plan

into account. The City will accomplish through the explicit implementation of the strategies outlined in Section 6.

E. Continued Public Involvement

Continued public involvement is also imperative to the overall success of the plan's implementation. The update process provides an opportunity to publicize success stories from plan implementation and seek additional public comment. A public hearing(s) to receive public comment on plan maintenance and updating will be held once within the context of the defined bi-annual review process. When the MAC reconvenes for updates, they will coordinate with all stakeholders participating in the planning process – including those that joined the committee since the planning process began (if applicable). The plan maintenance and update process will include continued public and stakeholder involvement and input through attendance at designated committee meetings, web postings, and press releases to local media.

APPENDIX 1

SCEMD COMMENTS

INSTRUCTIONS FOR USING THE PLAN REVIEW CROSSWALK FOR REVIEW OF LOCAL MITIGATION PLANS

Attached is a Plan Review Crosswalk based on the ***Local Multi-Hazard Mitigation Planning Guidance***, published by FEMA in July, 2008. This Plan Review Crosswalk is consistent with the *Robert T. Stafford Disaster Relief and Emergency Assistance Act* (Stafford Act), as amended by Section 322 of the *Disaster Mitigation Act of 2000* (P.L. 106-390), the *National Flood Insurance Act of 1968,* as amended by the *National Flood Insurance Reform Act of 2004* (P.L. 108-264) and *44 Code of Federal Regulations (CFR) Part 201 – Mitigation Planning,* inclusive of all amendments through October 31, 2007.

SCORING SYSTEM
N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.
S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a summary score of "Satisfactory." A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, however, all elements apply. States that have additional requirements can add them in the appropriate sections of the *Local Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements. Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.:

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** plan include an **overall summary** description of the jurisdiction's **vulnerability** to each hazard?	Section II, pp. 4-10	The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms.		□
B. Does the **new or updated** plan address the **impact** of each hazard on the jurisdiction?	Section II, pp. 10-20	The plan does not address the impact of two of the five hazards addressed in the plan. **Required Revisions:** • Include a description of the impact of floods and earthquakes on the assets. **Recommended Revisions:** This information can be presented in terms of dollar value or percentages of damage.	□	
		SUMMARY SCORE	□	

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted. Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a **"Needs Improvement"** score.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**
1. Adoption by the Local Governing Body: §201.6(c)(5) OR		X
2. Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		N/A
3. Multi-Jurisdictional Planning Participation: §201.6(a)(3)		N/A

Planning Process	**N**	**S**
4. Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)		X

Risk Assessment	**N**	**S**
5. Identifying Hazards: §201.6(c)(2)(i)		X
6. Profiling Hazards: §201.6(c)(2)(i)		X
7. Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		X
8. Assessing Vulnerability: Addressing Repetitive Loss Properties. §201.6(c)(2)(ii)		X
9. Assessing Vulnerability: Identifying Structures, Infrastructure, and Critical Facilities: §201.6(c)(2)(ii)(B)		X
10. Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		X
11. Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		X
12. Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)		N/A

*States that have additional requirements can add them in the appropriate sections of the *Local Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Mitigation Strategy	**N**	**S**
13. Local Hazard Mitigation Goals: §201.6(c)(3)(i)		X
14. Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)		X
15. Identification and Analysis of Mitigation Actions: NFIP Compliance. §201.6(c)(3)(ii)		X
16. Implementation of Mitigation Actions: §201.6(c)(3)(iii)		X
17. Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		N/A

Plan Maintenance Process	**N**	**S**
18. Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(ii)		X
19. Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		X
20. Continued Public Involvement: §201.6(c)(4)(iii)		X

Additional State Requirements*	**N**	**S**
Insert State Requirement		
Insert State Requirement		
Insert State Requirement		

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED	
See Reviewer's Comments	
PLAN APPROVED	X

Local Mitigation Plan Review and Approval Status

Jurisdiction: City of Greer	**Title of Plan:** City of Greer, South Carolina Hazard Mitigation Plan	**Date of Plan:** December 2009
Local Point of Contact: Landin Holland	**Address:** 3329 Wrightsville Avenue Wilmington, NC 28403	
Title: Planner		
Agency: Holland Consulting Planners, Inc.		
Phone Number: 910-392-0060	**E-Mail:** lholland@hcpplanning.com	

State Reviewer: Gray Warr	**Title:** Pre-Disaster Mitigation Planner	**Date:**

FEMA Reviewer: Edwardine S. Marrone Linda L. Byers (QC) Jordon Ricks	**Title:** Hazard Mitigation Community Planner Lead Planning Specialist Hazard Mitigation Community Planner	**Date:** April 8, 2010 April 14, 2010 October 29, 2010 (final review)
Date Received in FEMA Region IV	02/09/2010	
Plan Not Approved	April 14, 2010	
Plan Approved	November 8, 2010	
Date Approved	November 8, 2010	

Jurisdiction:	**DFRIM**		**NFIP Status***			
	IN PLAN	**NOT IN PLAN**	**Y**	**N**	**N/A**	**CRS Class**
1. City of Greer, Greenville County		X	X			–

*** Notes:** **Y = Participating** **N = Not Participating** **N/A = Not Mapped**

PREREQUISITE(S)

1. Adoption by the Local Governing Body

Requirement §201.6(c)(5)*: *[The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Has the local governing body adopted **new or updated** plan?		The Plan must be adopted by the governing body to become FEMA approved. **Required Revisions:** The Plan must be adopted. FEMA Reviewer concurs with State Reviewer's comments. **RECEIVED:** The City of Greer adopted the Plan on August 10, 2010.		X
B. Is supporting documentation, such as a resolution, included?		**Required Revisions:** The Plan must be adopted and supporting documentation must be added to the plan. FEMA Reviewer concurs with State Reviewer's comments. **RECEIVED:** FEMA received the adoption resolution for this Plan from the City of Greer on October 26, 2010.		X
		SUMMARY SCORE		X

2. Multi-Jurisdictional Plan Adoption

***Requirement §201.6(c)(5)*:** *For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Does the **new or updated** plan indicate the specific jurisdictions represented in the plan?		This is a Single Jurisdictional Plan. FEMA Reviewer concurs with State Reviewer's comments.		N/A
B. For each jurisdiction, has the local governing body adopted the **new or updated** plan?		This is a Single Jurisdictional Plan. FEMA Reviewer concurs with State Reviewer's comments.		N/A
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?		This is a Single Jurisdictional Plan. FEMA Reviewer concurs with State Reviewer's comments.		N/A
		SUMMARY SCORE		N/A

3. Multi-Jurisdictional Planning Participation

***Requirement §201.6(a)(3)*:** *Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process … Statewide plans will not be accepted as multi-jurisdictional plans.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Does the **new or updated** plan describe **how** each jurisdiction participated in the plan's development?		This is a Single Jurisdictional Plan FEMA Reviewer concurs with State Reviewer's comments.		N/A
B. Does the updated plan identify all participating jurisdictions, including new, continuing, and the jurisdictions that no longer participate in the plan?		This is a Single Jurisdictional Plan FEMA Reviewer concurs with State Reviewer's comments.		N/A
		SUMMARY SCORE		N/A

PLANNING PROCESS: *§201.6(b): An open public involvement process is essential to the development of an effective plan.*

4. Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:*

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): *[The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan provide a narrative description of the process followed to prepare the **new or updated** plan?	Planning Process 1-4 – 1.10 Section 1; Page 1-4 – 1-10	The new Plan provides a narrative description of the process followed to prepare the new plan.		X
B. Does the **new or updated** plan indicate who was involved in the **current** planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, *etc.*?)	1-5 Pages 1-7 to 1-10 Section 1; Page 1-5, 1-7	Plan states the primary responsibility for the development of the plan was placed in the hands of the City of Greer Fire Department under the direction of Chief Chris Harvey who worked closely with the Public Works FEMA Reviewer concurs with State Reviewer's comments, additionally; the Mitigation Advisory Committee (MAC) was formed to develop the new Plan which comprised predominantly of administrative officials from the City and the Greer Commission of Public Works (CPW). In addition to these individuals, a member of the development community and a citizen at-large were selected to participate. MAC members are listed out in a table on page 1-7. The City of Greer also solicited the assistance of Holland Consulting Planners, Inc (HCP) to assist in the development of a comprehensive Hazard Mitigation Plan.		X

4. Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:*

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): *[The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

	Location in the		SCORE	
C. Does the **new or updated** plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	p. 1-8 to 1-10	The MAC held numerous meetings that solicited input from the public. Meetings were advertised locally and open to the public. On February 19 2009, a public meeting was conducted to review and provide input on the draft plan. I final public hearing will be held prior to adoption. FEMA Reviewer concurs with State Reviewer's comments regarding the public's opportunity to comment during the drafting stage, however, the "prior to plan approval" meeting has yet been held. The Updated Plan shall indicate how the public prior to plan approval (e.g. public meetings, interactive Web pages, storefronts, toll-free telephone lines, etc.) **REQUIRED REVISIONS:** Indicate how the public was given a chance to comment on the Updated Plan **prior** to Plan approval. **p. I-9 – Plan states that a final public hearing and public review meeting was held prior to adoption of the Greer HMP in July 2009** *For more information, see "Documentation of the Planning Process", in the Local Multi-Hazard Mitigation Planning Guidance, Page 26-28.*		

4. Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process* ***shall*** *include:*

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): *[The plan* ***shall*** *document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

	Location in the		SCORE	
		Revision Received: The City of Greer submitted a copy of the newspaper advertisement that announces the public hearing for the formal approval and adoption of the Plan. This hearing occurred at the Greer City Hall on August 10, 2010.		X
D. **Does the new or updated plan discuss the** opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?	p. 1-7 p. 1-9	p. 1-7 – Lists the members of the Mitigation Advisory Committee (MAC) which includes agencies, business, and a Citizen At Large. p. 1-9 – Lists members that reviewed and commented on the February 18th MAC meeting which includes Non-Profits and neighboring communities. FEMA Reviewer concurs with State Reviewer's comments.		X
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	4-3, 7-4 Pages 4-3 to 4-9	p. 4-3 – The plan lists numerous plans, policies, and programs, yet does not tell of how they were incorporated into the Hazard Mitigation Plan p. 7.4 – States that the Hazard Mitigation Plan builds on the momentum developed through previous and related planning efforts: • Greer Comprehensive Plan • City Code of Regulations • Flood Management Regulations • Fire Code		

4. Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process* ***shall*** *include:*

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): *[The plan* ***shall*** *document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

	Location in the		SCORE	
		• Greer Building Code • Capital Improvement Plans and Budgets • Other plans, regulations, and practices with a mitigation focus **Recommended Revision:** State how, after review, plans, policies, and programs were incorporated into the Hazard Mitigation Plan. It might meet this criteria, yet it appears that the programs are defined without stating how they relate. **p. 4.3 Plan was updated to meet this criteria** The Plan describes the review & incorporation, if appropriate of the following existing plans: • Greer Comprehensive Plan • City Code of Regulations • Flood Management Regulations • Fire Code • Greer Building Code • Capital Improvement Plans and Budgets • Other plans, regulations, and practices with a mitigation focus		X
F. Does the updated plan document how the planning team reviewed and analyzed each section of the plan and whether each section was revised as part of the update process?	N/A	This is a new plan. FEMA Reviewer concurs with State Reviewer's comments.		N/A
		SUMMARY SCORE		X

RISK ASSESSMENT: *§201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

5. Identifying Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment **shall** include a] description of the type … of all natural hazards that can affect the jurisdiction.*

Element	Location in the Plan (section or annex and page #)		SCORE N	SCORE S
A. Does the **new or updated** plan include **a description** of the types of **all natural hazards** that affect the jurisdiction?	Section 3 Page 3-1 (List) Pages 3-2 – 3-20	Plan Identifies 10 natural hazards and provides a description of each: • Severe Winter Weather/Ice Storm • Severe Weather/Thunderstorm • Dam/Levee Failure • Flooding • Hail • Lightning • Drought/Extreme Heat • Tornado • Wildfire • Earthquake It later provides a description of the man-made hazards that affect the area. FEMA Reviewer concurs with State Reviewer's comments.		X
		SUMMARY SCORE		X

6. Profiling Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment **shall** include a] description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the risk assessment identify the **location** (*i.e.*, geographic area affected) of each natural hazard addressed in the **new or updated** plan?	Section 3 Section 5	p. 5-1 – The following hazards were deemed to affect the entirety of the region, in turn, affecting the City of Greer: • **Severe Winter Weather/Ice Storm** • **Severe Weather/Thunderstorm** • **Hail** • **Lightning** • **Tornado** • **Wildfire** **Plan was updated to meet this recommendation** --- • **Flooding** p. 5-6 – Provides narrative Map 2 – Provides localized flooding within the City of Greer Map 8 – The plan provides a map indicating the floodplains and the parts of the city affected by flooding • **Earthquake** p. 3-18 – Plan provides narrative from the Greenville County Hazard Mitigation Plan that states the entire County of Greenville is at risk from earthquakes although the threat is minimal. • **Drought/Extreme Heat** p. 3-13 – Figure 1 – Figure shows that the entire Northwest portion of South Carolina is affected by drought. • **Dam/Levee Failure** p. 3-7 – Plan lists three dam locations identified as high hazard dams. They are the Lake Robinson Dam, Lake Cunningham Dam, and the Moon Lake Dam. FEMA Reviewer concurs with State Reviewer's comments. ***NOTE***: State Reviewer commented in red: P 5-2 wildfire is missing, found it to be the first hazard listed.		**X**

B. Does the risk assessment identify the **extent** (*i.e.*, magnitude or severity) of each hazard addressed in the **new or updated** plan?	Section 3 Table 11 – p. 3-19 Pages 5-1 to 5-12	• Severe Winter Weather/Ice Storm p. 3-2 – Lists a range of winter weather events from extreme cold to blizzards. Later states that blizzards are rare. • Severe Weather/Thunderstorm p. 3-4 – States severe thunderstorm winds occur above 57.5 mph and later explains Microbursts and Macrobursts • Dam/Levee Failure p. 3-6 – States three classifications of dams and later states there have been no historical occurrences of dam failure. • Flooding p. 3-8 – States that 14.5% of the City of Greer is located in a 100-year floodplain • Hail p. 3-11 – Defines hail extent based on diameter of hail • Lightning p. 3-3 – States lightening can reach temperatures of 54,000 degrees Fahrenheit • Drought/Extreme Heat p. 3-13 – States Drought effects are Severe and provides a map. • Tornado p. 3-14 – uses the Enhanced Fujita Scale • Wildfire p. 3-17 – lists different types of fires • Earthquake p. 3-18 – (indicate how severe this hazard can be in the City of Greer) p. 3-19 – Table 11 – Lists the frequency of hazards to the severity of those hazards **Required Revision:** Earthquake – Indicate the range of magnitude or severity that could be experienced **Plan indicates there is no historical data** **Recommended Revision:** Table 11 – Change the "Total" column to read "Severity Total" **Plan was updated to meet this criteria**		

		The new Plan includes forms of extent measurement (e.g. Fujita Tornado Scale) for some of the hazards in general, however, the extent with regards to how it applies to the **City of Greer is not provided.** **REQUIRED:** • The extent (i.e., magnitude or severity) of potential hazard events. Magnitude is a measure of the strength of a hazard event. The magnitude (also referred to as severity) of a given hazard event is usually determined using technical measures specific to the hazard. For each identified hazard, plans **shall** indicate the range of magnitude or severity that could be experienced. Discussion of what the community could anticipate *should* be enhanced with scientific scales, such as the Fujita Scale, TORRO Hail Scale, Richter Scale, Beaufort Wind Scale, Saffir-Simpson Scale, and the Palmer Index or by using quantitative measurements such as: miles per hour, flood depth, inches of rain, fire danger rating, and acres burned. Others classify hazards using terms like high, medium, or low (or major, minor, minimum). The plan **must** clearly define any classification methods used to illustrate extent. **Appendix 7 – provides information about the Modified Mercallie Scale of Earthquake Intensity** **The city of Greer is a single jurisdiction plan. All hazards identified in this plan were identified due to the jurisdiction's susceptibility to the hazard.** *For more information, see "Profiling Hazards", in the Local Multi-Hazard Mitigation Planning Guidance, Pages 32 - 35.* ***Revision made to meet this requirement.***		***X***
C. Does the plan provide information on **previous occurrences** of each hazard addressed in the **new or updated** plan?	Section 3 Pages 3-1 to 3-20 Appendix 3	Appendix 3 identifies previous occurrences for 8 of the 10 hazards omitting Earthquake and Dam Levee Failure **Required Revisions:** Include historical data for Earthquake and Dam/Levee Failure. If no data is available it must be stated in the narrative. **Plan was updated to meet this criteria** FEMA Reviewer concurs with State Reviewer's comments.		**X**

D. Does the plan include the **probability of future events** (*i.e.*, chance of occurrence) for each hazard addressed in the **new or updated** plan?	3-19, Table 11 Pages 5-1 to 5-12 Page 3-20, Table 12	Table 11 – Assigns a frequency rating to all 10 hazards based on a 1-10 scale with 1=High and 10=Low **Recommended Revisions:** Define "high" and "low". Is High an occurrence of 5 events or more? Is Low an occurrence of once every 100 years? 5-5 – Flooding The new Plan provided probability of future events in Table 12 with scoring going from Highly Likely to Unlikely. Highly Likely being "Near 100% probability in the next year" and Unlikely being "Less than 1% probability in the next year, or less than one chance in the next 100 years."		X
		SUMMARY SCORE		X

7. Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** plan include an **overall summary** description of the jurisdiction's **vulnerability** to each hazard?	p. 3-19 p. 5-2 Appendix 4 Pages 5-1 to 5-12 Pages 5-1 to 5-2 Tables 12 & 13	**p. 3-19 – Table 11 gives a hazard ranking per hazard for the jurisdiction.** **p. 5-2 – Table 12 lists the type, number, and value of property within the City of Greer.** **Recommended Revisions:** • **Table 11 – Assign a percentage to the high/low scale so that we know how much it will cost if one of these hazards happen.** • **Table 12 must indicate all hazards or state why certain hazards do not affect property within the City of Greer** **Plan was updated to meet this recommendation** The new Plan provides an overall summary description of the jurisdiction's vulnerability to each hazard. An overview of the community's vulnerability is a summary of the hazard's impact on the community and its vulnerable structures. The plan summary included, by type of hazard, a general description of the types of structures affected by the hazards as depicted on Tables 12 & 13.		X
B. Does the **new or updated** plan address the **impact** of each hazard on the jurisdiction?	p. 3-19 p. 5-2 Appendix 4 Pages 5-1 to 5-12	**p. 3-19 – Table 11 gives a hazard ranking per hazard for the jurisdiction.** **p. 5-2 – Table 12 lists the type, number, and value of property within the City of Greer.** **Recommended Revisions:** • **Table 11 – Assign a percentage to the high/low scale so that we know how much it will cost if one of these hazards happen.** • **Table 12 must indicate all hazards or state why certain hazards do not affect property within the City of Greer**		

	Appendix 4, Page 1; Appendix 6, Page 1 -5.	**Plan was updated to meet this recommendation** The new Plan addresses the impact of each hazard on the jurisdiction in a table format showing each hazard by property value. Additional tables show the critical facilities in a high-low ranking.		X
		SUMMARY SCORE		X

8. Assessing Vulnerability: Addressing Repetitive Loss Properties

Requirement §201.6(c)(2)(ii): *[The risk assessment]* ***must*** *also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the new or updated plan describe vulnerability in terms of the types and numbers of *repetitive loss properties* located in the identified hazard areas?	p. 5-9	**Lisa Jones with SCDNR can provide this information. (jonesls@dnr.sc.gov)** **Required Revisions:** The Plan must describe vulnerability in terms of the types (residential/commercial) and numbers of repetitive loss properties located in the identified hazard areas. If there are no repetitive loss properties that must be stated. **Plan was updated to meet this criteria** The new Plan states: "There are currently no repetitive loss structures in the City of Greer."		X
		SUMMARY SCORE		X

9. Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): *The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area … .*

Element	**Location in the Plan** (section or annex and page #)	**Reviewer's Comments**	SCORE N	SCORE S
A. Does the **new or updated** plan describe vulnerability in terms of the **types and numbers** of **existing** buildings, infrastructure, and critical facilities located in the identified hazard areas?	Pages 5-1 to 5-12 Appendix 6 & 7	p. 5-11 – Table 21 – states the existing vulnerability within the hazard area p. 5-13 – Table 23 – lists current critical facilities Map 4-1 – shows location of critical facilities Appendix 7 – provides numerous maps regarding critical facility locations The new Plan provides a table which provided types and infrastructure and critical facilities located in the identified hazard areas. Additionally, maps depict where the critical facilities are located.		X
B. Does the **new or updated** plan describe vulnerability in terms of the **types and numbers** of **future** buildings, infrastructure, and critical facilities located in the identified hazard areas?	Pages 5-4 to 5-6, pages 5-8 to 5-12	p. 5-12 – Table 22 – states the estimated future vulnerability within the hazard area. **Required Revisions:** Indicate whether or not any future Critical Facilities are expected **Plan was updated to meet this criteria** FEMA Reviewer concurs with State Reviewer's comments.		X
		SUMMARY SCORE		X

10. Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): *[The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate … .*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** plan estimate **potential dollar losses** to vulnerable structures?	Pages 5-1 to 5-12	p. 5-11 – Table 21 – states the existing vulnerability within the hazard area p. 5-13 – Table 23 – lists current critical facilities		
	Appendix 4; Page 5-8, Table 16	The new Plan addresses the impact of each hazard on the jurisdiction in a table format showing each hazard by property value. Table 16 provides information relevant to Flood prone Structures; shown by type of structure and value.		X
B. Does the **new or updated** plan describe the **methodology** used to prepare the estimate?	Pages 5-1 to 5-2	Plan states in the narrative where the information was gathered and the hazard area.		
	Page 5-5	The new Plan describes the methodology used to prepare the estimate.		X
		SUMMARY S		X

11. Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): *[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** plan describe land uses and development trends?	Pages 5-1 to 5-12	p. 5-11 – Table 21 – states the existing vulnerability within the hazard area based on land use p. 5-13 – Table 22 – lists future development trends based on land use		
	Page 5-2	The new Plan provides land uses in table format; Table 13 covers City of Greer Existing Land Use information.		X
		SUMMARY S		X

12. Multi-Jurisdictional Risk Assessment

Requirement §201.6(c)(2)(iii): *For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the **new or updated** plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?	**N/A**	This is a Single Jurisdictional Plan.	**N/A**	**N/A**
		SUMMARY SCORE	**N/A**	**N/A**

MITIGATION STRATEGY: *§201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

13. Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy **shall** include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A Does the **new or updated** plan include a description of mitigation **goals** to reduce or avoid long-term vulnerabilities to the identified hazards?	6-1 Pages 6-1 to 6-11	Plan lists 9 Goals **Recommended Revisions:** Number Goals to correspond with Actions **Plan was updated to meet this recommendation** The new Plan includes a description of the following 9 mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards: 1. Saving lives and reducing injuries; 2. Preventing or reducing property damage and reducing economic losses; 3. Minimizing social dislocation and stress and protecting mental health; 4. Maintaining critical facilities in functional order; 5. Protecting infrastructure from damage; 6. Providing options for political leaders regarding hazard reduction; 7. Fulfilling Federal and State requirements for receipt of future disaster recovery and hazard mitigation assistance; 8. Improving inter-jurisdictional cooperation and coordination, especially regarding the reduction of natural hazard impacts; 9. Increasing local awareness regarding threats associated with natural and manmade hazards.		X
		SUMMARY SCORE		X

14. Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): *[The mitigation strategy **shall** include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.*

Element	Location in the **Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** plan identify and analyze a **comprehensive range** of specific mitigation actions and projects for each hazard?	6-3 – 6-11	Plan lists a comprehensive range of actions to address each goal **Required Revisions:** Include actions that address each Hazard identified in the plan. Include: Severe Weather/Thunderstorms Hail Earthquake Drought Dam/Levee Failure **Plan was updated to meet this criteria**		
	6-4 - - 6-12	FEMA Reviewer concurs with State Reviewer's comments.		X
B Do the identified actions and projects address reducing the effects of hazards on **new** buildings and infrastructure?	Pages 6-6 and 6-7	p. 6-6 – Review existing/develop new/enforce building codes to mitigate potential economic and human losses during disasters as deemed necessary The new Plan identifies actions and projects that address reducing the effects of hazards on new buildings and infrastructure including but not limited to the following: • Review existing/develop new/enforce building codes to mitigate potential economic and human losses during disasters as deemed necessary.		X
C. Do the identified actions and projects address reducing the effects of hazards on **existing** buildings and infrastructure?	Pages 6-6 to 6-7	p. 6-6 – Review existing/develop new/enforce building codes to mitigate potential economic and human losses during disasters as deemed necessary		X

		The new Plan identifies actions and projects that address reducing the effects of hazards on existing buildings and infrastructure including but not limited to the following: • Map and inventory all flood prone structures and develop priority list for elevation/retrofitting or acquisition based on cost/benefit analysis and overall feasibility.		
		SUMMARY SCORE		X

15. Identification and Analysis of Mitigation Actions: National Flood Insurance Program (NFIP) Compliance

Requirement: §201.6(c)(3)(ii): *[The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and contin1ued compliance with NFIP requirements, as appropriate.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the new or updated plan describe the jurisdiction (s) participation in the NFIP?	p. 4-3	**Required Revision:** The plan must describe the City of Greer's participation in the NFIP. **p. 4-3 Plan was updated to meet this criteria** FEMA Reviewer concurs with State Reviewer's comments.		X
B. Does the mitigation strategy identify, analyze and prioritize actions related to continued compliance with the NFIP?	p. 6-3	**Required Revision:** The plan must describe how the City of Greer's prioritized mitigation actions based on continued compliance with the NFIP. **p. 6-3 Plan has been updated to meet this criteria** The mitigation strategy with the new Plan identifies, analyzes and prioritizes actions related to continued compliance with the NFIP, including: • Maintain map of floodplain and floodprone areas on city website and at building inspection offices.		X
		SUMMARY SCORE		X

16. Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): *[The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** mitigation strategy include how the actions are **prioritized**? (For example, is there a discussion of the process and criteria used?)	6-2 This is mentioned on 6-2 but may needs a little work	Plan prioritizes each action as either "high", "medium", or "low". **Required Revision:** The plan must identify how they were prioritized and what criteria was used. **p. 6-3 Plan has been updated to meet this criteria** FEMA Reviewer concurs with State Reviewer's comments.		X
B. Does the **new or updated** mitigation strategy address how the actions will be implemented and administered, including the responsible department, existing and potential resources and the timeframe to complete each action?	6-2 Pages 6-3 to 6-11 Page 6-2 – 6-12	The plan provides excellent mitigation actions. **Required Revision:** The plan must include an estimated timeframe to complete each action. **p. 6-3 Plan has been updated to meet this criteria** Each action or project included in the new Plan identifies a timeline for implementation, responsible party, potential funding sources and priority.		X
C. Does the **new or updated** prioritization process include an emphasis on the use of a **cost-benefit review** to maximize benefits?	7-1 to 7-2 This needs to be addressed further	**Required Revision:** The plan must describe how the City of Greer's prioritized mitigation actions based on a cost-benefit review. How did the City of Greer weigh costs against benefits in the prioritization of actions? **p. 6-3 Plan has been updated to meet this criteria** The new Plan includes a prioritization process which emphasizes the use of a cost-benefit review to maximize benefits.		X
D. Does the **updated** plan identify the completed, deleted or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (*i.e.*, deferred), does the updated plan describe why no changes occurred?	N/A	This is a Single Jurisdictional Plan. FEMA Reviewer concurs with State Reviewer's comments.	N/A	N/A
		SUMMARY SCORE		X

17. Multi-Jurisdictional Mitigation Actions

Requirement §201.6(c)(3)(iv): *For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A Does the **new or updated** plan include identifiable **action items** for each jurisdiction requesting FEMA approval of the plan?	N/A	This is a Single Jurisdictional Plan. FEMA Reviewer concurs with State Reviewer's comments.	N/A	N/A
B. Does the **updated** plan identify the completed, deleted or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (*i.e.*, deferred), does the updated plan describe why no changes occurred?	N/A	This is a Single Jurisdictional Plan. FEMA Reviewer concurs with State Reviewer's comments.	N/A	N/A
		SUMMARY SCORE	N/A	N/A

PLAN MAINTENANCE PROCESS

18. Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): *[The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** plan describe the method and schedule for **monitoring** the plan, including the responsible department?	Pages 7-2 to 7-4	p. 7-3 – Plan states that in order to track progress and update the mitigation strategies identified in the policy section, the City will revisit the plan on a bi-annual basis and after a hazard event. It further states that the City of Greer Fire Chief is responsible for initiating this review. FEMA Reviewer concurs with State Reviewers comments.		X
B. Does the **new or updated** plan describe the method and schedule for **evaluating** the plan, including how, when and by whom (*i.e.* the responsible department)?	Pages 7-2 to 7-5	p. 7-3 – Plan states that in order to track progress and update the mitigation strategies identified in the policy section,		

		the City will revisit the plan on a bi-annual basis and after a hazard event. It further states that the City of Greer Fire Chief is responsible for initiating this review.		
	Page 7-3 – 7-4	Evaluation of the new Plan will be overseen by the MAC using the following process: • A representative from the responsible office identified in each mitigation action will be responsible for tracking and reporting on a bi-annual basis to the MAC on project status and provide input on whether the project as implemented meets the defined objectives and is likely to be successful in reducing vulnerabilities. • If the project does not meet identified objectives, the MAC will determine what additional measures may be implemented and an assigned individual will be responsible for defining project scope, implementing the project, monitoring success of the project, and making any required modifications to the plan.		X
C. Does the **new or updated** plan describe the method and schedule for **updating** the plan within the five-year cycle?	Pages 7-2 to 7-4	This monitoring and updating will take place through a formal review by the MAC twice annually, and a five-year written update to be submitted to the SCEMD and FEMA Region IV, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule FEMA Reviewer concurs with State Reviewer's comments.		X
		SUMMARY S		X

19. Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): *[The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** plan identify other local planning mechanisms available for incorporating the mitigation requirements of the mitigation plan?	Page 7-4	The plan lists 6 planning efforts it recommends for implementing projects: • Greer Comprehensive Plan • City Code of Regulations • Flood Management Regulations • Fire Code • Greer Building Code • Capital Improvement Plans and Budgets • Other plans, regulations, and practices with a mitigation focus FEMA Reviewer concurs with State Reviewer's comments.		**X**
B. Does the **new or updated** plan include a process by which the local government will incorporate the mitigation strategy and other information contained in the plan (*e.g.*, risk assessment) into other planning mechanisms, when appropriate?	Page 7-4	Incorporation of Existing Planning Mechanisms **Required Revision:** To meet this requirement, "process" means what will be done. **p. 7.4 Plan was updated to meet this criteria** FEMA Reviewer concurs with State Reviewer's comments.		**X**
C. Does the **updated** plan explain how the local government incorporated the mitigation strategy and other information contained in the plan (*e.g.*, risk assessment) into other planning mechanisms, when appropriate?	Page 7-2 to 7-4	Nope **Required Revision:** To meet this requirement, "how" means what was done. **p. 7.4 Plan was updated to meet this criteria** This is a new Plan this requirement does not apply.		**N/A**
		SUMMARY SCORE		**X**

Continued Public Involvement

Requirement §201.6(c)(4)(iii): *[The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.*

Element	**Location in the Plan** (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the **new or updated** plan explain how **continued public participation** will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)	p. 7-5	Plan states the public will be able to attend public hearings and provide input on a bi-annual plan review basis. It states the plan maintenance and update process will include continued public and stakeholder involvement and input through attendance at designated committee meetings, web postings, and press releases to local media. FEMA Reviewer concurs with State Reviewer's comments.		X
		SUMMARY SCORE		X

MATRIX A: PROFILING HAZARDS

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each natural hazard that can affect the jurisdiction. **Completing the matrix is not required**.

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each** applicable **hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Location		B. Extent		C. Previous Occurrences		D. Probability of Future Events	
	Yes	N	S	N	S	N	S	N	S
Avalanche	☐	☐	☐	☐	☐	☐	☐	☐	☐
Coastal Erosion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Coastal Storm	☐	☐	☐	☐	☐	☐	☐	☐	☐
Dam Failure	☐	☐	☐	☐	☐	☐	☐	☐	☐
Drought	☐	☐	☐	☐	☐	☐	☐	☐	☐
Earthquake	☐	☐	☐	☐	☐	☐	☐	☐	☐
Expansive Soils	☐	☐	☐	☐	☐	☐	☐	☐	☐
Levee Failure	☐	☐	☐	☐	☐	☐	☐	☐	☐
Flood	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hailstorm	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hurricane	☐	☐	☐	☐	☐	☐	☐	☐	☐
Land Subsidence	☐	☐	☐	☐	☐	☐	☐	☐	☐
Landslide	☐	☐	☐	☐	☐	☐	☐	☐	☐
Severe Winter Storm	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tornado	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tsunami	☐	☐	☐	☐	☐	☐	☐	☐	☐
Volcano	☐	☐	☐	☐	☐	☐	☐	☐	☐
Wildfire	☐	☐	☐	☐	☐	☐	☐	☐	☐
Windstorm	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐	☐	☐	☐

To check boxes, double click on the box and change the default value to "checked."

Legend:

§201.6(c)(2)(i) Profiling Hazards
A. Does the risk assessment identify the location (*i.e.*, geographic area affected) of each hazard addressed in the **new or updated** plan?
B. Does the risk assessment identify the extent (*i.e.*, magnitude or severity) of each hazard addressed in the **new or updated** plan?
C. Does the plan provide information on previous occurrences of each natural hazard addressed in the **new or updated** plan?
D. Does the plan include the probability of future events (*i.e.*, chance of occurrence) for each hazard addressed in the plan?

MATRIX B: ASSESSING VULNERABILITY

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that the new or updated plan addresses each requirement. **Completing the matrix is not required**.

*Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each **applicable** hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk. Note: Receiving an N in the shaded columns will not preclude the plan from passing.*

To check boxes, double click on the box and change the default value to "checked."

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	§201.6(c)(2)(ii) Assessing Vulnerability: Overview					§201.6(c)(2)(ii) Assessing Vulnerability: Identifying Structures					§201.6(c)(2)(ii) Assessing Vulnerability: Estimating Potential Losses					
		A. Overall Summary Description of Vulnerability		B. Hazard Impact			A. Types and Number of Existing Structures in Hazard Area (Estimate)		B. Types and Number of Future Structures in Hazard Area (Estimate)			A. Loss Estimate		B. Methodology			
	Yes	N	S	N	S		N	S	N	S		N	S	N	S		
Avalanche	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Coastal Erosion	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Coastal Storm	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Dam Failure	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Drought	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Earthquake	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Expansive Soils	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Levee Failure	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Flood	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Hailstorm	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Hurricane	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Land Subsidence	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Landslide	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Severe Winter Storm	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Tornado	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Tsunami	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Volcano	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Wildfire	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Windstorm	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Other _____	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Other _____	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		
Other _____	☐	☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐		

Legend:

§201.6(c)(2)(ii) Assessing Vulnerability: Overview

A. Does the **new or updated** plan include an overall summary description of the jurisdiction's vulnerability to each hazard?

B. Does the **new or updated** plan address the impact of each hazard on the jurisdiction?

§201.6(c)(2)(ii)(A) Assessing Vulnerability: Identifying Structures

A. Does the **new or updated** plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?

B. Does the **new or updated** plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(B) Assessing Vulnerability: Estimating Potential Losses

A. Does the **new or updated** plan estimate potential dollar losses to vulnerable structures?

B. Does the **new or updated** plan describe the methodology used to prepare the estimate?

MATRIX C: IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure consideration of a range of actions for each hazard. **Completing the matrix is not required.**

*Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each **applicable** hazard. An "N" for any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Comprehensive Range of Actions and Projects	
	Yes	N	S
Avalanche	☐	☐	☐
Coastal Erosion	☐	☐	☐
Coastal Storm	☐	☐	☐
Dam Failure	☐	☐	☐
Drought	☐	☐	☐
Earthquake	☐	☐	☐
Expansive Soils	☐	☐	☐
Levee Failure	☐	☐	☐
Flood	☐	☐	☐
Hailstorm	☐	☐	☐
Hurricane	☐	☐	☐
Land Subsidence	☐	☐	☐
Landslide	☐	☐	☐
Severe Winter Storm	☐	☐	☐
Tornado	☐	☐	☐
Tsunami	☐	☐	☐
Volcano	☐	☐	☐
Wildfire	☐	☐	☐
Windstorm	☐	☐	☐
Other _____	☐	☐	☐
Other _____	☐	☐	☐
Other _____	☐	☐	☐

To check boxes, double click on the box and change the default value to "checked."

Legend:
§201.6(c)(3)(ii) Identification and Analysis of Mitigation Actions
A. Does the **new or updated** plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?

APPENDIX 2

ADOPTION RESOLUTION/AFFIDAVIT OF PUBLICATION

RESOLUTION NUMBER 10-2010

A RESOLUTION ADOPTING THE CITY OF GREER HAZARD MITIGATION PLAN

WHEREAS, the citizens and property within the City of Greer are subject to the effects of natural hazards and man-made hazard events that pose threats to lives and cause damages to property, and with the knowledge and experience that certain areas, i.e., flood hazard areas, are particularly susceptible to flood hazard events; and

WHEREAS, the City desires to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the Legislature of the State of South Carolina have delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry; and

WHEREAS, the City of Greer has been charged by the Federal Emergency Management Agency and the State of South Carolina with the responsibility of developing a mitigation plan aimed at reducing the community's vulnerability to natural hazards; and

WHEREAS, it is the intent of the City Council of the City of Greer to fulfill this obligation in order that the city will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the city; and

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local governments must develop an All-Hazards Mitigation Plan in order to receive future Hazard Mitigation Grant Program Funds; and

NOW, THEREFORE, be it resolved that the City Council of the City of Greer hereby:

1. Adopts the City of Greer Hazard Mitigation Plan; and

2. Vests the City Fire Chief with the responsibility, authority, and the means to:

    (a) Inform all concerned parties of this action.
    (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of issues relating to threats posed by natural hazards.

3. Agrees to take such other official action as may be reasonably necessary to carry out the strategies outlined within the 2010 City of Greer Hazard Mitigation Plan.

PASSED, ADOPTED and APPROVED by the Council of the City of Greer this 10th day of August, 2010.

CITY OF GREER, SOUTH CAROLINA

Rick Danner, Mayor

ATTEST:

Tammela Duncan, Municipal Clerk

(SEAL)

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The City of Greer will hold a Public Hearing at 6:30 p.m. on Tuesday, August 10, 2010 at Greer City Hall, Council Chambers located at 301 East Poinsett Street in Greer on the following:

Subject: (1) City of Greer Hazard Mitigation Plan (A printed copy of the plan is available for review at Greer City Hall in the office of the Municipal Clerk; a digital copy is available at ww.cityofgreer.org)

(2) 18-2010 AN ORDINANCE ADOPTED TO PROVIDE FOR THE CLOSURE OF A PORTION OF ROYCE STREET AND CONVEYANCE OF THE INTEREST OF THE CITY OF GREER IN SAID STREET TO J. RANDALL HENDERSON AND FREEBIRD DEVELOPMENT CO., LLC BY QUIT CLAIM DEED

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APPENDIX 3

HAZARD IDENTIFICATION DATA

For corresponding discussion of hazards in Section 3, see the following pages:

1 Severe Winter Weather/Ice Storm, pages 3-2 - 3-3
2 Severe Weather/Thunderstorm, pages 3-3 - 3-5
3 Dam/Levee Failure, pages 3-6 - 3-7
4 Flooding, pages 3-7 - 3-9
5 Hail, pages 3-9 - 3-11
6 Lightning, pages 3-11 - 3-12
7 Drought/Extreme Heat 3-12 - 3-14
8 Tornadoes, pages 3-14 - 3-16
9 Wildfires, pages 3-16 - 3-18
10 Earthquakes, pages 3-18 - 3-19

Date	Hazard Type	Injuries	Fatalities	Property Damage
3/2/1960	Severe Winter Weather/Ice Storm	0.00	1.20	$5,554.00
3/9/1960	Severe Winter Weather/Ice Storm	0.00	0.00	$2,856.00
1/25/1961	Severe Winter Weather/Ice Storm	0.00	0.00	$2,172.00
12/31/1963	Severe Winter Weather/Ice Storm	1.14	0.00	$21,738.00
1/26/1966	Severe Winter Weather/Ice Storm	0.00	0.06	$28,570.00
1/26/1966	Severe Winter Weather/Ice Storm	0.00	0.00	$27,778.00
1/29/1966	Severe Winter Weather/Ice Storm	0.00	0.30	$0.00
1/9/1968	Severe Winter Weather/Ice Storm	0.00	0.00	$31,250.00
2/15/1969	Severe Winter Weather/Ice Storm	0.00	0.00	$21,276.00
1/8/1970	Severe Winter Weather/Ice Storm	0.00	2.00	$220.00
11/24/1970	Severe Winter Weather/Ice Storm	0.00	0.00	$2.00
3/25/1971	Severe Winter Weather/Ice Storm	1.33	0.80	$55,556.00
12/3/1971	Severe Winter Weather/Ice Storm	0.00	0.00	$21,740.00
4/1/1972	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
1/7/1973	Severe Winter Weather/Ice Storm	0.00	0.00	$21,740.00
2/9/1973	Severe Winter Weather/Ice Storm	0.00	0.20	$217,392.00
4/11/1973	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
3/18/1974	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
10/3/1974	Severe Winter Weather/Ice Storm	0.00	0.00	$2,564.00
2/3/1975	Severe Winter Weather/Ice Storm	0.00	0.00	$5,556.00
3/2/1975	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
2/6/1979	Severe Winter Weather/Ice Storm	0.00	0.00	$333,334.00
2/17/1979	Severe Winter Weather/Ice Storm	0.00	0.00	$21,740.00
2/5/1980	Severe Winter Weather/Ice Storm	0.00	0.00	$21,740.00
2/9/1980	Severe Winter Weather/Ice Storm	0.00	0.00	$16,666.00
3/1/1980	Severe Winter Weather/Ice Storm	0.00	0.22	$2,174.00
12/31/1981	Severe Winter Weather/Ice Storm	0.00	0.00	$16,666.00
1/11/1982	Severe Winter Weather/Ice Storm	1.60	0.00	$220.00
1/12/1982	Severe Winter Weather/Ice Storm	0.00	0.00	$3,572.00
2/26/1982	Severe Winter Weather/Ice Storm	0.00	0.00	$2,174.00
3/27/1982	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
4/7/1982	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
1/21/1983	Severe Winter Weather/Ice Storm	0.00	0.00	$2,174.00
2/5/1983	Severe Winter Weather/Ice Storm	0.00	0.00	$16,666.00
4/17/1983	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
12/25/1983	Severe Winter Weather/Ice Storm	0.00	1.20	$21,740.00
12/30/1983	Severe Winter Weather/Ice Storm	0.00	0.08	$21,740.00
1/13/1984	Severe Winter Weather/Ice Storm	0.00	0.00	$3,572.00
1/20/1985	Severe Winter Weather/Ice Storm	0.00	0.66	$21,740.00
2/11/1985	Severe Winter Weather/Ice Storm	0.00	0.00	$2,174.00
3/19/1985	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
4/10/1985	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
1/27/1986	Severe Winter Weather/Ice Storm	0.00	0.00	$2,174.00
3/22/1986	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
4/23/1986	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
1/25/1987	Severe Winter Weather/Ice Storm	0.00	0.00	$16,666.00

2/16/1987	Severe Winter Weather/Ice Storm	0.00	0.00	$5,264.00
4/1/1987	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
1/7/1988	Severe Winter Weather/Ice Storm	0.00	0.00	$21,740.00
3/16/1988	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
1/8/1989	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
2/17/1989	Severe Winter Weather/Ice Storm	0.00	0.00	$21,740.00
2/23/1989	Severe Winter Weather/Ice Storm	0.00	0.00	$2,174.00
4/12/1989	Severe Winter Weather/Ice Storm	0.00	0.00	$5,264.00
5/8/1989	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
12/9/1989	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
12/21/1989	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
12/22/1989	Severe Winter Weather/Ice Storm	0.14	0.26	$217,392.00
12/22/1989	Severe Winter Weather/Ice Storm	4.00	2.00	$28,572.00
12/22/1989	Severe Winter Weather/Ice Storm	0.20	0.30	$21,740.00
3/21/1990	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
1/16/1991	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
3/19/1992	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
12/10/1992	Severe Winter Weather/Ice Storm	0.00	0.00	$33,334.00
12/27/1992	Severe Winter Weather/Ice Storm	0.00	0.00	$37,038.00
3/13/1993	Severe Winter Weather/Ice Storm	0.00	0.00	$62,500.00
3/15/1993	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
1/22/1994	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
2/11/1994	Severe Winter Weather/Ice Storm	0.00	0.00	$52,632.00
1/6/1995	Severe Winter Weather/Ice Storm	0.00	0.00	$20,000.00
2/4/1995	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
2/12/1995	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
12/27/1995	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
1/6/1996	Severe Winter Weather/Ice Storm	0.00	0.00	$14,286.00
1/7/1996	Severe Winter Weather/Ice Storm	0.00	0.00	$14,286.00
1/12/1996	Severe Winter Weather/Ice Storm	0.00	2.00	$0.00
3/8/1996	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
12/25/1996	Severe Winter Weather/Ice Storm	0.00	2.00	$0.00
1/9/1997	Severe Winter Weather/Ice Storm	0.00	0.00	$80,000.00
2/21/1998	Severe Winter Weather/Ice Storm	0.00	1.00	$0.00
1/2/1999	Severe Winter Weather/Ice Storm	0.00	0.00	$4,000,000.00
12/4/2002	Severe Winter Weather/Ice Storm	0.00	0.00	$18,181,818.00
2/26/2004	Severe Winter Weather/Ice Storm	0.00	0.00	$475,000.00
12/15/2005	Severe Winter Weather/Ice Storm	0.00	0.00	$600,000.00
4/8/2007	Severe Winter Weather/Ice Storm	0.00	0.00	$0.00
Total		**8.41**	**25.28**	**$24,887,676.00**

Date	Hazard Type	Injuries	Fatalities	Property Damage
2/24/1961	Severe Weather/Thunder Storm	0.00	0.00	$286.00
6/20/1961	Severe Weather/Thunder Storm	0.00	0.00	$16,666.67
3/5/1963	Severe Weather/Thunder Storm	0.00	0.34	$1,666.00
3/12/1963	Severe Weather/Thunder Storm	0.00	0.00	$1,666.00
4/6/1964	Severe Weather/Thunder Storm	0.00	0.00	$166,666.00
10/4/1964	Severe Weather/Thunder Storm	0.00	0.04	$21,740.00
10/15/1964	Severe Weather/Thunder Storm	0.00	0.00	$0.00
6/29/1966	Severe Weather/Thunder Storm	0.00	0.10	$5,000.00
8/20/1967	Severe Weather/Thunder Storm	0.00	0.00	$21,740.00
1/9/1968	Severe Weather/Thunder Storm	0.00	0.00	$31,200.00
6/23/1969	Severe Weather/Thunder Storm	0.00	1.00	$0.00
9/19/1969	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
7/8/1970	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
9/19/1970	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
10/15/1971	Severe Weather/Thunder Storm	0.00	0.00	$16,666.67
12/3/1971	Severe Weather/Thunder Storm	0.00	0.00	$21,740.00
6/6/1972	Severe Weather/Thunder Storm	0.00	0.00	$2,500.00
8/7/1972	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
5/20/1973	Severe Weather/Thunder Storm	0.00	0.00	$480.00
9/13/1973	Severe Weather/Thunder Storm	0.00	0.00	$833,333.33
3/12/1975	Severe Weather/Thunder Storm	0.00	0.00	$2,174.00
8/27/1975	Severe Weather/Thunder Storm	0.05	0.00	$2,600.00
9/18/1975	Severe Weather/Thunder Storm	1.50	0.50	$250,000.00
8/28/1976	Severe Weather/Thunder Storm	0.00	2.00	$5,000.00
10/7/1976	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
10/8/1976	Severe Weather/Thunder Storm	0.33	0.00	$166,666.00
5/5/1977	Severe Weather/Thunder Storm	0.00	0.00	$250.00
11/5/1977	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
6/25/1978	Severe Weather/Thunder Storm	0.00	0.00	$25,000.00
8/6/1978	Severe Weather/Thunder Storm	0.00	0.00	$250,000.00
3/23/1979	Severe Weather/Thunder Storm	1.33	0.00	$16,666.67
5/22/1979	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
6/2/1979	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
4/19/1981	Severe Weather/Thunder Storm	0.00	0.00	$10,000.00
6/10/1982	Severe Weather/Thunder Storm	0.40	0.00	$242,000.00
7/29/1982	Severe Weather/Thunder Storm	0.00	1.00	$5,000.00
3/17/1983	Severe Weather/Thunder Storm	0.00	0.00	$21,740.00
12/3/1983	Severe Weather/Thunder Storm	0.00	0.00	$3,846.00
2/27/1984	Severe Weather/Thunder Storm	0.00	0.00	$2,174.00
6/20/1984	Severe Weather/Thunder Storm	0.00	0.00	$2,174.00
7/17/1984	Severe Weather/Thunder Storm	0.00	0.00	$100,000.00
7/26/1984	Severe Weather/Thunder Storm	0.14	0.00	$2,174.00
2/11/1985	Severe Weather/Thunder Storm	0.00	0.00	$2,174.00
8/16/1985	Severe Weather/Thunder Storm	0.00	0.00	$12,500.00
8/8/1986	Severe Weather/Thunder Storm	1.00	0.00	$50,000.00
5/16/1988	Severe Weather/Thunder Storm	0.00	0.00	$500.00

5/17/1988	Severe Weather/Thunder Storm	0.00	0.00	$150,000.00
7/16/1988	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
2/17/1989	Severe Weather/Thunder Storm	0.00	0.00	$21,740.00
2/23/1989	Severe Weather/Thunder Storm	0.00	0.00	$2,174.00
4/4/1989	Severe Weather/Thunder Storm	0.00	0.00	$550,000.00
4/27/1989	Severe Weather/Thunder Storm	0.00	0.00	$0.00
6/5/1989	Severe Weather/Thunder Storm	0.00	0.00	$100,000.00
4/10/1990	Severe Weather/Thunder Storm	5.00	0.00	$200,000.00
4/28/1990	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
7/1/1990	Severe Weather/Thunder Storm	0.00	0.00	$100,000.00
6/1/1991	Severe Weather/Thunder Storm	0.00	1.00	$50,000.00
6/9/1992	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
6/21/1992	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
7/21/1992	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
3/31/1993	Severe Weather/Thunder Storm	0.00	0.00	$0.00
7/8/1993	Severe Weather/Thunder Storm	0.00	0.00	$100,000.00
7/19/1993	Severe Weather/Thunder Storm	0.00	0.00	$500,000.00
1/14/1995	Severe Weather/Thunder Storm	0.00	0.00	$6,000.00
3/8/1995	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
5/28/1995	Severe Weather/Thunder Storm	0.00	0.00	$2,000.00
6/9/1995	Severe Weather/Thunder Storm	0.00	0.00	$52,000.00
6/10/1995	Severe Weather/Thunder Storm	0.00	0.00	$25,000.00
7/2/1995	Severe Weather/Thunder Storm	0.00	0.00	$62,000.00
1/19/1996	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
3/15/1996	Severe Weather/Thunder Storm	3.00	1.00	$550,000.00
3/16/1996	Severe Weather/Thunder Storm	0.00	0.00	$15,000.00
4/20/1996	Severe Weather/Thunder Storm	0.00	0.00	$15,000.00
4/26/1996	Severe Weather/Thunder Storm	0.00	0.00	$10,000.00
5/24/1996	Severe Weather/Thunder Storm	0.00	0.00	$60,000.00
6/4/1996	Severe Weather/Thunder Storm	0.00	0.00	$5,000.00
6/7/1996	Severe Weather/Thunder Storm	0.00	0.00	$30,000.00
6/20/1996	Severe Weather/Thunder Storm	0.00	1.00	$18,000.00
7/14/1996	Severe Weather/Thunder Storm	0.00	0.00	$15,000.00
7/17/1996	Severe Weather/Thunder Storm	0.00	0.00	$30,000.00
7/26/1996	Severe Weather/Thunder Storm	0.00	0.00	$0.00
8/24/1996	Severe Weather/Thunder Storm	0.00	0.00	$10,000.00
9/7/1996	Severe Weather/Thunder Storm	0.00	0.00	$20,000.00
6/14/1997	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
7/24/1997	Severe Weather/Thunder Storm	0.00	0.00	$25,000.00
7/28/1997	Severe Weather/Thunder Storm	0.00	0.00	$5,000.00
4/17/1998	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
5/27/1998	Severe Weather/Thunder Storm	3.00	0.00	$0.00
6/19/1998	Severe Weather/Thunder Storm	0.00	0.00	$20,000.00
6/21/1998	Severe Weather/Thunder Storm	0.00	0.00	$0.00
7/20/1998	Severe Weather/Thunder Storm	0.00	0.00	$0.00
7/22/1998	Severe Weather/Thunder Storm	0.00	0.00	$0.00
9/7/1998	Severe Weather/Thunder Storm	0.00	0.00	$40,000.00

4/27/1999	Severe Weather/Thunder Storm	0.00	0.00	$0.00
6/10/1999	Severe Weather/Thunder Storm	0.00	0.00	$5,000.00
7/6/1999	Severe Weather/Thunder Storm	0.00	0.00	$10,000.00
7/10/1999	Severe Weather/Thunder Storm	0.00	0.00	$0.00
7/27/1999	Severe Weather/Thunder Storm	0.00	0.00	$0.00
8/1/1999	Severe Weather/Thunder Storm	0.00	0.00	$65,000.00
8/20/1999	Severe Weather/Thunder Storm	0.00	0.00	$5,000.00
2/14/2000	Severe Weather/Thunder Storm	0.00	0.00	$0.00
4/3/2000	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
5/25/2000	Severe Weather/Thunder Storm	2.00	0.00	$0.00
7/22/2000	Severe Weather/Thunder Storm	0.00	0.00	$130,000.00
11/9/2000	Severe Weather/Thunder Storm	0.00	0.00	$5,000.00
8/31/2001	Severe Weather/Thunder Storm	0.00	0.00	$0.00
11/9/2000	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
9/23/2001	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
5/13/2002	Severe Weather/Thunder Storm	0.00	0.00	$23,000.00
6/4/2002	Severe Weather/Thunder Storm	0.00	0.00	$8,000.00
6/4/2002	Severe Weather/Thunder Storm	0.00	0.00	$3,000.00
6/30/2002	Severe Weather/Thunder Storm	0.00	0.00	$10,000.00
7/1/2002	Severe Weather/Thunder Storm	0.00	0.00	$10,000.00
7/3/2002	Severe Weather/Thunder Storm	0.00	0.00	$100,000.00
7/10/2002	Severe Weather/Thunder Storm	0.00	0.00	$10,000.00
7/21/2002	Severe Weather/Thunder Storm	0.00	0.00	$30,000.00
7/30/2002	Severe Weather/Thunder Storm	0.00	0.00	$0.00
8/17/2002	Severe Weather/Thunder Storm	0.00	0.00	$25,000.00
11/11/2002	Severe Weather/Thunder Storm	0.00	0.00	$17,000.00
2/4/2003	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
5/2/2003	Severe Weather/Thunder Storm	0.00	0.00	$156,000.00
5/5/2003	Severe Weather/Thunder Storm	0.00	0.00	$0.00
5/16/2003	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
6/11/2003	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
7/11/2003	Severe Weather/Thunder Storm	0.00	0.00	$50,000.00
7/15/2003	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
7/29/2003	Severe Weather/Thunder Storm	0.00	0.00	$2,000.00
8/1/2003	Severe Weather/Thunder Storm	0.00	0.00	$0.00
8/4/2003	Severe Weather/Thunder Storm	0.00	0.00	$4,000.00
8/16/2003	Severe Weather/Thunder Storm	0.00	0.00	$300,000.00
8/17/2003	Severe Weather/Thunder Storm	0.00	0.00	$4,000.00
11/19/2003	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
7/5/2004	Severe Weather/Thunder Storm	0.00	0.00	$155,000.00
7/11/2004	Severe Weather/Thunder Storm	0.00	0.00	$110,000.00
7/29/2004	Severe Weather/Thunder Storm	0.00	0.00	$5,000.00
8/20/2004	Severe Weather/Thunder Storm	0.00	0.00	$2,000.00
4/22/2005	Severe Weather/Thunder Storm	0.00	0.00	$45,000.00
6/6/2005	Severe Weather/Thunder Storm	0.00	0.00	$1,000.00
7/1/2005	Severe Weather/Thunder Storm	0.00	0.00	$5,000.00
7/7/2005	Severe Weather/Thunder Storm	0.00	0.00	$5,000.00

8/10/2005	Severe Weather/Thunder Storm	0.00	0.00	$10,000.00
10/7/2005	Severe Weather/Thunder Storm	0.00	0.00	$20,000.00
5/26/2006	Severe Weather/Thunder Storm	0.00	0.00	$0.00
8/20/2006	Severe Weather/Thunder Storm	0.00	1.00	$0.00
6/14/2007	Severe Weather/Thunder Storm	0.00	0.00	$8,000,000.00
6/24/2007	Severe Weather/Thunder Storm	0.00	0.00	$0.00
6/25/2007	Severe Weather/Thunder Storm	0.00	0.00	$60,000.00
6/30/2007	Severe Weather/Thunder Storm	0.00	0.00	$3,000.00
3/4/2008	Severe Weather/Thunder Storm	0.00	0.00	$0.00
Total		**17.75**	**8.98**	**$15,206,903.34**

Dam/Levee Failure:

There is no documented history of dam/levee failure for any of the dams located within close proximity to the City of Greer. Thus, no listing of historical occurrences is provided.

Date	Hazard Type	Injuries	Fatalities	Property Damage
3/1/1966	Flooding	0.00	0.00	$1,086.96
2/3/1973	Flooding	0.00	0.00	$1,086.96
3/12/1975	Flooding	0.00	0.00	$1,086.96
9/18/1975	Flooding	1.50	0.50	$250,000.00
5/28/1976	Flooding	2.33	0.67	$166,666.67
10/7/1976	Flooding	0.00	0.00	$50,000.00
10/8/1976	Flooding	0.33	0.00	$83,333.33
10/9/1976	Flooding	0.00	0.00	$10,869.57
11/5/1977	Flooding	0.00	0.00	$25,000.00
1/25/1978	Flooding	0.00	1.00	$10,869.57
1/26/1978	Flooding	0.00	0.00	$1,086.96
8/6/1978	Flooding	0.00	0.00	$125,000.00
3/23/1979	Flooding	1.33	0.00	$16,666.67
6/2/1979	Flooding	0.00	0.00	$50,000.00
3/15/1980	Flooding	0.00	0.00	$1,086.96
8/8/1980	Flooding	0.00	0.00	$1,086.96
3/17/1983	Flooding	0.00	0.00	$10,869.60
12/6/1983	Flooding	0.00	0.00	$1,282.05
2/27/1984	Flooding	0.00	0.00	$1,086.96
7/12/1984	Flooding	2.00	0.00	$50,000.00
7/17/1984	Flooding	0.00	0.00	$50,000.00
7/26/1984	Flooding	0.07	0.00	$2,172.00
8/16/1985	Flooding	0.00	0.00	$6,250.00
4/27/1989	Flooding	0.00	0.00	$50,000.00
6/20/1989	Flooding	0.00	0.00	$50,000.00
3/17/1990	Flooding	0.00	0.00	$50,000.00
10/12/1990	Flooding	0.00	1.00	$550,000.00
7/30/1991	Flooding	0.00	0.00	$50,000.00
1/1/1993	Flooding	0.00	0.00	$10,869.57
2/7/1993	Flooding	0.00	0.00	$500,000.00
5/4/1993	Flooding	0.00	0.00	$0.00
7/19/1993	Flooding	0.00	0.00	$50,000.00
6/5/1994	Flooding	0.00	0.00	$50,000.00
7/18/1994	Flooding	0.00	0.00	$50,000.00
7/28/1994	Flooding	0.00	0.00	$0.00
8/17/1994	Flooding	0.00	0.00	$50,000.00
10/13/1994	Flooding	0.00	0.00	$2,000,000.00
1/14/1995	Flooding	0.00	0.00	$0.00
2/16/1995	Flooding	0.00	0.00	$1,000.00
6/30/1995	Flooding	0.00	1.00	$0.00
7/2/1995	Flooding	0.00	0.00	$62,000.00
8/26/1995	Flooding	0.00	0.00	$1,500,000.00
8/27/1995	Flooding	3.00	1.00	$4,000,000.00
10/4/1995	Flooding	0.00	0.00	$0.00
8/2/1996	Flooding	0.00	0.00	$0.00
2/28/1997	Flooding	0.00	0.00	$0.00

6/14/1997	Flooding	0.00	0.00	$0.00
7/23/1997	Flooding	0.00	0.00	$200,000.00
7/24/1997	Flooding	0.00	0.00	$100,000.00
10/26/1997	Flooding	0.00	0.00	$100,000.00
1/7/1998	Flooding	0.00	0.00	$0.00
2/3/1998	Flooding	0.00	0.00	$0.00
8/14/1998	Flooding	0.00	0.00	$2,500,000.00
8/15/1998	Flooding	0.00	0.00	$500,000.00
10/7/1998	Flooding	0.00	0.00	$0.00
7/7/1999	Flooding	0.00	0.00	$0.00
9/28/1999	Flooding	0.00	0.00	$0.00
10/10/1999	Flooding	0.00	0.00	$0.00
3/20/2000	Flooding	0.00	0.00	$0.00
5/2/2000	Flooding	0.00	0.00	$0.00
7/23/2000	Flooding	0.00	0.00	$0.00
6/30/2002	Flooding	0.00	0.00	$50,000.00
10/16/2002	Flooding	0.00	0.00	$0.00
3/20/2003	Flooding	0.00	0.00	$1,000,000.00
4/18/2003	Flooding	1.00	0.00	$25,000.00
5/22/2003	Flooding	0.00	0.00	$0.00
7/30/2003	Flooding	0.00	0.00	$0.00
8/5/2003	Flooding	0.00	0.00	$20,000.00
8/7/2003	Flooding	0.00	0.00	$10,000.00
8/18/2003	Flooding	0.00	0.00	$0.00
7/17/2004	Flooding	0.00	0.00	$0.00
7/29/2004	Flooding	0.00	0.00	$3,500,000.00
9/7/2004	Flooding	0.00	0.00	$20,000.00
9/9/2004	Flooding	0.00	0.00	$50,000.00
9/27/2004	Flooding	0.00	0.00	$20,000.00
12/10/2004	Flooding	0.00	0.00	$0.00
6/28/2005	Flooding	0.00	0.00	$0.00
3/28/2005	Flooding	0.00	0.00	$0.00
5/20/2005	Flooding	0.00	0.00	$0.00
6/28/2005	Flooding	0.00	0.00	$0.00
7/7/2005	Flooding	0.00	0.00	$1,100,000.00
8/10/2005	Flooding	0.00	0.00	$1,500,000.00
10/7/2005	Flooding	0.00	0.00	$200,000.00
6/26/2006	Flooding	0.00	0.00	$0.00
3/1/2007	Flooding	0.00	0.00	$0.00
Total		**11.56**	**5.17**	**$20,835,457.72**

Date	Hazard Type	Injuries	Fatalities	Property Damage
5/2/1957	Hail	0.00	0.00	$0.00
4/28/1959	Hail	0.00	0.00	$0.00
2/18/1960	Hail	0.00	0.00	$286.00
5/25/1960	Hail	0.00	0.00	$0.00
5/11/1961	Hail	0.00	0.00	$0.00
5/27/1962	Hail	0.00	0.00	$500.00
5/16/1963	Hail	0.00	0.00	$0.00
6/11/1963	Hail	0.00	0.00	$0.00
11/21/1965	Hail	0.00	0.00	$0.00
5/14/1966	Hail	0.00	0.00	$0.00
6/29/1966	Hail	0.00	0.50	$2,500.00
7/15/1966	Hail	2.00	1.00	$50,000.00
6/12/1968	Hail	0.00	0.00	$0.00
7/8/1970	Hail	0.00	0.00	$50,000.00
5/20/1973	Hail	0.00	0.00	$480.00
3/29/1974	Hail	0.00	0.00	$2,380.00
4/3/1974	Hail	0.50	0.00	$16,666.00
3/24/1975	Hail	0.30	0.00	$2,172.00
5/10/1975	Hail	0.00	0.00	$5,554.00
6/18/1975	Hail	0.00	0.00	$22.00
7/4/1975	Hail	0.00	0.00	$2,860.00
5/11/1976	Hail	0.00	0.00	$556.00
5/5/1977	Hail	0.00	0.00	$250.00
5/30/1977	Hail	0.00	0.00	$0.00
6/6/1977	Hail	0.02	0.00	$217.00
6/19/1977	Hail	0.00	0.00	$5,000.00
5/22/1979	Hail	0.00	0.00	$1,000.00
6/19/1979	Hail	0.00	0.00	$500.00
4/19/1981	Hail	0.00	0.00	$10,000.00
5/30/1982	Hail	0.00	0.00	$0.00
6/10/1982	Hail	0.20	0.00	$243,902.00
3/28/1984	Hail	0.00	0.00	$100,000.00
4/30/1984	Hail	0.00	0.00	$0.00
5/6/1984	Hail	0.00	0.00	$0.00
6/20/1984	Hail	0.00	0.00	$2,174.00
2/11/1985	Hail	0.00	0.00	$2,174.00
6/2/1985	Hail	0.00	0.00	$16,666.00
6/3/1985	Hail	0.00	0.00	$5,000.00
6/6/1985	Hail	0.00	0.00	$0.00
6/7/1985	Hail	0.00	0.00	$2,174.00
5/26/1986	Hail	0.00	0.00	$0.00
6/8/1986	Hail	0.00	0.00	$0.00
6/24/1986	Hail	0.00	0.00	$5,000.00
7/26/1986	Hail	0.00	0.00	$0.00
8/8/1986	Hail	1.00	0.00	$50,000.00
5/1/1987	Hail	0.00	0.00	$0.00

5/4/1987	Hail	0.00	0.00	$0.00
5/4/1988	Hail	0.00	0.00	$0.00
5/16/1988	Hail	0.00	0.00	$500.00
5/17/1988	Hail	0.00	0.00	$100,000.00
6/18/1988	Hail	0.00	0.00	$0.00
4/4/1989	Hail	0.00	0.00	$500,000.00
4/4/1989	Hail	0.00	0.00	$100,000.00
4/27/1989	Hail	0.00	0.00	$0.00
7/1/1990	Hail	0.00	0.00	$100,000.00
4/20/1991	Hail	0.00	0.00	$0.00
5/18/1991	Hail	0.00	0.00	$0.00
6/1/1991	Hail	0.00	1.00	$50,000.00
3/19/1992	Hail	0.00	0.00	$50,000.00
6/21/1992	Hail	0.00	0.00	$50,000.00
3/31/1993	Hail	0.00	0.00	$50,000.00
7/8/1993	Hail	0.00	0.00	$50,000.00
7/19/1994	Hail	0.00	0.00	$50,000.00
1/19/1995	Hail	0.00	0.00	$0.00
5/15/1995	Hail	0.00	0.00	$0.00
6/9/1995	Hail	0.00	0.00	$0.00
5/24/1996	Hail	0.00	0.00	$0.00
3/29/1997	Hail	0.00	0.00	$0.00
6/2/1997	Hail	0.00	0.00	$0.00
5/21/1998	Hail	0.00	0.00	$0.00
6/10/1999	Hail	0.00	0.00	$5,000.00
8/20/1999	Hail	0.00	0.00	$10,002,000.00
5/2/2000	Hail	0.00	0.00	$0.00
7/28/2000	Hail	0.00	0.00	$0.00
4/1/2001	Hail	0.00	0.00	$0.00
5/2/2003	Hail	1.00	0.00	$0.00
5/3/2003	Hail	0.00	0.00	$101,000.00
7/12/2003	Hail	0.00	0.00	$0.00
7/5/2004	Hail	0.00	0.00	$0.00
5/10/2005	Hail	0.00	0.00	$0.00
6/20/2005	Hail	0.00	0.00	$0.00
7/1/2005	Hail	0.00	0.00	$5,000.00
4/8/2006	Hail	0.00	0.00	$0.00
4/21/2006	Hail	0.00	0.00	$0.00
5/26/2006	Hail	0.00	0.00	$0.00
6/23/2006	Hail	0.00	0.00	$0.00
5/3/2007	Hail	0.00	0.00	$0.00
6/12/2007	Hail	0.00	0.00	$0.00
6/24/2007	Hail	0.00	0.00	$0.00
8/24/2007	Hail	0.00	0.00	$0.00
5/20/2008	Hail	0.00	0.00	$0.00
6/11/2008	Hail	0.00	0.00	$0.00
Total		**5.02**	**2.50**	**$11,791,533.00**

Date	Hazard Type	Injuries	Fatalities	Property Damage
6/29/1966	Lightning	0.00	1.00	$5,000.00
7/15/1966	Lightning	2.00	1.00	$50,000.00
6/23/1969	Lightning	0.00	1.00	$0.00
10/15/1971	Lightning	0.00	0.00	$16,667.00
8/7/1972	Lightning	0.00	0.00	$50,000.00
5/20/1973	Lightning	0.00	0.00	$238.00
5/20/1973	Lightning	0.00	0.00	$238.00
3/21/1974	Lightning	0.30	0.00	$2,172.00
3/29/1974	Lightning	0.00	0.00	$2,380.00
4/2/1974	Lightning	1.66	0.00	$1,666.00
4/8/1974	Lightning	0.00	0.00	$2,778.00
3/24/1975	Lightning	0.60	0.00	$2,174.00
5/10/1975	Lightning	0.00	0.00	$5,556.00
5/15/1975	Lightning	0.00	0.00	$2,174.00
6/18/1975	Lightning	0.00	0.00	$22.00
7/4/1975	Lightning	0.00	0.00	$2,858.00
8/27/1975	Lightning	1.00	0.00	$2,600.00
9/18/1975	Lightning	1.50	0.50	$250,000.00
5/11/1976	Lightning	0.00	0.00	$556.00
6/29/1976	Lightning	0.06	0.00	$2,778.00
6/29/1976	Lightning	0.06	0.00	$2,778.00
6/6/1977	Lightning	0.04	0.00	$220.00
6/12/1977	Lightning	0.00	0.00	$50,000.00
6/19/1977	Lightning	0.00	0.00	$5,000.00
7/14/1977	Lightning	0.00	0.00	$2,174.00
6/19/1979	Lightning	0.00	0.00	$500.00
7/10/1980	Lightning	0.40	0.00	$25,000.00
4/19/1981	Lightning	0.00	0.00	$10,000.00
7/29/1981	Lightning	0.00	2.00	$0.00
6/10/1982	Lightning	0.40	0.00	$243,902.00
7/9/1982	Lightning	0.00	1.00	$0.00
7/29/1982	Lightning	0.00	1.00	$5,000.00
7/25/1983	Lightning	0.00	0.00	$2,174.00
8/23/1983	Lightning	0.00	0.00	$2,858.00
6/20/1984	Lightning	0.00	0.00	$2,174.00
7/12/1984	Lightning	4.00	0.00	$100,000.00
7/13/1984	Lightning	0.00	0.00	$50,000.00
7/25/1986	Lightning	0.00	0.00	$50,000.00
6/1/1987	Lightning	0.00	0.00	$50,000.00
4/12/1988	Lightning	0.00	0.00	$500,000.00
7/13/1988	Lightning	0.00	0.00	$50,000.00
7/7/1989	Lightning	0.00	0.00	$50,000.00
7/30/1989	Lightning	0.00	0.00	$50,000.00
8/1/1989	Lightning	0.00	0.00	$50,000.00
8/23/1989	Lightning	0.00	0.00	$50,000.00
9/18/1991	Lightning	0.00	0.00	$50,000.00

6/4/1992	Lightning	0.00	1.00	$0.00
7/19/1993	Lightning	0.00	0.00	$500,000.00
9/2/1993	Lightning	0.00	0.00	$50,000.00
7/19/1994	Lightning	0.00	0.00	$50,000.00
8/19/1994	Lightning	0.00	0.00	$50,000.00
1/29/1995	Lightning	0.00	0.00	$1,667.00
4/24/1995	Lightning	0.00	0.00	$15,000.00
7/2/1995	Lightning	0.00	0.00	$35,000.00
9/10/1995	Lightning	0.00	0.00	$35,000.00
6/14/1996	Lightning	0.00	0.00	$0.00
7/10/1997	Lightning	0.00	0.00	$100,000.00
11/7/1997	Lightning	0.00	0.00	$0.00
5/29/1998	Lightning	0.00	0.00	$150,000.00
7/20/1998	Lightning	0.00	0.00	$25,000.00
8/11/1998	Lightning	0.00	0.00	$5,000.00
5/18/1999	Lightning	0.00	0.00	$20,000.00
7/27/1999	Lightning	0.00	0.00	$15,000.00
6/20/2000	Lightning	0.00	0.00	$400,000.00
6/24/2001	Lightning	0.00	0.00	$20,000.00
5/3/2003	Lightning	1.00	0.00	$0.00
8/4/2003	Lightning	0.00	0.00	$100,000.00
8/17/2003	Lightning	0.00	0.00	$10,000.00
6/9/2004	Lightning	0.00	0.00	$10,000.00
6/12/2004	Lightning	1.00	0.00	$0.00
7/11/2004	Lightning	0.00	0.00	$5,000.00
9/16/2004	Lightning	0.00	0.00	$1,000,000.00
5/25/2006	Lightning	0.00	0.00	$10,000.00
8/22/2006	Lightning	0.00	1.00	$0.00
8/24/2007	Lightning	0.00	0.00	$5,000.00
8/29/2007	Lightning	1.00	1.00	$0.00
Total		**15.02**	**10.50**	**$4,413,304.00**

Date	Hazard Type	Injuries	Fatalities	Property Damage
7/1/1977	Drought/Extreme Heat	0.00	0.00	$1,086.96
4/1/1978	Drought/Extreme Heat	0.00	0.00	$10.87
10/1/1978	Drought/Extreme Heat	0.00	0.00	$108.70
6/1/1983	Drought/Extreme Heat	0.00	0.00	$1,086.96
6/1/1984	Drought/Extreme Heat	0.00	0.00	$0.00
5/1/1986	Drought/Extreme Heat	0.00	0.00	$0.00
6/1/1986	Drought/Extreme Heat	0.00	0.00	$1,086.96
7/1/1986	Drought/Extreme Heat	0.00	0.00	$108,695.65
2/1/1988	Drought/Extreme Heat	0.00	0.00	$10.87
6/1/1988	Drought/Extreme Heat	0.00	0.00	$1,086.96
7/1/1988	Drought/Extreme Heat	0.00	0.00	$108.70
7/1/1988	Drought/Extreme Heat	0.00	0.00	$108.70
8/1/1988	Drought/Extreme Heat	0.00	0.00	$1.39
7/1/1993	Drought/Extreme Heat	0.00	0.00	$10,869,565.22
4/1/1993	Drought/Extreme Heat	0.00	0.00	$0.00
5/1/1994	Drought/Extreme Heat	0.00	0.00	$0.00
5/1/1994	Drought/Extreme Heat	0.00	0.00	$0.00
5/1/1995	Drought/Extreme Heat	0.00	0.00	$0.00
7/15/1999	Drought/Extreme Heat	0.00	0.00	$0.00
8/1/2000	Drought/Extreme Heat	0.00	0.00	$0.00
2/1/2001	Drought/Extreme Heat	0.00	0.00	$0.00
8/1/2001	Drought/Extreme Heat	0.00	0.00	$0.00
11/1/2001	Drought/Extreme Heat	0.00	0.00	$0.00
8/1/2002	Drought/Extreme Heat	0.00	0.00	$0.00
5/1/2004	Drought/Extreme Heat	0.00	0.00	$0.00
5/1/2007	Drought/Extreme Heat	0.00	0.00	$0.00
6/1/2008	Drought/Extreme Heat	0.00	0.00	$0.00
Total		**0.00**	**0.00**	**$10,982,957.91**

Date	Hazard Type	Injuries	Fatalities	Property Damage
5/2/1967	Tornado	0.00	0.00	$25,000.00
5/18/1969	Tornado	0.00	0.00	$50,000.00
5/27/1973	Tornado	30.66	0.00	$333,334.00
3/24/1975	Tornado	4.00	0.00	$25,000.00
9/7/1977	Tornado	0.00	0.00	$25,000.00
3/23/1979	Tornado	2.00	0.00	$500,000.00
4/13/1980	Tornado	2.50	0.00	$250,000.00
5/23/1980	Tornado	0.00	0.00	$50,000.00
8/17/1985	Tornado	39.00	0.00	$500,000.00
4/4/1989	Tornado	0.00	0.00	$50,000.00
5/5/1989	Tornado	17.50	2.00	$250,000.00
2/10/1990	Tornado	0.00	0.00	$50,000.00
4/28/1990	Tornado	4.00	0.00	$100,000.00
3/27/1994	Tornado	2.00	0.00	$25,000.00
8/16/1994	Tornado	0.00	0.00	$16,667.00
10/5/1995	Tornado	0.00	0.00	$75,000.00
9/16/1996	Tornado	0.00	0.00	$15,000.00
2/21/1997	Tornado	0.00	0.00	$330,000.00
11/11/2002	Tornado	0.00	0.00	$252,000.00
1/5/2007	Tornado	0.00	0.00	$10,000.00
Total		**101.66**	**2.00**	**$2,932,001.00**

Date	Hazard Type	Injuries	Fatalities	Property Damage
3/15/1966	Wildfire	0.00	0.00	$21,740.00
2/1/1976	Wildfire	0.00	0.00	$220.00
3/1/1985	Wildfire	0.00	0.00	$21,740.00
4/1/1985	Wildfire	0.04	0.00	$220.00
Total		**0.04**	**0.00**	**$43,920.00**

Earthquakes:

There is no data available relating to historical occurrences of earthquakes within the City of Greer. Although earthquakes are a potential threat, there is no history of occurrence.

APPENDIX 4

RANKING OF POTENTIAL HAZARDS

Hazard	**Freq**	***Rank***	**Prop**	***Rank***	**Injuries**	***Rank***	**Death**	***Rank***	***Total***
Severe Weather/Thunderstorm	149	***1***	$15,206,903	***3***	18	***2***	9	***3***	***9***
Winter Weather	84	***4***	$24,887,676	***1***	8	***5***	25	***1***	***11***
Flooding	85	***3***	$20,835,458	***2***	12	***4***	5	***4***	***13***
Lightning	76	***5***	$4,413,304	***6***	15	***3***	11	***2***	***16***
Hail	92	***2***	$11,791,533	***4***	5	***6***	3	***5***	***17***
Tornado	20	***7***	$2,473,667	***7***	67	***1***	2	***6***	***21***
Drought	27	***6***	$10,982,958	***5***	0	***8***	0	***8***	***27***
Wildfire	4	***8***	$43,920	***8***	0	***7***	0	***7***	***30***
Dam	0	***9***	$0	***9***	0	***9***	0	***9***	***36***
Earthquake	0	***10***	$0	***10***	0	***10***		***10***	***40***
Total	537	***55***	$90,635,419	***55***	125	***55***	54	***55***	***220***

Greer
City of Greer, SC

Map 4 - 1
Hazard Mitigation Plan
Composite Hazards

Legend

- City of Greer
- Greenville-Spartanburg Environs Area
- Railway Corridor at 100'
- Mill House

Community/Critical Facilities

- Hazardous Facilities
- Institutional Uses
- Medical Facilities
- Municipal Facilities
- Public Safety
- Parks & Recreation Facilities
- Transportation Facilities
- Utilities & Services
- Dams

HCP Holland Consulting Planners, Inc.

0 0.375 0.75 1.5 2.25 3 Miles

APPENDIX 5

FUNDING SOURCES

Primary Funding Area: **Communications**

Program: **Public Telecommunications Facilities: Planning and Construction**

Agency: Public Telecommunications Facilities Program, Office of Telecommunications and Information Applications/NTIA, DOC *Agency Type:* Federal

Description: Assists in the planning, acquisition, installation and modernization of public telecommunications facilities, through planning grants and matching construction grants, in order to: a) extend delivery of public telecommunications services to as many citizens of the United States and territories as possible by the most efficient and economical means, including the use of broadcast and non-broadcast technologies; b) increase public telecommunications services and facilities available to, operated by and owned by minorities and women; and c) strengthen the capability of existing public television and radio stations to provide public telecommunications service to the public.

Matching Requirement: 0 *Phone:* 202-482-5802. *Webpage:* aspe.os.dhhs.gov/cfda/p11550.htm

Primary Funding Area: **Emergency Response Equipment**

Program: **Assistance to Firefighters**

Agency: USFA, FEMA *Agency Type:* Federal

Description: Funding to enhance local and tribal nation fire department capabilities to protect the health and safety of the public, and of firefighting personnel facing fire and fire-related hazards. Categories include training, wellness/fitness programs, fire fighting vehicles, fire fighting equipment, personal protective equipment, and fire prevention programs.

Matching Requirement: 0 *Phone:* 866- 274-0960 *Webpage:* www.usfa.fema.gov/grants

Program: **Fire Managemen**t

Agency: Fish and Wildlife Service, DOI *Agency Type:* Federal

Description: Technical assistance to governments and sharing of federal fire-fighting resources with other governmental entities for prevention, use, suppression.

Matching Requirement: 0 *Phone:* 202-205-1657 *Webpage:* www.fs.fed.us/fire/fire_new/manageme

Program: **State Domestic Preparedness Equipment Support**

Agency: Office of Justice Programs, DOJ *Agency Type:* Federal

Description: To plan for and execute a comprehensive threat and needs assessment, to develop a 3-year plan to enhance first responder capabilities, and to provide for equipment purchases and the provision of specialized training.

Matching Requirement: 0 *Phone:* 202-305-9887 *Webpage*:aspe.os.dhhs.gov/cfda/p16007.htm#i37

Program: **Wildland Urban Interface Community and Rural Fire Assistance**

Agency: Bureau of Land Management, DOI *Agency Type:* Federal

Description: To assist communities at risk from catastrophic wildland fires by providing assistance to provide community programs that develop local capability including; assessment and planning, mitigation activities, and community and homeowner education and action; plan and implement hazardous fuels reduction activities, including the training, monitoring or maintenance associated with such hazardous fuels reduction activities, on federal land, or on adjacent nonfederal land for activities that mitigate the threat of catastrophic fire to communities and natural resources in high risk areas; enhance local and small business employment opportunities for rural communities; enhance the knowledge and fire protection capability of rural fire districts by providing assistance in education and training, protective clothing and equipment purchase, and mitigation methods on a cost share basis.

Matching Requirement: 0 *Phone:* 208-387-5150 *Webpage*:aspe.os.dhhs.gov/CFDA/p15228.htm

Primary Funding Area: **General**

Program: **Community Development Block Grants/Economic Development Initiative**

Agency: Community Planning and Development, HUD *Agency Type:* Federal

Description: To help public entities eligible under the Section 108 Loan Guarantee program carry out economic development projects authorized by Section 108(a) of the Housing and Community Development Act of 1974, as amended. Grant assistance must enhance the security of loans guaranteed under the Section 108 program or improve the viability of projects financed with loans guaranteed under the Section 108 program. In addition, this program will make competitive economic development grants in conjunction with Section 108 loan guarantees for qualified Brownfields projects.

Matching Requirement: 0 *Phone:* 202-708-1871 *Webpage:a*spe.os.dhhs.gov/cfda/p14246.htm#i37

Program: **Community Outreach Partnership Center Program**

Agency: Office of Policy Development and Research, Grant *Agency Type:* Federal

Description: This program funds partnerships among institutions of higher education and communities to solve urban problems through research, outreach and exchange of information.

Matching Requirement: 0 *Phone:* 202-708-1537 *Webpage:*aspe.os.dhhs.gov/cfda/p14511.htm

Program: **Disaster Assistance for Older Americans**

Agency: Administration on Aging, DHHS *Agency Type:* Federal

Description: Grants given to the state agency on aging to improve disaster services to individuals over age 60 and their families. Services offered can include advocacy and outreach programs, cleanup services, meals programs, case management, senior day care, and other services that may be required due to the situation.

Matching Requirement: 0 *Phone:* 800-677-1116 *Webpage:* www.aoa.dhhs.gov/

Program: **Emergency Federal Law Enforcement Assistance**

Agency: Office of Justice Programs, DOJ *Agency Type:* Federal

Description: Provides necessary assistance to a State government in order to provide an adequate response to an uncommon situation which requires law enforcement, which is or threatens to become of serious or epidemic proportions, and with respect to which State and local resources are inadequate to protect the lives and property of citizens, or to enforce the criminal law.

Matching Requirement: 0 *Phone:* 202-616-3458 *Webpage:*aspe.os.dhhs.gov/cfda/p16577.htm#i37

Program: **Emergency Management Institute (EMI)_Resident Educational Program**

Agency: EMI, FEMA *Agency Type:* Federal

Description: To improve emergency management practices among State, local and tribal government managers, and Federal officials as well, in response to emergencies and disasters.

Matching Requirement: 0 *Phone:* 301-447-1000 *Webpage:*aspe.os.dhhs.gov/cfda/p83530.htm

Program: **Emergency Watershed Protection (EWP)**

Agency: USDA-NRCS *Agency Type:* Federal

Description: Program objective is to assist sponsors and individuals in implementing emergency measures to relieve imminent hazards to life and property created by a natural disaster. Activities include providing financial and technical assistance to remove debris from streams, protect destabilized streambanks, establish cover on critically eroding lands, repairing conservation practices, and the purchase of flood plain easements. The program is designed for installation of recovery measures.

Matching Requirement: 25 *Phone:* (864) 467-2755 *Webpage: nrcs.usda.gov/programs/ewp/*

Program: **Environmental Protection Consolidated Grants-Program Support**

Agency: Grants Administration Division, EPA *Agency Type:* Federal

Description: The program allows for the consolidation of two or more pollution control programs into one single program. The total amount of funding is only equal to the actual amounts of the grants being consolidated.

Matching Requirement: 0 *Phone:* 202-564-5325 *Webpage:* www.epa.gov/

Program: **Physical Disaster Loans**

Agency: Office of Disaster Assistance, SBA *Agency Type:* Federal

Description: Two types of loans available include Home Disaster Loans and Business Disaster Loans. These are loans available to cover uninsured losses suffered in declared physically damaging disasters. Applicants must show an ability to repay the loan.

Matching Requirement: 0 *Phone:* 800-827-5722 *Webpage:w*ww.sba.gov/disaster/loans.html

Program: **Reimbursement for Firefighting on Federal Property**

Agency: US Fire Administration, FEMA *Agency Type:* Federal

Description: To provide that each fire service organization which engages in firefighting operations on Federal property may be reimbursed for their direct expenses and direct losses (those losses and expenses that are not considered normal operating expenses) incurred in firefighting.

Matching Requirement: 0 *Phone:* 301-447-1358 *Webpage*:aspe.os.dhhs.gov/cfda/p83007.htm#i37

Program: **Technology Development for Environmental Management**

Agency: Office of Science and Technology, Office of Environmental Management, DOE *Agency Type:* Federal

Description: OST works with the Environmental Management (EM) customer programs to develop new or improved technology systems to reduce risks to the environment and to the public, reduce overall cleanup costs, and furnish cleanup methods that did not previously exist in order to satisfy applicable Federal, State, local laws, and regulations.

Matching Requirement: 0 *Phone:* 301-903-7425 *Webpage*:aspe.os.dhhs.gov/cfda/p81104.htm

Primary Funding Area: **Infrastructure Systems**

Program: **Airport Improvement Program**

Agency: Federal Aviation Administration, DOT *Agency Type:* Federal

Description: To assist sponsors, owners, or operators of public-use airports in the development of a nationwide system of airports adequate to meet the needs of civil aeronautics.

Matching Requirement: 0 *Phone:* 202- 267-3831 *Webpage*:aspe.os.dhhs.gov/cfda/p20106.htm

Program: **Bridge Alteration**

Agency: U. S. Coast Guard, DOT *Agency Type:* Federal

Description: To accomplish alteration of obstructive bridges to render navigation through or under it reasonably free, easy, and unobstructed for the benefit of navigation. In accordance with the Coast Guard Authorization Act of 1996, permanent authority exists in 49 U.S.C. 104(e) to transfer funds from the Federal-Aid Highways discretionary bridge program to the Coast Guard to finance alteration of Truman-Hobbs obstructive highway bridges.

Matching Requirement: 0 *Phone:* 202-267-1977 *Webpage*:aspe.os.dhhs.gov/cfda/p20007.htm

Program: **Capitalization Grants for Drinking Water State Revolving Funds**

Agency: Office of Ground Water and Drinking Water, EPA *Agency Type:* Federal

Description: Grant money is provided to the state which loans money to local governments and water authorities. The loan money is to be used to improve drinking water supply. The loan money is then repaid back into this revolving fund, to allow other parties to borrow this money for similar projects.

Matching Requirement: 20 *Phone:* 800-426-4791 *Webpage*:www.epa.gov/SAFEWATER/INDEX.ht

Program: **Community Development Block Grants/Entitlement Grants**

Agency: Community Planning and Development, HUD *Agency Type:* Federal

Description: To develop viable urban communities, by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for persons of low and moderate income. Can include acquisition of real property, relocation and demolition, rehabilitation of residential and nonresidential structures, provision of public facilities and improvements, such as water and sewer facilities which require reviews by the State single point of contact or a Regional Planning Agency in accordance with Executive Order 12372, streets, and neighborhood centers. In addition, CDBG funds may be used to pay for public services within certain limits.

Matching Requirement: 0 *Phone:* 202-708-1577 *Webpage*:aspe.os.dhhs.gov/cfda/p14218.htm

Program: **Community Development Block Grants/State's**

Agency: Community Planning and Development, HUD *Agency Type:* Federal

Description: To develop viable urban communities by providing decent housing, a suitable living environment, and expanding economic opportunities, principally for persons of low and moderate income. States must distribute the funds to units of general local government in non-entitlement areas.

Matching Requirement: 0 *Phone:* 202-708-1322 *Webpage:*aspe.os.dhhs.gov/cfda/p14228.htm

Program: **Drought Contingency Water**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: May be used only for water supply vulnerability revealed by droughts. Water can be provided only if surplus water is available in a Corps reservoir. Where the governor of a state has declared a state of emergency due to drought, Corps project managers may approve withdrawals from 50 acre-feet of storage or less. This water can be made available for domestic and industrial uses but not for crop irrigation.

Matching Requirement: 0 *Phone:* 703-428-9055 *Webpage:* www.fsa.usda.gov/drought/finalreport/fi

Program: **Economic Development: Technical Assistance**

Agency: Economic Development Administration, DOC *Agency Type:* Federal

Description: Promotes economic development and alleviate under-employment and unemployment in distressed areas, EDA operates a technical assistance program. The program provides funds to: (1) enlist the resources of designated university centers in promoting economic development; (2) support innovative economic development projects; (3) disseminate information and studies of economic development issues of national significance; and (4) finance feasibility studies and other projects leading to local economic development.

Matching Requirement: 0 *Phone:* 202- 482-4085 *Webpage:*aspe.os.dhhs.gov/cfda/p11303.htm

Program: **Emergency Community Water Assistance Grants**

Agency: Water and Waste Rural Utilities Service, USDA *Agency Type:* Federal

Description: Assists rural communities that have had a significant decline in quantity or quality of drinking water. Grants can be made in rural areas and cities or towns with a population not in excess of 10,000, of modest income, and modest construction projects, and a median household income of 100 percent of a State's non-metropolitan median household income. Grants may be made for 100 percent of project costs. The maximum grant is $500,000 when a significant decline in quantity or quality of water occurred within two years, or $75,000 to make emergency repairs and replacement of facilities on existing systems.

Matching Requirement: 0 *Phone:* 202-690-2670 *Webpage:* www.usda.gov/rus/water/programs.htm

Program: **Emergency Relief**

Agency: Federal Highway Administration *Agency Type:* Federal

Description: Provides planning and design assistance to state governments to repair roads which were built with Federal funds, replace or rehabilitate bridges, and other transportation purposes as a result of natural disasters or catastrophic failures. For Interstate highways, the Federal share is 90 percent. For all other highways, the Federal share is 80 percent. Emergency repair work to restore essential travel, minimize the extent of damage, or protect the remaining facilities, accomplished in the first 180 days after the disaster occurs, may be reimbursed at 100 percent Federal share.

Matching Requirement: -100 *Phone:* 202-366-4655 *Webpage:* www.fhwa.dot.gov/

Program: **Emergency Well Construction and Water Transport**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: The cost of transporting water is provided by the Corps, but the cost of purchasing and storing water is the nonfederal sponsor's responsibility. Federal costs associated with well construction must be repaid. This is a program of last resort. The law requires that all other reasonable means must be exhausted before the Corps has authority to help. Corps assistance is supplemental to state and local efforts. Long-term solutions to water supply problems are the responsibility of state and local interests.

Matching Requirement: 0 *Phone:* 703-428-9055 *Webpage:* www.fsa.usda.gov/drought/finalreport/fi

Program: **Farm Labor Housing Loans and Grants**

Agency: USDA *Agency Type:* Federal

Description: To make loans to provide decent, safe, and sanitary housing for domestic farm labor in areas where needed and provide grants where there is a pressing need for such facilities in an area for farm laborers and there is reasonable doubt that housing can be provided without the grant assistance.

Matching Requirement: 10 *Phone:* 202-720-1604 *Webpage:* www.rurdev.usda.gov/mo/factflh.htm

Program: **Grants-in-Aid for Railroad Safety: State Participation**

Agency: Federal Railroad Administration *Agency Type:* Federal

Description: Promotes safety in all areas of railroad operations; reduce railroad related accidents and casualties; and to reduce damage to property caused by accidents involving any carrier of hazardous materials by providing State participation in the enforcement and promotion of safety practices.

Matching Requirement: 50 *Phone:* 202-493-6300 *Webpage*:aspe.os.dhhs.gov/cfda/p20303.htm

Program: **Highway Planning and Construction**

Agency: Federal Highway Administration, DOT *Agency Type:* Federal

Description: To assist State transportation agencies in the planning and development of an integrated, interconnected transportation system important to interstate commerce and travel by constructing and rehabilitating the National Highway System, including the Interstate System; and for transportation improvements to all public roads except those functionally classified as local; to provide aid for the repair of Federal-aid roads following disasters; to foster safe highway design; to replace or rehabilitate deficient or obsolete bridges; and to provide for other special purposes.

Matching Requirement: 0 *Phone:* 202-366-4853 *Webpage*:aspe.os.dhhs.gov/cfda/p20205.htm

Program: **HOME Investment Partnerships Program**

Agency: Community Planning and Development, HUD *Agency Type:* Federal

Description: (1) To expand the supply of affordable housing, particularly rental housing, for low and very low income Americans; (2) to strengthen the abilities of State and local governments to design and implement strategies for achieving adequate supplies of decent, affordable housing; (3) to provide both financial and technical assistance to participating jurisdictions, including the development of model programs for developing affordable low income housing; and (4) to extend and strengthen partnerships among all levels of government and the private sector, including for-profit and nonprofit organizations, in the production and operation of affordable housing.

Matching Requirement: 0 *Phone:* 202-708-2470 *Webpage*:aspe.os.dhhs.gov/cfda/p14239.htm

Program: **National Dam Safety**

Agency: Mitigation Directorate, FEMA *Agency Type:* Federal

Description: Establishment and maintenance of effective State programs intended to ensure dam safety, to protect human life and property, and to improve State dam safety programs.

Matching Requirement: 0 *Phone:* 202-646-2704 *Webpage*:aspe.os.dhhs.gov/cfda/p83550.htm#i37

Program: **Pollution Control Loans**

Agency: Small Business Administration *Agency Type:* Federal

Description: Intended to provide loan guarantees to eligible small businesses for the financing of the planning,

design, or installation of pollution control facilities. These facilities must prevent, reduce, abate, or control any form of pollution, including recycling.

Matching Requirement: 0 *Phone:* 800-U-ASK- *Webpage* .www.epa.gov/owow/watershed/wacade

Program: **Resource Conservation and Development Loans**

Agency: Water and Waste Rural Utilities Service, USDA *Agency Type:* Federal

Description: Provides loan assistance to local agencies in authorized Resources Conservation and Development areas. Loan funds may be used for water based recreation facilities, soil and water development, conservation, control and use facilities, community water storage facilities, and necessary equipment to implement the above. A loan to a single RC&D area cannot exceed $500,000.

Matching Requirement: 0 *Phone:* 202-690-2670 *Webpage:*

Program: **Rural Housing and Economic Development**

Agency: Community Planning and Development , HUD *Agency Type:* Federal

Description: To expand the supply of affordable housing and access to economic opportunities in rural areas.

Matching Requirement: 0 *Phone:* 202-708-2290 *Webpage:* aspe.os.dhhs.gov/cfda/p14250.htm

Program: **Rural Rental Housing Loans**

Agency: USDA *Agency Type:* Federal

Description: Loans may be made for housing in communities of up to 10,000 people and under certain conditions, towns and cities between 10,000 and 20,000 people. Loans are approved by the RD State Director and do not require a disaster declaration by the President or Secretary of Agriculture.

Matching Requirement: 0 *Phone:* 202- 720-1604 *Webpage:* www.rurdev.usda.gov/rhs/ProgramBrie

Program: **State and Community Highway Safety**

Agency: Office of Highway Safety, Federal Highway Administration *Agency Type:* Federal

Description: Provides a coordinated national highway safety program to reduce traffic accidents, deaths, injuries, and property damage.

Matching Requirement: 20 *Phone:* 202-366-6902 *Webpage*:aspe.os.dhhs.gov/cfda/p20600.htm#i37

Program: **Superfund Technical Assistance Grants for Citizen Groups at Priority Sites**

Agency: Office of Emergency and Remedial Response, EPA *Agency Type:* Federal

Description: Provides resources under CERCLA, Section 117(e) for community groups to hire technical advisors who can assist them in interpreting technical information concerning the assessment of potential hazards and the selection and design of appropriate remedies at sites eligible for cleanup under the Superfund program.

Matching Requirement: 0 *Phone:* 703-603-8889 *Webpage*:aspe.os.dhhs.gov/cfda/p66806.htm

Program: **Water Conservation Field Services**

Agency: Department of the Interior *Agency Type:* Federal

Description: Provides assistance to agriculture, municipalities, states, tribes, water conservation districts, water conservancy districts, irrigation associations, any entity that is using Reclamation Project water, and others.

Matching Requirement: 0 *Phone:* 303-445-2945 *Webpage*:www.fsa.usda.gov/drought/finalreport/fi

Program: **Water Quality Cooperative Agreements**

Agency: Office of Wastewater Management, EPA *Agency Type:* Federal

Description: To assist States, Indian Tribes, interstate agencies, and other public or nonprofit organizations in developing, implementing, and demonstrating innovative approaches relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution. This includes watershed approaches for combined sewer overflow, sanitary sewer overflows, and storm water discharge problems, pretreatment and sludge (biosolids) program activities, and alternative ways to measure the effectiveness of point source programs.

Matching Requirement: 0 *Phone:* 202-564-0672 *Webpage*:aspe.os.dhhs.gov/cfda/p66463.htm

Primary Funding Area: **New Public Buildings**

Program: **Disaster Recovery Initiative**

Agency: Office of Community Planning and Development, HUD *Agency Type:* Federal

Description: For recovery from major disasters declared by the President. Each supplemental appropriations statute specifies the disasters or time period of disaster declarations for which funding is available. Can be used for rehabilitating residential and commercial buildings; homeownership assistance; building new replacement housing; code enforcement; acquiring, constructing or reconstructing public facilities and improvements, including streets, neighborhood centers, and water and sewer facilities; assistance to disaster-affected businesses for carrying out economic development activities to create and retain jobs; buying flood prone properties and making other mitigation efforts to protect damaged properties from, and reduce the cost of, future disaster damage; and making relocation payments to displaced people and businesses, and other activities. Funds may also be used for emergency response activities, such as debris removal, clearance, and demolition not funded by other federal disaster assistance and extraordinary increases in the level of public services for disaster victims.

Matching Requirement: 25 *Phone:* 202-708-1112 *Webpage:* www.hud.gov

Program: **Economic Development Grants for Public Works and Infrastructure Development**

Agency: Public Works Division, Economic Development Administration, DOC *Agency Type:* Federal

Description: The grants available can be used to build public facilities such as water and sewer systems, industrial access roads, industrial parks, tourism facilities, vocational schools, and other public facilities that will enhance the areas ability to improve its business expansion. Overall the projects need to develop long-term economic health to assist in the creation and retention of skilled jobs that can provide for immediate employment for the unemployed and under employed in the area..

Matching Requirement: 0 *Phone:* 202-482-5081 *Webpage:* www.doc.gov/eda/

Primary Funding Area: Parks/Natural Areas - Development/Preservation

Program: **Brownfields Economic Redevelopment Initiative**

Agency: Office of Solid Waste and Emergency Response, EPA *Agency Type:* Federal

Description: Funding and assistance to assess clean up and help redevelop abandoned properties with real and implied environmental contamination.

Matching Requirement: 0 *Phone:* 202-260-1223 *Webpage:* epa.gov/brownfields

Program: **Forestry Incentives Program**

Agency: Natural Resources Conservation Service, USDA *Agency Type:* Federal

Description: The Forestry Incentives Program (FIP) is intended to ensure the nation's ability to meet future demand for sawtimber, pulpwood, and quality hardwoods. FIP provides cost-share monies to help with the costs of tree planting, timber stand improvements, and related practices on non-industrial private forestlands. In addition to ensuring a future supply of timber, FIP's forest maintenance and reforestation projects provide numerous natural resource benefits, including reduced soil erosion and wind and enhanced water quality and wildlife habitat.

Matching Requirement: 35 *Phone:* 202-720-6521 *Webpage*:epa.gov/owowwtr1/watershed

Program: **National Forest Foundation Awards**

Agency: National Forest Foundation *Agency Type:* Foundation

Description: Funds non-governmental organizations working in, or adjacent to, national forests and grasslands; preference given to proposed projects in six geographical areas focused upon Collaborative Stewardship, Watershed Health & Restoration, Wildlife Habitat Improvement, and Recreational Opportunities Enhancement. It is a matching awards program 1:1 with private cash contributions. In-kind contributions may be noted to show leverage for a project, but will not be matched by federal funds. Projects must be completed within a year from project award date. Applications will be accepted from non-federal partners, community-based organizations, educational institutions, and other non-profit 501(c)(3) organizations.

Matching Requirement: 50 *Phone:* 202- 496-4963 *Webpage:* www.natlforests.org

Program: **Rivers, Trails and Conservation Assistance**

Agency: Rivers, Trails and Conservation Assistance, National Park Service, DOI *Agency Type:* Federal

Description: To serve as a national technical resource for government and nonprofit partnerships; to increase the number of rivers and lands protected; and to expand the number of trails established nationwide.

Matching Requirement: 0 *Phone:* 202- 565-1200. *Webpage*:aspe.os.dhhs.gov/cfda/p15921.htm

Program: **Stewardship Incentives Program**

Agency: Forest Service, USDA *Agency Type:* Federal

Description: Technical and financial assistance to encourage non-industrial private forest landowners to keep

their lands and natural resources productive and healthy. Qualifying land includes rural lands with existing tree cover or land suitable for growing trees which is owned by a private individual, group, association, corporation, Indian tribe, or other legal private entity. Eligible landowners must have an approved Forest Stewardship Plan and own 1,000 or fewer acres of qualifying land. Authorizations may be obtained for exceptions of up to 5,000 acres.

Matching Requirement: 0 *Phone:* 202-720-6521 *Webpage:w*ww.nrcs.usda.gov/NRCSProg.html

Program: **Wildlife Restoration**

Agency: Fish and Wildlife Service, DOI *Agency Type:* Federal

Description: Provides funding for the selection, restoration, rehabilitation and improvement of wildlife habitat, wildlife management research, and the distribution of information produced by the projects.

Matching Requirement: 0 *Phone:* 703-358-2156 *Webpage:* www.fws.gov

Primary Funding Area: **Plans & Procedures**

Program: **Community Assistance Program - State**

Agency: Mitigation Directorate *Agency Type:* Federal

Description: Ensures that communities participating in the National Flood Insurance Program (NFIP) are achieving flood loss reduction measures consistent with program direction. The CAP-SSSE is intended to identify, prevent and resolve floodplain management issues in participating communities before they develop into problems requiring enforcement action.

Matching Requirement: 25 *Phone:* 202-646-4621 *Webpage:* www.fema.gov/mit/

Program: **Economic Adjustment Assistance for Disasters**

Agency: Economic Development Administration, DOC *Agency Type:* Federal

Description: For strategic planning, project implementation and revolving loan funds to mitigate effects of industrial or corporate restructuring, disaster, depletion of natural resources, new Federal laws or regulations. Applicants may be economic development districts, Indian Tribes and other eligible areas at local and regional levels, consortiums, universities, public or private non-profits or associations; short-term planning grants to States, sub-State planning regions and urban areas.

Matching Requirement: 0 *Phone:* 202-482-5081 *Webpage:* hom.doc.gov/

Program: **Emergency Management Performance Grants**

Agency: FEMA *Agency Type:* Federal

Description: To develop comprehensive emergency management, including terrorism consequence management preparedness, at the State and local level and to improve emergency planning, preparedness, mitigation, response, and recovery capabilities.

Matching Requirement: 0 *Phone:* 202-646-7057 *Webpage*:aspe.os.dhhs.gov/CFDA/p83552.htm

Program: **Habitat Conservation**

Agency: National Oceanic and Atmospheric Administration, DOC *Agency Type:* Federal

Description: Provides grants and cooperative agreements for biological, economic, sociological, public policy, and other research, administration, and public education projects on the coastal environment to benefit U.S. fisheries, conserve protected resources.

Matching Requirement: 0 *Phone:* 301-713-0174 *Webpage*:aspe.os.dhhs.gov/cfda/p11463.htm

Program: **Hazardous Materials Assistance**

Agency: Hazardous Materials Unit, Chemical and Radiological Preparedness Division, FEMA *Agency Type:* Federal

Description: Provides technical and financial assistance through the States to support State, local and Indian tribal governments in oil and hazardous materials emergency planning and exercising. To enhance State, Tribal and local governments capabilities to inter-operate with the National Response System (NRS). To support the Comprehensive Hazardous Materials (HAZMAT) Emergency Response - Capability Assessment Program (CHER-CAP) Activities.

Matching Requirement: 0 *Phone:* 202- 646-4542 *Webpage*:aspe.os.dhhs.gov/CFDA/p83012.htm#i

Program: **Superfund State Site: Specific Cooperative Agreements**

Agency: Office of Solid Waste and Emergency Response, EPA *Agency Type:* Federal

Description: To (1) Conduct site characterization activities at potential confirmed hazardous waste sites; (2) undertake remedial planning and remedial implementation actions at sites on the National Priorities List (NPL) to clean up the hazardous waste sites that are found to pose hazards to human health; and (3) effectively implement the statutory requirements of CERCLA 121 (f) which mandates substantial and meaningful State involvement.

Matching Requirement: 0 *Phone:* 703-308-8506 *Webpage*:aspe.os.dhhs.gov/cfda/p66802.htm#i37

Program: **Surveys, Studies, Investigations and Special Purpose Grants**

Agency: Environmental Protection Agency *Agency Type:* Federal

Description: (1) To support Surveys, Studies and Investigations and Special Purpose assistance associated with Air Quality, Acid Deposition, Drinking Water, Water Quality, Hazardous Waste, Toxic Substances, and Pesticides; (2) to identify, develop and demonstrate necessary pollution control techniques; to prevent, reduce, and eliminate pollution; and (3) to evaluate the economic and social consequences of alternative strategies and mechanisms for use by those in economic, social, governmental, and environmental management positions.

Matching Requirement: 0 *Phone:* 202-260-2597 *Webpage*:aspe.os.dhhs.gov/cfda/p66606.htm

Program: **Watershed Assistance Grants**

Agency: Office of Wetlands, Oceans and Watersheds , EPA *Agency Type:* Federal

Description: EPA establishes a cooperative agreement with one or more nonprofit organization(s) or other eligible entities to support watershed partnership organizational development and long-term effectiveness.

Matching Requirement: 0 *Phone:* 202-260-4538 *Webpage*:www.epa.gov/owow/watershed/wacade

Program: **Watershed Surveys and Planning**

Agency: Natural Resource Conservation Service, USDA *Agency Type:* Federal

Description: To provide planning assistance to Federal, State, and local agencies for the development of coordinated water and related land resources programs in watersheds and river basins.

Matching Requirement: 0 *Phone:* 202-720-4527 *Webpage*:aspe.os.dhhs.gov/cfda/p10906.htm

Primary Funding Area: **Public Education**

Program: **CEPP Technical Assistance Grants**

Agency: Chemical Emergency Preparedness and Prevention Office , EPA *Agency Type:* Federal

Description: Provides financial assistance to States, Local agencies, and Indian Tribes for chemical accident prevention activities that relate to the Risk Management Program under the Clean Air Act Section 112(r). To provide financial assistance to Tribes for chemical emergency planning, and community right-to-know programs which are established to prevent or eliminate unreasonable risk to the health and environment of communities within the State.

Matching Requirement: 0 *Phone:* 202- 564-7981 *Webpage*:aspe.os.dhhs.gov/cfda/p66810.htm

Program: **Community Services Block Grant**

Agency: Office of Community Services, Administration for Children and Families, DHHS *Agency Type:* Federal

Description: Competitive grants given to the state to provide services and other provisions for low-income persons and families to combat the causes of poverty within the states communities. The states are given leeway in regards to the programs they establish.

Matching Requirement: 0 *Phone:* 202-401-9340 *Webpage*:www.acf.dhhs.gov/programs/ocs/

Program: **Disaster Legal Services**

Agency: Human Services Division, Response and Recovery Directorate, FEMA *Agency Type:* Federal

Description: Program to provide legal assistance to low-income individuals or families and groups. Free legal advice can include counseling, and even representation in non-fee generating cases with an exception provided for under Part 206-164 (b). Fee-generating cases will not be handled and will be referred through legal referral services.

Matching Requirement: 0 *Phone:* 202-646-4600 *Webpage:* www.fema.gov/

Program: **Environmental Justice through Pollution Prevention**

Agency: Office of Pollution Prevention and Toxics, EPA *Agency Type:* Federal

Description: Provides financial assistance to low-income and people-of-color communities to implement pollution prevention activities. EPA strongly encourages cooperative efforts among communities, business, industry, and government to address common pollution prevention goals. Projects funded under this grant program may involve public education, training, demonstration projects, and public or private partnerships, as well as approaches to develop, evaluate, and demonstrate nonregulatory strategies and technologies.

Matching Requirement: 0 *Phone:* 703-841-0483 *Webpage:* www.epa.gov/owow/watershed/wacade

Program: **Hurricane Program**

Agency: Mitigation Directorate, FEMA *Agency Type:* Federal

Description: Provides assistance to certain coastal states to reduce the devastating effects from hurricanes. Programs include property protection, evacuation studies, hazard identification, training exercises and public education programs.

Matching Requirement: 25 *Phone:* 202-646-3362 *Webpage:* www.fema.gov/mit/

Program: **Pipeline Safety**

Agency: Research and Special Programs Administration, DOT *Agency Type:* Federal

Description: To develop and maintain State natural gas, liquefied natural gas, and hazardous liquid pipeline safety programs.

Matching Requirement: 50 *Phone:* 202-366-4564 *Webpage:* aspe.os.dhhs.gov/cfda/p20700.htm

Program: **Water Pollution Control**

Agency: Environmental Protection Agency *Agency Type:* Federal

Description: A wide range of support for prevention and abatement projects for surface and ground water sources. Funding cannot be used for waste treatment facilities. Funds can be used on studies, planning, training and public information.

Matching Requirement: 0 *Phone:* 800-832-7828 *Webpage:* www.epa.gov/

Primary Funding Area: **Retrofit Public/Historical Structures**

Program: **Disaster Assistance for the Elderly**

Agency: Administration on Aging, DHHS *Agency Type:* Federal

Description: Funding awarded to States through their Agencies on Aging. The funds are distributed to support services like nutrition program, and renovation and construction of senior resource centers.

Matching Requirement: 0 *Phone:* 202-619-2618 *Webpage:* www.aoa.dhhs.gov/

Program: **Environmental And Historic Preservation And Cultural Resources Programs**

Agency: FEMA *Agency Type:* Federal

Description: Consists of two distinct elements: 1) The Environmental Program and 2) the Historic Preservation and Cultural Resources Program. 1) is to ensure that actions directly implemented by FEMA and non-federal partners integrate environmental concerns into disaster mitigation, planning, response, and recovery decision-making. 2) is to address the needs of communities in preparing for, mitigating, responding and recovering from the devastating effects disasters may have on historic properties and cultural resources; also provides a wide range of technical and educational assistance to communities in partnership with other federal agencies and private national cultural heritage organizations.

Matching Requirement: 0 *Phone:* 202-646-3362 *Webpage:* www.fema.gov/mit/ep/index.htm

Program: **Historic Preservation Fund Grants-in-Aid**

Agency: National Park Service, Preservation Heritage Services Division *Agency Type:* Federal

Description: Provides matching grants to states to be used to identify, evaluate and protect historic properties.

Matching Requirement: 0 *Phone:* 202-343-9518 *Webpage:* www.nps.gov/parks.html

Primary Funding Area: **River/Stream - Restoration/Preservation**

Program: **Non-point Source Implementation Grants**

Agency: Office of Water, EPA *Agency Type:* Federal

Description: Funding provided to the state to implement projects to reduce nonpoint source pollution.

Matching Requirement: 40 *Phone:* 800-832-7828 *Webpage*:www.epa.gov/owow/nps/funding.html

Program: **Protection, Clearing and Straightening Channels**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: To restore channels for purposes of navigation or flood control. Local cost participation requirements and procedures for determining the local share of project costs are similar to those for navigation or flood control projects specifically authorized by Congress under regular authorization procedures. Annual expenditures limited to $1,000,000.

Matching Requirement: 0 *Phone:* 202-272-8835 *Webpage*:aspe.os.dhhs.gov/cfda/P12109.htm

Primary Funding Area: **Stafford Act**

Program: **Community Disaster Loans**

Agency: Response and Recovery Directorate *Agency Type:* Federal

Description: Provides loans subject to Congressional loan authority, to any local government that has suffered substantial loss of tax and other revenue in an area in which the President designates a major disaster exists. The funds can only be used to maintain existing functions of a municipal operating character and the local government must demonstrate a need for financial assistance.

Matching Requirement: 75 *Phone:* 202-646-4066 *Webpage:* www.fema.gov/r-n-r

Program: **Crisis Counseling Assistance and Training**

Agency: Human Services Division, Response and Recovery Directorate, FEMA *Agency Type:* Federal

Description: Crisis counseling services

Matching Requirement: 0 *Phone:* 202-646-3685 *Webpage:*/www.fema.gov/

Program: **Economic Injury Disaster Loans**

Agency: Office of Disaster Assistance, SBA *Agency Type:* Federal

Description: Small business loan program available to those concerns that suffered economic injury due to a Presidential, Small Business Administration, or Secretary of Agriculture- declared disaster. The rules of the SBA apply including physical location within the disaster area. There is a $1,500,000 limit on the amount of the loan. Repayment may take up to 30 years.

Matching Requirement: 0 *Phone:* 202-205-6734 *Webpage:* www.sba.gov/disaster

Program: **Fire Suppression Assistance Program**

Agency: Response and Recovery Directorate, FEMA *Agency Type:* Federal

Description: Provides real-time, pro-active assistance to states to help fire suppression efforts on public or privately owned forests or grasslands. Assistance can be applied for prior to a Presidential declaration if the fires threaten to become major disasters.

Matching Requirement: 30 *Phone:* 202-646-4535 *Webpage:*www.usfa.fema.gov/fedguide/ch1-23.htm

Program: **Historic Properties, Repair and Restoration of Disaster-Damaged**

Agency: Infrastructure Support Division, FEMA *Agency Type:* Federal

Description: Used in conjunction with the Stafford Act to evaluate the effects of repairs, restoration and mitigation of hazards to disaster-damaged historic properties.

Matching Requirement: 0 *Phone:* 202-646-3362 *Webpage:* www.fema.gov/

Program: **Mitigation Assistance**

Agency: FEMA *Agency Type:* Federal

Description: Project Impact helps communities that have a history of losses from natural disasters or have a significant disaster risk, such as those located in watershed floodplains. Funds are provided to help assess risks, build public-private partnerships, identify and implement projects, and communicate and mentor success.

Matching Requirement: 0 *Phone:* 202-646-4600 *Webpage:* www.fema.gov/impact

Program: **Project Impact**

Agency: FEMA *Agency Type:* Federal

Description: Project Impact helps communities that have a history of losses from natural disasters or have a significant disaster risk, such as those located in watershed floodplains. Funds are provided to help

assess risks, build public-private partnerships, identify and implement projects, and communicate and mentor success.

Matching Requirement: 0 *Phone:* 202-646-4600 *Webpage:* www.fema.gov/impact

Program: **Public Assistance Grant**

Agency: Infrastructure Support Division, Response and Recovery Directorate *Agency Type:* Federal

Description: Available when areas have been impacted by a Presidentially-declared disaster. The funds may be used for a number of projects including repairs or replacement of damages structures, building, bridges, water facilities, utilities, roads, etc. The money can also be used for debris removal. Also, eligibility of cultural resources and private non-profit museums are designed to improve the ability for collections and cultural facilities to recover from disasters.

Matching Requirement: 25 *Phone:* 202-646-4600 *Webpage:* www.fema.gov/

Primary Funding Area: Storm Water, Flood Control Structures, Measures

Program: **Emergency Advance Measures for Flood Prevention**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: Performs activities prior to flooding or flood fight that would assist in protecting against loss of life and damages to property due to flooding.

Matching Requirement: 0 *Phone:* 202-272-0251 *Webpage:*aspe.os.dhhs.gov/CFDA/p12111.htm

Program: **Emergency Operations Flood Response and Post Flood Response**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: To provide emergency flood response and post flood response assistance as required to supplement State and local efforts and capabilities in time of flood or coastal storm.

Matching Requirement: 0 *Phone:* 202- 272-0251 *Webpage:* www.usace.army.mil/business.html

Program: **Emergency Rehabilitation of Flood Control Works or Federally Authorized Coastal Protection Works**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: Funds may be used for emergency repairs to flood control facilities and restoration of federally authorized coastal protection systems. The facilities must have been damaged by the winds, rain, and wave actions from a storm event and not from neglect. The funds may not be used for new projects or major improvements of existing facilities.

Matching Requirement: 0 *Phone:* 202-272-0169 *Webpage:* www.usace.army.mil/

Program: **Emergency Watershed Protection (EWP)**

Agency: Natural Resources Conservation Service, USDA *Agency Type:* Federal

Description: Purpose is to undertake emergency measures, including the purchase of flood plain easements, for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood or any other natural occurrence is causing or has caused a sudden impairment of the watershed. It provides funding to project sponsors for such work as clearing debris from clogged waterways, restoring vegetation, and stabilizing river banks.

Matching Requirement: 25 *Phone:* 202- 720-1604 *Webpage*:www.nrcs.usda.gov/NRCSProg.html

Program: **Flood Control Projects (Small)**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: Reduce flood damages through projects not specifically authorized by Congress. Project Planning Studies are undertaken in a single feasibility phase. The first $100,000 is federally funded. Additional costs are cost-shared 50/50 with local sponsor.

Matching Requirement: 50 *Phone:* 202-761-1975 *Webpage*:aspe.os.dhhs.gov/CFDA/p12106.htm

Program: **Flood Damage Reduction**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: The US Army Corps of Engineers designs and builds flood and erosion control protection for highways, bridges, hospitals, churches, schools and other public facilities to protect them from further flood damage. The project cost must have a federal limit of $500,000.

Matching Requirement: 0 *Phone:* 202-272-0169 *Webpage* :www.usace.army.mil/public.html#Flood

Program: **Flood Mitigation Assistance Program**

Agency: Mitigation Directorate *Agency Type:* Federal

Description: These grants are to be used to develop cost-effective measures to reduce the risk of flooding within communities. Planning grants must be approved prior to application for project grants. The funds can be used for developing and improving flood mitigation plans. States and communities can apply for project grants to implement measures to reduce flood losses. Projects that reduce the risk of flood damage to structures insurable under the National Flood Insurance Program are eligible for consideration.

Matching Requirement: 25 *Phone:* 202-646-5621 *Webpage:* www.fema.gov/mit/icc_d.htm

Program: **Flood Plain Management Services**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: The funds can be used to identify flood hazards, implement flood hazard planning and mitigation efforts. Can also include planning and preparedness of hurricanes and other flood causing incidents.

Matching Requirement: 0 *Phone:* 202-272-0169 *Webpage:* www.usace.army.mil/

Program: **Flood Risk Reduction**

Agency: Farm Service Agency, USDA *Agency Type:* Federal

Description: For farmers who voluntarily enter into contracts to receive payments on lands with high flood potential. In return, participants agree to forego certain USDA program benefits. These contract payments provide incentives to move farming operations from frequently flooded land.

Matching Requirement: 0 *Phone:* 202-720-6521 *Webpage:* www.nrcs.usda.gov/NRCSProg.html

Program: **Hazard Mitigation Grant Program**

Agency: Mitigation Directorate *Agency Type:* Federal

Description: Grant monies provided to implement hazard mitigation projects. The eligible projects are those that have been developed to reduce future losses to lives and property. Projects can include relocation, acquisition, demolition and elevating of structures.

Matching Requirement: 25 *Phone:* 202-646-3362 *Webpage:* www.fema.gov/mit/

Program: **Integrated Flood Observation and Warning System**

Agency: Office of Hydrology, National Weather Service, National Oceanic and Atmospheric Administration *Agency Type:* Federal

Description: The goals of the IFLOWS Program are to substantially reduce the annual loss of life from flash floods, reduce property damage, and reduce disruption of commerce and human activities. Numerous communities, state and federal agencies are now linked in a wide area communications network using this technology. This Automated Flood Warning Systems (AFWS) network connects numerous local flood warning systems, and integrates and shares information from approximately 250 computers and 1500 sensors in 12 states.

Matching Requirement: 0 *Phone:* (609) 261-6600 *Webpage:* www.afws.net/

Program: **National Flood Mitigation Fund**

Agency: Mitigation Directorate *Agency Type:* Federal

Description: Funds programs designed to reduce the risk of flood damage. Grants can be used for flood mitigation programs including relocation, demolition, acquisition of flood-prone properties, floodproofing and other techniques designed to limit the exposure to flood damage.

Matching Requirement: 25 *Phone:* 202-646-4621 *Webpage:* www.fema.gov/mit/

Program: **Protection of Essential Highways, Highway Bridge Approaches, and Public Works**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: Provides bank protection of highways, highway bridges, essential public works, churches, hospitals, schools, and other nonprofit public services endangered by flood-caused erosion. Cost-share basis, but Federal limit of $1 million.

Matching Requirement: 0 *Phone:* 202-761-1975 *Webpage*:aspe.os.dhhs.gov/CFDA/p12105.htm

Program: **Snagging and Clearing for Flood Control**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: To reduce flood damages. In most cases project studies will be at Federal expense. Cost-sharing is required for projects, but the Federal part cannot exceed $500,000,000.

Matching Requirement: 0 *Phone:* 202- 761-1975 *Webpage*:www.usace.army.mil/business.html

Program: **Surface Transportation**

Agency: Federal Highway Administration, ISTEA *Agency Type:* Federal

Description: The funds are administered through the state to be used on any roads except for local minor collectors. The state must also set aside 10% of the state allocated funds for transportation enhancement projects which can include beautification projects along the roadways, wetland mitigation or other measures to prevent runoff from polluting local waterways.

Matching Requirement: 0 *Phone:* 202-466-2636 *Webpage:* www.tea21.org/

Program: **Technical Assistance and Training Grants**

Agency: Water and Waste Rural Utilities Service, USDA *Agency Type:* Federal

Description: Provides technical assistance and training to associations on a wide range of issues relating to the delivery of water and waste disposal service for rural communities with a population of 10,000 or less. Funds may be used to assist communities and rural areas identify and evaluate solutions to water or wastewater problems, improve facility operation and maintenance activities, or prepare funding applications for water or wastewater treatment facility construction projects.

Matching Requirement: 0 *Phone:* 202-690-2670 *Webpage*:www.usda.gov/rus/water/programs.htm

Program: **Water and Waste Disposal Grants**

Agency: Water and Waste Rural Utilities Service, USDA *Agency Type:* Federal

Description: Program to reduce water and waste disposal costs to a reasonable level for rural users. Grants may be made for up to 75 percent of eligible project costs in some cases.

Matching Requirement: 25 *Phone:* 202-690-2670 *Webpage: w*ww.usda.gov/rus/water/programs.htm

Program: **Water and Waste Disposal Loans**

Agency: Water and Waste Rural Utilities Service, USDA *Agency Type:* Federal

Description: The loan can be used to provide the local sponsors share of the cost of watershed projects such as flood prevention, irrigation, water quality management, sedimentation control, recreation and water storage. The total amount of the loans to one watershed may not exceed $10,000,000. For development of water and waste disposal (including solid waste disposal and storm drainage) systems in rural areas and towns with a population not in excess of 10,000.

Matching Requirement: 0 *Phone:* 202-690-2670 *Webpage*:www.usda.gov/rus/water/programs.htm

Program: **Watershed Protection and Flood Prevention**

Agency: Natural Resources Conservation Service, USDA *Agency Type:* Federal

Description: Technical and financial assistance to voluntarily plan, design and construct watershed-based projects on private lands. Watershed plans involving an estimated Federal contribution in excess of $5 million for construction, or construction of any single structure having a capacity in excess of 2,500 acre feet, require Congressional committee approval.

Matching Requirement: 0 *Phone:* 202-720-3534 **W***ebpage:* www.ftw.nrcs.usda.gov/pl566/pl566.html

Primary Funding Area: **Support Service**

Program: **Weatherization Assistance for Low-Income Persons**

Agency: Office of Energy Efficiency and Renewable Energy, DOE *Agency Type:* Federal

Description: To insulate the dwellings of low-income persons, particularly the elderly, persons with disabilities, families with children, high residential energy users, and households with a high energy burden, in order to conserve needed energy and to aid those persons least able to afford higher utility costs.

Matching Requirement: 0 *Phone:* 202-586-4074 *Webpage*:aspe.os.dhhs.gov/cfda/p81042.htm

Program: **Business and Industry Loans**

Agency: Rural Business-Cooperative Service, DOA *Agency Type:* Federal

Description: Assists public, private, or cooperative organizations (profit or nonprofit), Indian tribes or individuals in rural areas to obtain quality loans for the purpose of improving, developing or financing business, industry, and employment and improving the economic and environmental climate in rural communities including pollution abatement and control.

Matching Requirement: 0 *Phone:* 202-690-4737 *Webpage*:aspe.os.dhhs.gov/cfda/p10768.htm

Program: **Centers for Disease Control and Prevention Investigations and Technical Assistance**

Agency: Centers for Disease Control and Prevention, DHHS *Agency Type:* Federal

Description: Assists State and local health authorities and other health related organizations in controlling communicable diseases, chronic diseases, and other preventable health conditions. Investigations and evaluation of all methods of controlling or preventing disease are carried out by providing epidemic aid, surveillance, technical assistance, consultation, and by providing leadership and coordination of joint national, State, and local efforts.

Matching Requirement: 0 *Phone:* 770-488-2700 *Webpage:* aspe.os.dhhs.gov/cfda/p93283.htm#i37

Program: **Community Facilities Loans and Grants**

Agency: Community Programs, Rural Housing Service, DOA *Agency Type:* Federal

Description: To construct, enlarge, extend, or otherwise improve community facilities providing essential services to rural residents.

Matching Requirement: 0 *Phone:* 202-720-1490 *Webpage:* aspe.os.dhhs.gov/cfda/p10766.htm

Program: **Cora Brown Fund**

Agency: Response and Recovery Directorate, FEMA *Agency Type:* Foundation

Description: To help victims of natural disasters not caused by or attributed to war by providing for disaster-related needs that have not been, or will not be met by government agencies or any other organizations which have programs to address such needs; however, the fund is not intended to replace or supersede these programs. The fund may not be used in a way that disaster-related home repair and rebuilding; (2) disaster-related unmet needs; and (3) other services which alleviate human suffering and promote the well being of disaster victims. They are identified and recommended by the Regional Director or his/her representatives, with assistance from other governmental agencies and voluntary disaster agencies.

Matching Requirement: 0 *Phone:* 202- 646-3642 *Webpage:* aspe.os.dhhs.gov/cfda/p83538.htm#i37

Program: **Direct Housing: Natural Disaster**

Agency: Rural Housing Service, DOA *Agency Type:* Federal

Description: Assists qualified lower income rural families to meet emergency assistance needs resulting from natural disaster to buy, build, rehabilitate, or improve dwellings in rural areas. Funds are only available to the extent that funds are not provided by FEMA. For the purpose of administering these funds, natural disaster will only include those areas identified by a Presidential declaration.

Matching Requirement: 0 *Phone:* 202-720-1474 *Webpage:* aspe.os.dhhs.gov/cfda/p10445.htm

Program: **Disaster Housing Assistance**

Agency: Human Services Division, Response and Recovery Directorate, FEMA *Agency Type:* Federal

Description: Housing assistance for victims in declared disaster areas. Assistance can include temporary housing reimbursement, home repair assistance, assistance towards rent, assistance towards mortgage. Applicants must provide proof of residency or ownership, hardship caused by the disaster, damage caused by the disaster. Additional information may need to include notice of eviction or foreclosure proceedings, total repair estimates, and temporary housing receipts.

Matching Requirement: 0 *Phone:* 202-646-4600 *Webpage:* www.fema.gov/

Program: **Disaster Unemployment Assistance**

Agency: Human Services Division, Response and Recovery Directorate, FEMA *Agency Type:* Federal

Description: Provides unemployment benefits for those individuals left jobless due to a declared major disaster who are not eligible for standard unemployment insurance benefits. Available funds to be used for compensation and administrative costs.

Matching Requirement: 0 *Phone:* 202-646-4600 *Webpage:* www.fema.gov/

Program: **Economic Development - Support for Planning Organizations**

Agency: Economic Development Administration, Planning and Development Assistance Division, Dept. of Commerce *Agency Type:* Federal

Description: Provides administrative aid to multi-county Economic Development Districts and Redevelopment Areas. The grants fund administrative cost involved in the operation of the organization. Primarily designated for areas with up to 250,000 population, high and persistent unemployment or underemployment.

Matching Requirement: 0 *Phone:* 202-482-5081 *Webpage:* hom.doc.gov/

Program: **Emergency Food and Shelter National Board**

Agency: HUD *Agency Type:* Federal

Description: Supplements the work of local private and governmental social service organizations to help people in need of emergency assistance. This collaborative effort between the private and The National Board uses a formula involving population, poverty, and unemployment data to determine the eligibility of a civil jurisdiction. There is no national application process. Board is chaired by FEMA.

Matching Requirement: 0 *Phone:* 703-706-9660 *Webpage:* www.efsp.unitedway.org/efspnew/Page

Program: **Emergency Shelter Grants**

Agency: Community Planning and Development, HUD *Agency Type:* Federal

Description: Emergency shelters and housing for homeless individuals. Funds are available through the State. Funds must be used for renovation, alterations or conversions of buildings to homeless shelters. Services for the homeless may make up to 30% of the funds while administrative costs are not be more than 5% of the fund. Local municipalities and non-profit organizations may apply directly to the State.

Matching Requirement: 0 *Phone:* 202-708-1455 *Webpage:* www.hud.gov/offices/cpd/homeless/pro

Program: **Employment and Training Assistance - Dislocated Workers**

Agency: Employment and Training Administration, DOL *Agency Type:* Federal

Description: Funds used to provide job-training, job-search, placement assistance and other services to assist dislocated workers obtain jobs.

Matching Requirement: 0 *Phone:* 202-219-5690 *Webpage:* www.doleta.gov/

Program: **Grants for Public Works and Economic Development**

Agency: Public Works Division, Economic Development Administration, DOC *Agency Type:* Federal

Description: Promotes long-term economic development and assists in the construction of public works and development facilities needed to initiate and support the creation or retention of permanent jobs in the private sector in areas experiencing substantial economic distress.

Matching Requirement: 0 *Phone:* 202-482-5265. *Webpage:* aspe.os.dhhs.gov/cfda/p11300.htm#i11

Program: **Home Investment Partnership Program**

Agency: Community Planning and Development, HUD *Agency Type:* Federal

Description: HOME allocates funds by formula in a block grant to States, urban counties, cities, and specially authorized consortia of jurisdictions for a variety of housing, depending upon the State's or local government's needs.

Matching Requirement: 0 *Phone:* 800-245-2691 *Webpage:* www.hud.gov

Program: **Impact Aid Disaster Assistance Program**

Agency: Office of Elementary and Secondary Education, USDE *Agency Type:* Federal

Description: Funds are available to schools impacted by a declared disaster. Applications must be submitted within 90 days of the declaration and can be used to offset the loss of revenue and disaster recovery costs. (Lenders who have made or hold federal college or university student loans also were directed to provide financial relief from monthly loan payments to those borrowers affected by the 9-11-01 terrorist attacks in New York City.)

Matching Requirement: 0 *Phone:* 202-401-2311 *Webpage:* www.ed.gov/offices/OESE/

Program: **Individual and Family Grants**

Agency: Human Services Division, Response and Recovery Directorate, FEMA *Agency Type:* Federal

Description: To provide funds for the necessary expenses and serious needs of disaster victims, which cannot be met through other forms of disaster assistance or through other means such as insurance.

Matching Requirement: 0 *Phone:* 202-646-3685 *Webpage*:aspe.os.dhhs.gov/cfda/p83543.htm#i37

Program: **Mortgage Insurance, Homes for Disaster Victims**

Agency: Single Family Development Division, Office of Insured Single Family Housing, HUD *Agency Type:* Federal

Description: Loans available to individuals or families who are victims of a major disaster for the purchase of homes. HUD insures the lenders for possible losses from the mortgages on these homes. Those eligible must have resided in housing that was damaged or destroyed in a Presidentially- declared disaster.

Matching Requirement: 0 *Phone:* 202-708-1455 *Webpage:* www.hudclips.org/cgi/index.cgi

Program: **Public Health and Social Services Emergency Fund**

Agency: Dept. Health and Human Services *Agency Type:* Federal

Description: To provide supplemental funding for public health and social service emergencies.

Matching Requirement: 0 *Phone:* 301-443-1167 *Webpage*:aspe.os.dhhs.gov/CFDA/p93003.htm#i

Program: **Rural Business Enterprise Grants**

Agency: Rural Business-Cooperative Service, DOA *Agency Type:* Federal

Description: Facilitates the development of small and emerging private business, industry, and related employment for improving the economy in rural communities.

Matching Requirement: 0 *Phone:* 202-720-1400 *Webpage:* aspe.os.dhhs.gov/cfda/p10769.htm

Program: **Rural Business Opportunity Grants**

Agency: Rural Business-Cooperative Service, USDA *Agency Type:* Federal

Description: To promote sustainable economic development in rural communities with exceptional needs.

Matching Requirement: 0 *Phone:* 202-720-1400. *Webpage:*aspe.os.dhhs.gov/cfda/p10773.htm

Program: **Rural Housing Site Loans and Self: Help Housing Land Development Loans**

Agency: Rural Housing Service, DOA *Agency Type:* Federal

Description: Assists public or private nonprofit organizations interested in providing sites for housing; to acquire and develop land in rural areas to be subdivided as adequate building sites and sold on a cost development basis to families eligible for low and very low income loans, cooperatives, and broadly based nonprofit rural rental housing applicants.

Matching Requirement: 0 *Phone:* 202-720-1474 *Webpage:* aspe.os.dhhs.gov/cfda/p10411.htm

Program: **SBA Disaster Assistance**

Agency: Small Business Administration *Agency Type:* Federal

Description: Provides low interest, fixed rate loans to disaster victims, enabling them to repair or replace property damaged or destroyed in declared disasters. It also offers such loans to affected small businesses to help them recover from economic injury caused by such disasters. (SBA offers three kinds of disaster loans: physical disaster home loans, physical disaster business loans, and economic injury business loans.)

Matching Requirement: 0 *Phone:* 202-205-6734 *Webpage:* www.disastercenter.com/laworder/sbal

Program: **Temporary Assistance for Needy Families**

Agency: Administration for Children and Families, Office of Family Assistance, DHHS *Agency Type:* Federal

Description: Provides temporary emergency assistance for families with children. A State must establish financial eligibility criteria for benefits under either of these purposes.

Matching Requirement: 0 *Phone:* by state *Webpage:* www.acf.dhhs.gov/programs/ofa/

Program: **Very Low to Moderate Income Housing Loans**

Agency: Rural Housing Service, DOA *Agency Type:* Federal

Description: Assists very low and low-income families through direct loans to buy, build, rehabilitate, or improve and to provide the customer with modest, decent, safe, and sanitary dwellings and related facilities as a permanent residence in rural areas. Subsidized funds are available on direct loans only for low and very low-income applicants. Non-subsidized funds (loan making) are available for very low and low-income applicants who are otherwise eligible for subsidy, but at the present time, the subsidy is not needed. Loan guarantees are also available to assist low and moderate income rural families in home acquisition.

Matching Requirement: 0 *Phone:* 202-720-1474 *Webpage:* aspe.os.dhhs.gov/cfda/p10410.htm

Program: **Very Low-Income Housing Repair Loans and Grants**

Agency: Rural Housing Service, DOA *Agency Type:* Federal

Description: To give very low-income rural homeowners an opportunity to make essential repairs to their homes to make them safe and to remove health hazards to the family or the community.

Matching Requirement: 0 *Phone:* 202-720-1474 *Webpage:* aspe.os.dhhs.gov/cfda/p10417.htm

Primary Funding Area: **Training - Emergency Services**

Program: **Chemical Emergency Preparedness and Prevention Technical Assistance Grants**

Agency: Chemical Emergency Preparedness and Prevention Office, EPA *Agency Type:* Federal

Description: Grants awarded for accident prevention and emergency preparedness programs for chemical accident emergencies. All project periods must not be more than two years long.

Matching Requirement: 25 *Phone:* 202-260-6657 *Webpage:* www.epa.gov/swercepp

Program: **Emergency Management Institute Training Assistance**

Agency: EMI, FEMA *Agency Type:* Federal

Description: To defray travel and per diem expenses of State, local and tribal emergency management personnel who attend training courses conducted by the Emergency Management Institute, at the Emmetsburg, Maryland facility; Bluemont, Virginia facility; and selected off-site locations. Its purpose is to improve emergency management practices among State, local and tribal government managers, in response to emergencies and disasters.

Matching Requirement: 0 *Phone:* 301-447-1000. *Webpage:* aspe.os.dhhs.gov/cfda/p83527.htm

Program: **Hazardous Materials Emergency Preparedness Grant**

Agency: Hazardous Materials Emergency Preparedness, DOT *Agency Type:* Federal

Description: Provides financial and technical assistance as well as national direction and guidance to enhance State and local hazardous materials emergency planning and training.

Matching Requirement: 0 *Phone:* 202-366-0001 *Webpage:* www.usfa.fema.gov/hazmat/hmep/bkgr

Program: **Hazardous Materials Training Program for Implementation of the Superfund Amendment and Reauthorization Act (SARA) of 1986**

Agency: FEMA *Agency Type:* Federal

Description: To provide training in support of Tribal governments emergency planning, preparedness, mitigation, response, and recovery capabilities. These programs must provide special emphasis on emergencies associated with hazardous chemicals. U.S. territories must apply for Emergency Management Performance Grants.

Matching Requirement: 20 *Phone:* 202- 646-4516 *Webpage:* www.fema.gov http://www.fema.gov

Program: **National Fire Academy Training Assistance**

Agency: National Fire Academy, US Fire Administration, FEMA *Agency Type:* Federal

Description: Provides travel stipends to students attending Academy courses.

Matching Requirement: 0 *Phone:* 301-447-1035 *Webpage:* aspe.os.dhhs.gov/cfda/p83009.htm

Primary Funding Area: **Wetlands Development/Restoration**

Program: **Capitalization Grants for Clean Water State Revolving Funds**

Agency: Assessment and Watershed Protection Division, Office of Wetlands, Oceans and Watersheds, EPA *Agency Type:* Federal

Description: Funding through regional offices include The National Estuary Program, The Wetlands Protection State Development Grant Program and the Non-point Source Implementation Grant Program.

Matching Requirement: 20 *Phone:* 202-260-7166 *Webpage:* www.epa.gov/OWOW

Program: **Conservation Technical Assistance**

Agency: Natural Resources Conservation Service, USDA *Agency Type:* Federal

Description: The purpose of the program is to assist land-users, communities, units of state and local government, and other Federal agencies in planning and implementing conservation systems. The purpose of the conservation systems are to reduce erosion, improve soil and water quality, improve and conserve wetlands, enhance fish and wildlife habitat, improve air quality, improve pasture and range condition, reduce upstream flooding, and improve woodlands.

Matching Requirement: 0 *Phone:* 202- 720-1604 *Webpage:* www.nrcs.usda.gov/NRCSProg.html#

Program: **Farmable Wetlands Pilot**

Agency: Farm Service Agency, USDA *Agency Type:* Federal

Description: Voluntary program to restore up to 500,000 acres of farmable wetlands and associated buffers by improving the land's hydrology and vegetation. Eligible producers in Iowa, Minnesota, Montana, Nebraska, North Dakota, and South Dakota can enroll eligible land in the FWP through the Conservation Reserve Program (CRP). Restoring wetlands will reduce downstream flood damage, improve surface and groundwater quality, and recharge groundwater supplies. FWP contracts are from 10 to 15 years in exchange for annual rental payments, incentive payments, and cost-share for installing necessary practices.

Matching Requirement: 0 *Phone:* 202-720-7807 *Webpage:* www.fsa.usda.gov/pas/disaster/default.

Program: **Flood Hazard Mitigation and Riverine Ecosystem Restoration**

Agency: U.S. Army Corps of Engineers *Agency Type:* Federal

Description: Informally known as Challenge 21, this watershed-based program focuses on identifying sustainable solutions to flooding problems by examining nonstructural solutions in flood-prone areas, while retaining traditional measures where appropriate. Eligible projects will meet the dual purpose of flood hazard mitigation and riverine ecosystem restoration. Projects might include the relocation of threatened structures, conservation or restoration of wetlands and natural floodwater storage areas and planning for responses to potential future floods.

Matching Requirement: 50 *Phone:* 202-761-0115 *Webpage:*www.epa.gov/owow/watershed/wacade

Program: **North American Wetlands Conservation Act Grants**

Agency: Fish and Wildlife Service *Agency Type:* Federal

Description: Provides matching grants to carry out wetlands conservation projects in the United states, Canada, and Mexico. Both the Standard and Small Grants programs help deliver funding to on-the-ground projects through the protection, restoration, or enhancement of an array of wetland habitats.

Matching Requirement: 0 *Phone:* 703-358-1784 *Webpage:* www.epa.gov/owow/watershed/wacade

Program: **North American Wetlands Conservation Fund**

Agency: Fish and Wildlife Service, DOI *Agency Type:* Federal

Description: To provide grant funds for wetlands conservation projects, such as acquisition, restoration, and enhancement of wetlands and wetlands ecosystems.

Matching Requirement: 0 *Phone:* 703-358-1784 *Webpage:* aspe.os.dhhs.gov/cfda/p15623.htm

Program: **Oil Spill Liability Trust Fund**

Agency: US Coast Guard, USDT *Agency Type:* Federal

Description: Program provides funding for the immediate response and removal of oil spills. Although primarily used to offset the onsite costs or removal, funding may also be used to cover administrative costs associated with a particular incident.

Matching Requirement: 0 *Phone:* 202-267-2229 *Webpage:* www.uscg.mil/

Program: **Partners for Fish and Wildlife**

Agency: Fish and Wildlife Service, Branch of Habitat Restoration, USDI *Agency Type:* Federal

Description: Voluntary habitat restoration in cooperation with private landowners. Provides technical and financial assistance to restore wetlands, streams and river corridors, prairie, grasslands and other important fish and wildlife habitats for Federal trust species (migratory birds, threatened and endangered species, anadromous fish, and some marine mammals).

Matching Requirement: 50 *Phone:* 703-358-2201 *Webpage:* partners.fws.gov/

Program: **Sustainable Development Challenge Grant**

Agency: Office of Air and Radiation, EPA *Agency Type:* Federal

Description: Grants provided to encourage private-public partnership that promotes economically and environmentally sustainable development in the community.

Matching Requirement: 0 *Phone:* 202-564-7400 *Webpage:* www.epa.gov/

Program: **Watershed Program and Flood Prevention (Small)**

Agency: Natural Resources Conservation Services, USDA *Agency Type:* Federal

Description: Provides planning assistance to Federal, State, and local agencies for the development of coordinated water and related land resources programs in watersheds and river basins. Works through local government sponsors and helps participants solve natural resource and related economic problems on a watershed basis. Projects include watershed protection, flood prevention, erosion and sediment control, water supply, water quality, fish and wildlife habitat enhancement, wetlands creation and restoration, and public recreation in watersheds of 250,000 or fewer acres. Both technical and financial assistance are available.

Matching Requirement: 0 *Phone:* 202-720-3534 *Webpage*:www.nrcs.usda.gov/NRCSProg.html

Program: **Wetlands Conservation Projects**

Agency: Fish and Wildlife Service, North American Waterfowl and Wetlands Office, DOI *Agency Type:* Federal

Description: Promote long-term conservation of North American wetland ecosystems and the waterfowl and other migratory birds, fish and wildlife that depend upon such habitats through partnerships. Principle conservation actions supported are acquisition, creation, enhancement, and restoration of wetlands and wetlands-associated habitat. Grant amount: is $50,000 maximum.

Matching Requirement: 0 *Phone:* 703-358-1784 *Webpage: w*ww.fws.gov/cep/cwgfact.html

Program: **Wetlands Program Development Grants**

Agency: Office of Water, EPA *Agency Type:* Federal

Description: Provide financial assistance to states, federally- recognized Indian tribes, and local governments to

support development of new, or augmentation and enhancement of existing wetland programs. Projects must clearly demonstrate a direct link to an increase in the state's, tribe's, or local government's ability to protect its wetland resources.

Matching Requirement: 25 *Phone:* 800-832-7828 *Webpage:* www.epa.gov/owow/wetlands/2002gran

Program: **Wetlands Protection Grants**

Agency: Office of Water, EPA *Agency Type:* Federal

Description: Protection of wetlands through plan development, development of model prototype projects such as effective wetland monitoring, innovative watershed protection.

Matching Requirement: 0 *Phone:* 800-832-7828 *Webpage:*/www.epa.gov/R5water/wshednps/pdf/w

Program: **Wetlands Reserve**

Agency: Natural Resources Conservation Service, USDA *Agency Type:* Federal

Description: Offers landowners the opportunity to protect, restore, and enhance wetlands and wildlife habitat on their property through technical and financial support. Efforts are aimed at long-term conservation and wildlife practices and protection.

Matching Requirement: 0 *Phone:* 202-720-1067 *Webpage:* www.ftw.nrcs.usda.gov/pl566/pl566.html

Program: **Wildlife Habitat Incentives**

Agency: Natural Resources Conservation Service, USDA *Agency Type:* Federal

Description: For development and improvement of wildlife habitat primarily on private land and aquatic areas. Provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP agreements between NRCS and the participant generally last from 5 to 10 years from the date the agreement is signed.

Matching Requirement: 25 *Phone:* 202-720-1067 *Webpage:* www.ftw.nrcs.usda.gov/pl566/pl566.html

APPENDIX 6

COMMUNITY/CRITICAL FACILITIES

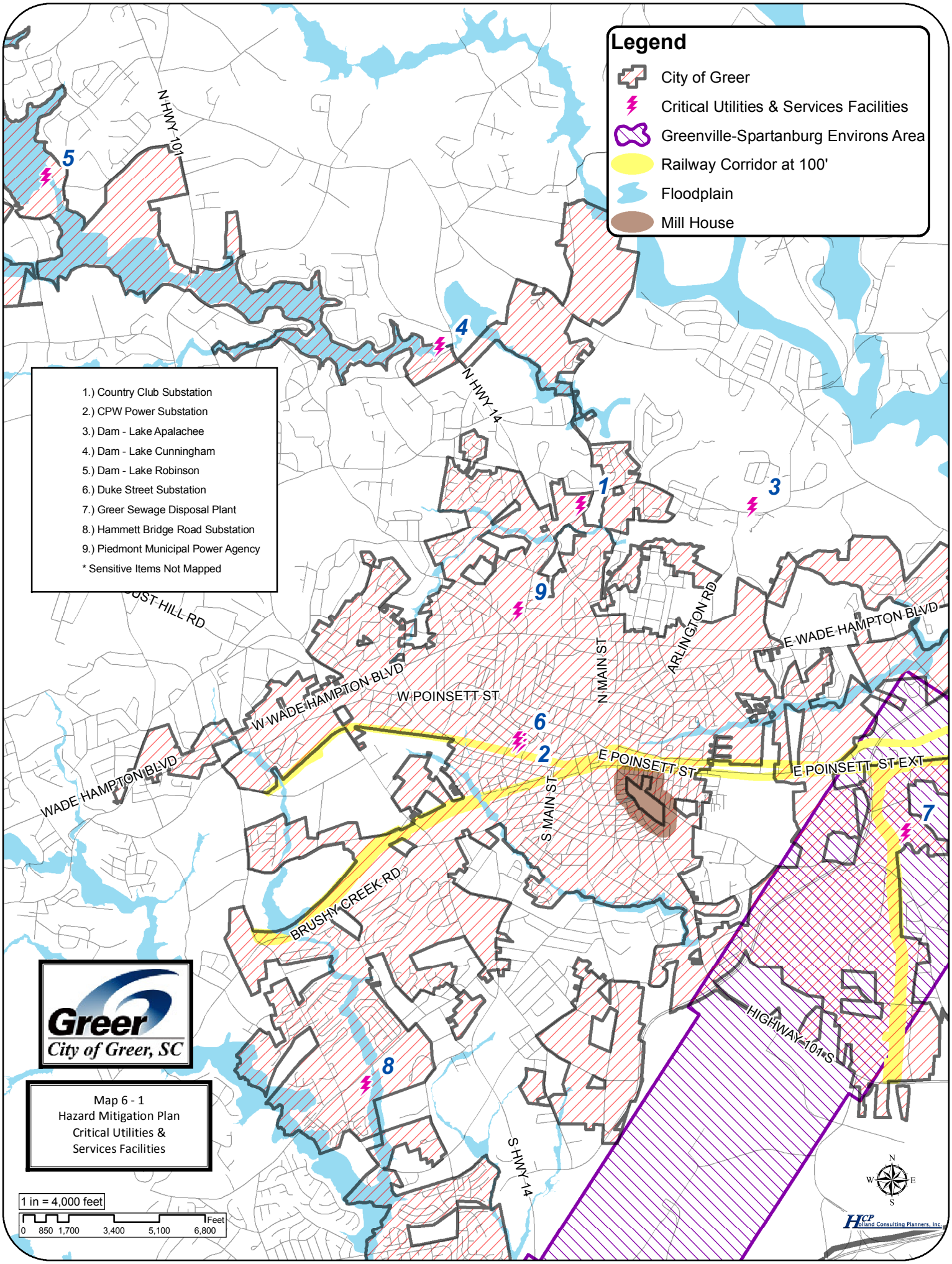
	Community Facility	Key Function	Vulnerability to Natural Hazards (low, moderate, high)	Vulnerability to Man-Made Hazards (low, moderate, high)
Utilities & Services (see Map 6-1)				
1	Water Distribution Lines	Water Supply	Low	High
2	Fire Hydrants	Fire Suppression	Moderate	Moderate
3	Regulation Systems	Pressure Regulation	Moderate	High
4	Propane Air Plant	Peak Sharing	Moderate	High
5	Utility Operations Center (CPW)	Utility Management	Low	Moderate
6	Utility IT Systems	Utility Management & Control	Low	Moderate
7	Sewer Lines and System	Collection	Low	Moderate
8	Power Distribution Lines	Distribution	High	High
9	Duke Street Substation	Power Source	High	High
10	Country Club Substation	Power Source	High	High
11	Hammett Bridge Rd. Substation	Power Source	High	High
12	Natural Gas Lines	Distribution	Low	High
13	Transco Meter Station (Crescent)	Gas Supply	Moderate	High
14	Transco Meter Station (Landrum)	Gas Supply	Moderate	High
15	Watershed/Pumping	Water	Low	Moderate
16	CPW Chlorine Storage	Water Purification	Moderate	Moderate
17	Water Treatment Plant	Water Treatment	Low	High
18	Cunningham Lake & Dam	Water Source	Low	Moderate

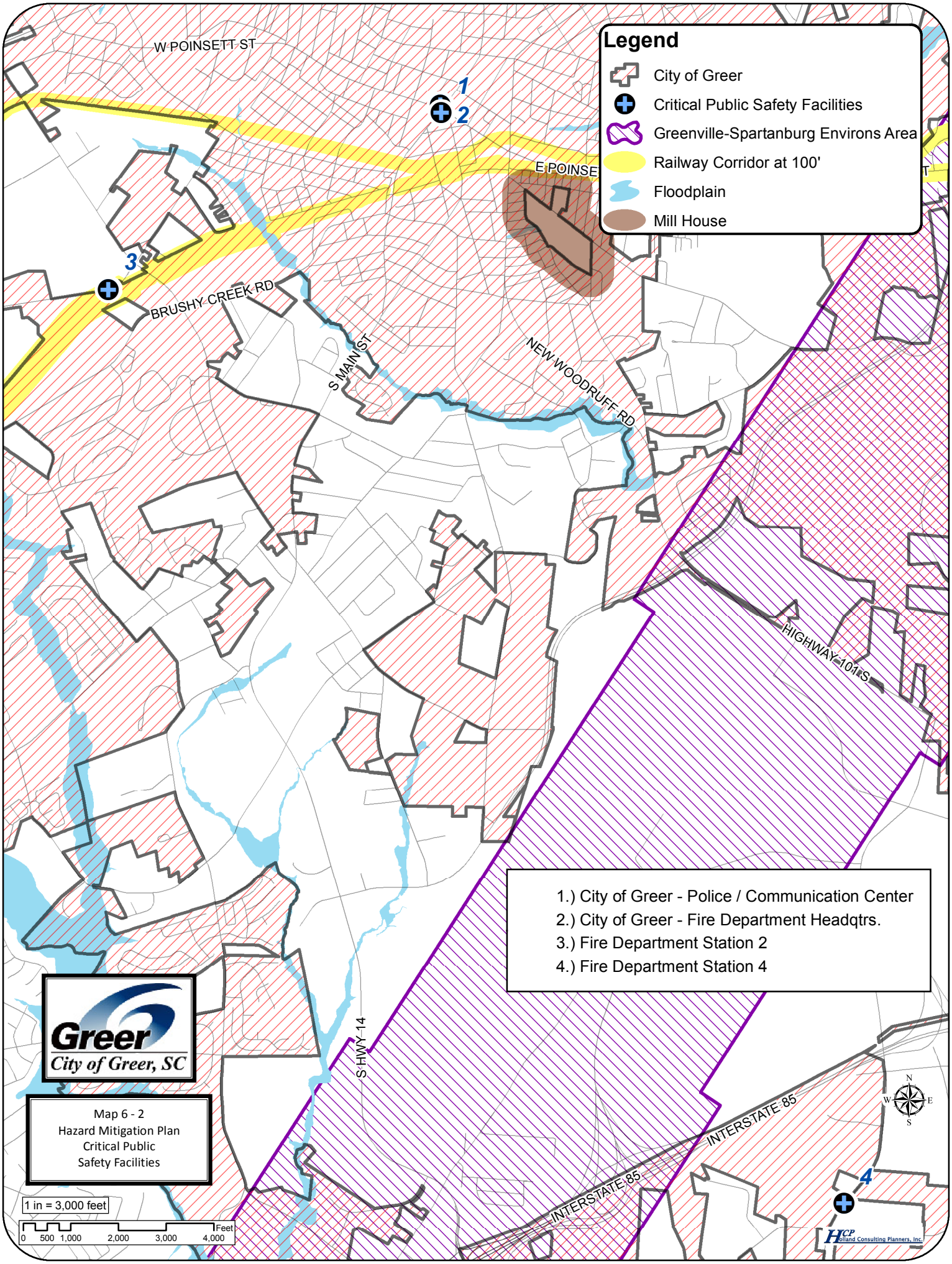
	Community Facility	Key Function	Vulnerability to Natural Hazards (low, moderate, high)	Vulnerability to Man-Made Hazards (low, moderate, high)
19	Robinson Lake & Dam	Water Source	Low	High
20	Apalachee Dam	Water Retention	Moderate	Moderate
Public Safety (see Map 6-2)				
21	Emergency Shelters	Emergency Response	Moderate	Moderate
22	Communication Center (Police & Fire)	Public Safety	Moderate	Moderate
23	Repeater/Receiver	Communications	Moderate	Low
24	Police Department	Public Safety	Moderate	Moderate
25	Fire Department	Public Safety	Moderate	Moderate
26	Repeater/Receiver	Communications	Moderate	Low
Medical Facilities (see Map 6-3)				
27	Private Medical Facilities (Including Assisted Care/Retirement Facilities)	Medical	Low	Low
28	Greer Memorial Hospital	Medical	Moderate	Moderate
29	Spartanburg Hospital	Medical	Moderate	Moderate
30	Spt. Regional Hospital – Greer Campus	Medical	Moderate	Low
31	Village at Pelham	Medical	Moderate	Moderate
Municipal Facilities (see Map 6-4)				
32	City Fuel Depot	City Fuel Source	Moderate	Moderate
33	City Transfer Station	Solid Waste Transfer	Low	Low

	Community Facility	Key Function	Vulnerability to Natural Hazards (low, moderate, high)	Vulnerability to Man-Made Hazards (low, moderate, high)
34	Public Works Operations Center	Public Services	Low	Moderate
35	City Hall	Municipal Services	Moderate	Moderate
36	City Gas Pumps	Fuel	Low	Moderate
Institutional Uses (see Map 6-5)				
37	Greer Middle & High School	Education/Shelter	Low	Moderate
38	Riverside Middle & High School	Education/Shelter	Low	Moderate
39	J. Harley Bonds Career School	Education/Shelter	Low	Moderate
40	Chandler Creek Elementary	Education/Shelter	Low	Moderate
41	Woodland Elementary	Education/Shelter	Low	Moderate
42	Dunbar Child Development	Education/Shelter	Low	Moderate
43	Library	Education	Low	Low
44	Greer Opry	Entertainment/Shelter	Low	Moderate
45	Churches	Potential Shelters	Low	Moderate
Transportation Facilities (see Map 6-6)				
46	Traffic Signals	Traffic Control	Moderate-High	Moderate
47	Bridges	Transportation/Flood Control	Moderate	Moderate
48	Railroad Lines	Transport/Transportation	Moderate	High
49	Main Roads/Bridges	Transportation	High	Moderate

	Community Facility	Key Function	Vulnerability to Natural Hazards (low, moderate, high)	Vulnerability to Man-Made Hazards (low, moderate, high)
50	Railroad Switching Points	Train Movement	Low	Moderate
51	Airport (GSP)	Air Traffic/Transportation	Moderate	Low
Hazardous Facilities (see Map 6-7)				
52	EPA defined toxic facilities (manufacturing)	Manufacturing	Moderate	High
53	Underground Storage Tanks (UST)	Storage	Low	Moderate
54	Mitsubishi	Manufacturing	Moderate	Low
55	Honeywell	Manufacturing	Moderate	Moderate
56	Advance Composite	Manufacturing	Moderate	Moderate
57	BMW Manufacturing	Manufacturing	Moderate	Moderate
58	Aiken Chemical Company	Manufacturing	Moderate	Moderate
59	RMAX, Operating LLC	Manufacturing	Moderate	Moderate
60	Safety-Kleen Systems	Manufacturing	Moderate	Moderate
Parks and Recreation Facilities (see Map 6-8)				
61	Tryon Recreation Center	Recreation/Evacuation Shelter	Low	Low
62	Needmore Rec. Center	Recreation/Evacuation Shelter	Low	Low
63	Victor Park Gymnasium	Recreation/Evacuation Shelter	Moderate	Low
64	Horace McKown Center	Recreation/Evacuation Shelter	Moderate	Low
65	Stevens Ball Field	Recreation	Low	Low
66	City Stadium	Recreation	Moderate	Low

	Community Facility	Key Function	Vulnerability to Natural Hazards (low, moderate, high)	Vulnerability to Man-Made Hazards (low, moderate, high)
67	Co. Club Sports Complex	Recreation	Moderate	Low
68	Suber Soccer Complex	Recreation	Low	Low
69	H.B. Turner Park	Recreation	Low	Low
70	Century Ball Complex	Recreation	Moderate	Low
71	Veteran's Park	Recreation/Historical	Low	Low
72	Kid's Planet	Recreation	Moderate	Low
73	Springwood Park	Recreation	High	Low
74	Greentown Park	Recreation	Moderate	Low
75	B.P. Edwards Park	Recreation	Low	Low
76	Victor Mini Park	Recreation	Low	Low
77	Wards Creek Park	Recreation	Moderate	Low
78	Davenport Field	Recreation	Low	Low
79	City Park	Recreation	Moderate	Moderate to High


Legend
City of Greer
Critical Utilities & Services Facilities
Greenville-Spartanburg Environs Area
Railway Corridor at 100'
Floodplain
Mill House
1.) Country Club Substation
2.) CPW Power Substation
3.) Dam - Lake Apalachee
4.) Dam - Lake Cunningham
5.) Dam - Lake Robinson
6.) Duke Street Substation
7.) Greer Sewage Disposal Plant
8.) Hammett Bridge Road Substation
9.) Piedmont Municipal Power Agency
* Sensitive Items Not Mapped
N HWY 101
N HWY 14
OST HILL RD
W WADE HAMPTON BLVD
WADE HAMPTON BLVD
E WADE HAMPTON BLVD
W POINSETT ST
E POINSETT ST
E POINSETT ST EXT
N MAIN ST
S MAIN ST
ARLINGTON RD
BRUSHY CREEK RD
HIGHWAY 101 S
S HWY 14
Greer
City of Greer, SC
Map 6 - 1
Hazard Mitigation Plan
Critical Utilities &
Services Facilities
1 in = 4,000 feet
Feet
0 850 1,700 3,400 5,100 6,800
N
W E
S
HCP Holland Consulting Planners, Inc.


Legend
City of Greer
Critical Public Safety Facilities
Greenville-Spartanburg Environs Area
Railway Corridor at 100'
Floodplain
Mill House
W POINSETT ST
E POINSE
BRUSHY CREEK RD
S MAIN ST
NEW WOODRUFF RD
HIGHWAY 101 S
S HWY 14
INTERSTATE 85
INTERSTATE 85
1
2
3
4
1.) City of Greer - Police / Communication Center
2.) City of Greer - Fire Department Headqtrs.
3.) Fire Department Station 2
4.) Fire Department Station 4
Greer
City of Greer, SC
Map 6 - 2
Hazard Mitigation Plan
Critical Public
Safety Facilities
1 in = 3,000 feet
0 500 1,000 2,000 3,000 4,000 Feet
N
W
E
S
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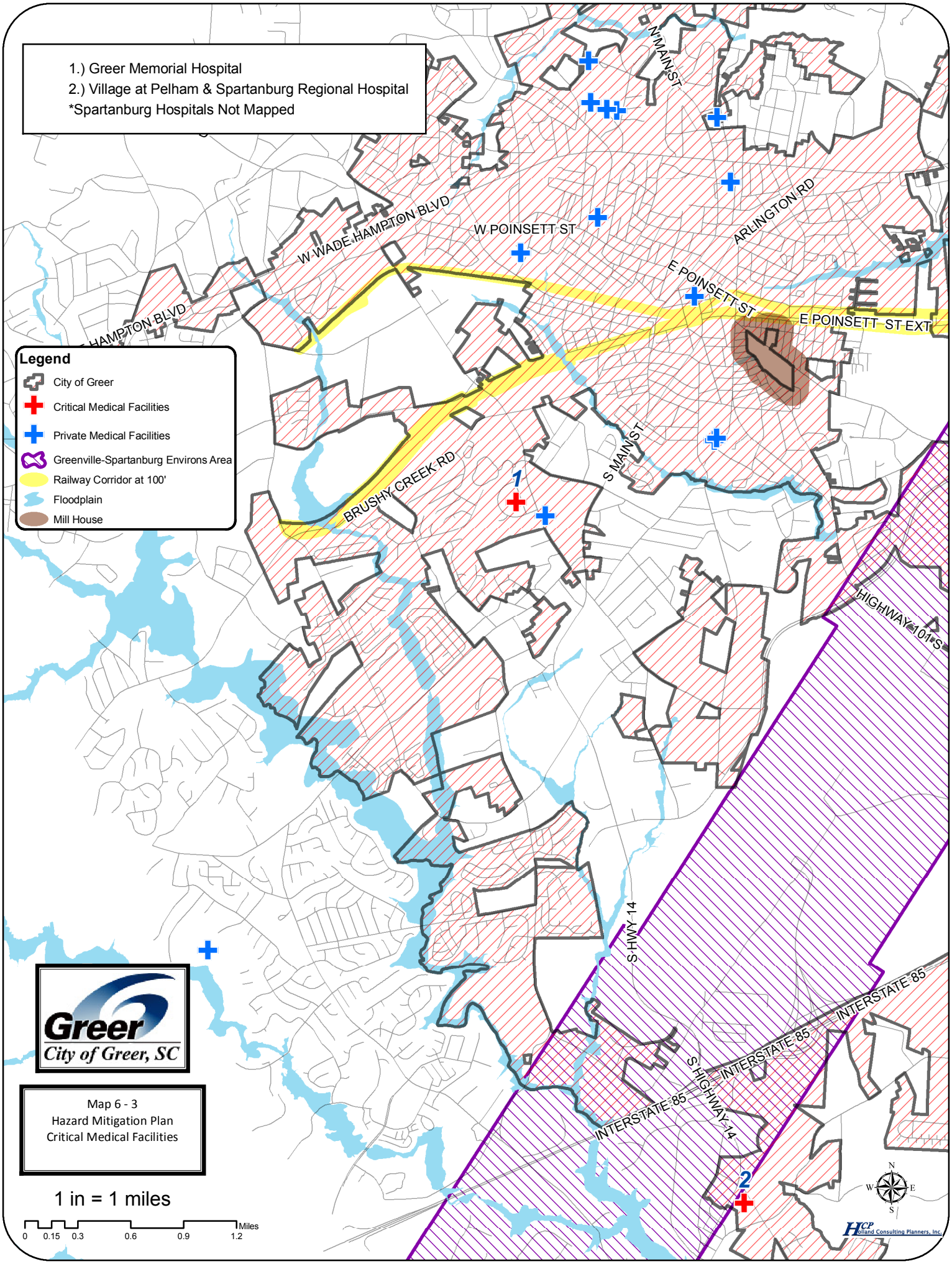
1.) Greer Memorial Hospital
2.) Village at Pelham & Spartanburg Regional Hospital
*Spartanburg Hospitals Not Mapped
Legend
City of Greer
Critical Medical Facilities
Private Medical Facilities
Greenville-Spartanburg Environs Area
Railway Corridor at 100'
Floodplain
Mill House
N MAIN ST
W WADE HAMPTON BLVD
W POINSETT ST
ARLINGTON RD
E POINSETT ST
E POINSETT ST EXT
HAMPTON BLVD
BRUSHY CREEK RD
S MAIN ST
HIGHWAY 101 S
S HWY 14
INTERSTATE 85
INTERSTATE 85
S HIGHWAY 14
INTERSTATE 85
1
2
Greer
City of Greer, SC
Map 6 - 3
Hazard Mitigation Plan
Critical Medical Facilities
1 in = 1 miles
0 0.15 0.3 0.6 0.9 1.2 Miles
N
W E
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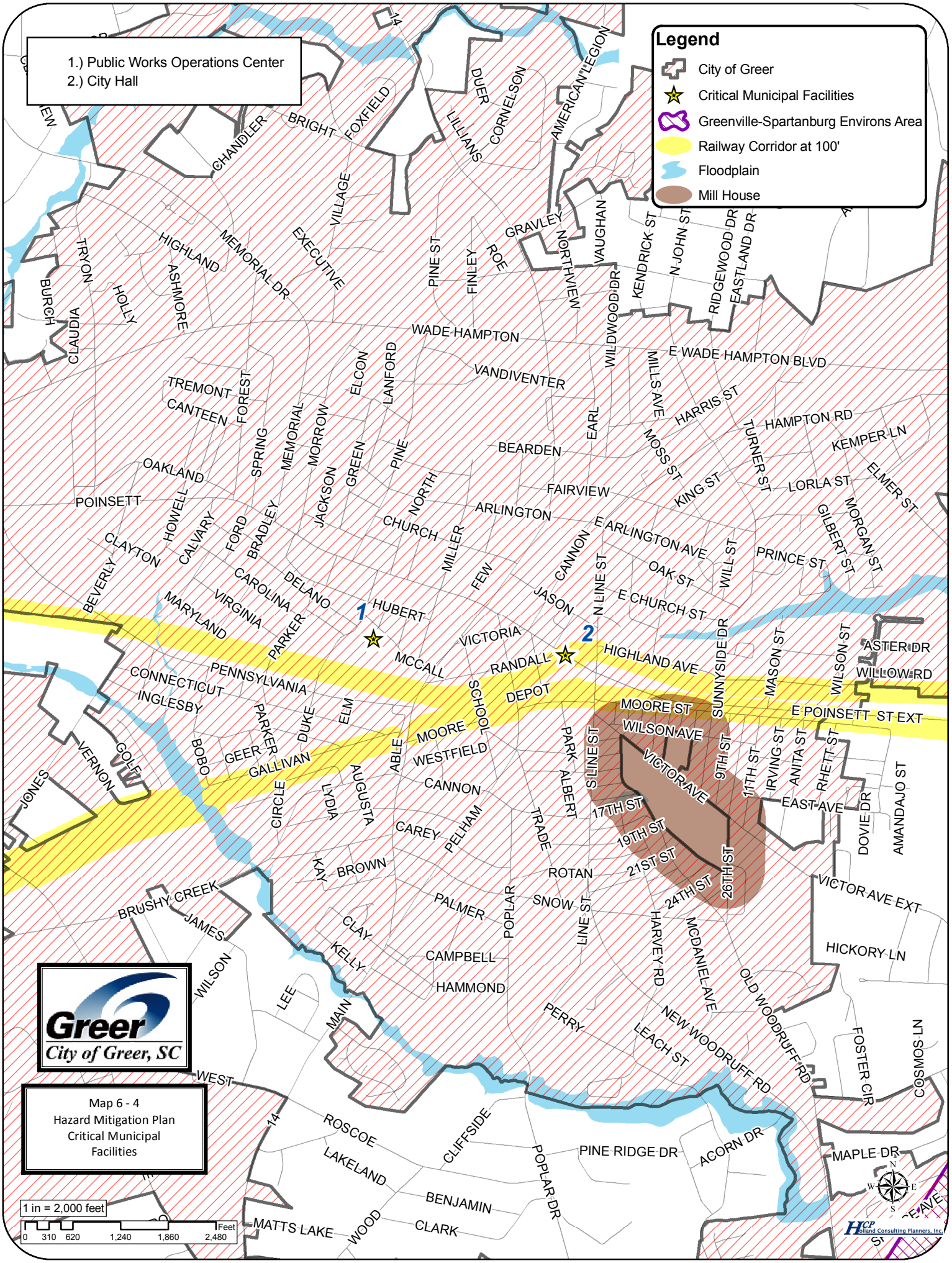
HCP Holland Consulting Planners, Inc.


1.) Public Works Operations Center
2.) City Hall
Legend
City of Greer
Critical Municipal Facilities
Greenville-Spartanburg Environs Area
Railway Corridor at 100'
Floodplain
Mill House
1
2
HUBERT
MCCALL
VICTORIA
RANDALL
HIGHLAND AVE
E CHURCH ST
E ARLINGTON AVE
OAK ST
PRINCE ST
E POINSETT ST EXT
MOORE ST
WILSON AVE
VICTOR AVE
EAST AVE
17TH ST
19TH ST
21ST ST
24TH ST
26TH ST
ROTAN
SNOW
PALMER
CAMPBELL
HAMMOND
PERRY
LEACH ST
NEW WOODRUFF RD
OLD WOODRUFF RD
VICTOR AVE EXT
HICKORY LN
FOSTER CIR
COSMOS LN
MAPLE DR
ACORN DR
PINE RIDGE DR
POPLAR DR
CLIFFSIDE
ROSCOE
LAKELAND
BENJAMIN
CLARK
WOOD
MATTS LAKE
WEST
WILSON
LEE
MAIN
KELLY
CLAY
BROWN
KAY
CAREY
PELHAM
TRADE
ALBERT PARK
S LINE ST
LINE ST
HARVEY RD
MCDANIEL AVE
SUNNYSIDE DR
MASON ST
WILSON ST
ASTER DR
WILLOW RD
DOVIE DR
AMANDAJO ST
RHETT ST
ANITA ST
IRVING ST
11TH ST
9TH ST
SCHOOL
DEPOT
CANNON
WESTFIELD
MOORE
ABLE
AUGUSTA
LYDIA
CIRCLE
GALLIVAN
GEER
BOBO
PARKER
DUKE
ELM
INGLESBY
CONNECTICUT
PENNSYLVANIA
VERNON
GOLF
JONES
BRUSHY CREEK
JAMES
PARKER
VIRGINIA
CAROLINA
MARYLAND
BEVERLY
CLAYTON
DELANO
BRADLEY
FORD
CALVARY
HOWELL
POINSETT
OAKLAND
SPRING
FOREST
TREMONT
CANTEEN
MEMORIAL
MORROW
JACKSON
GREEN
PINE
NORTH
CHURCH
MILLER
FEW
JASON
CANNON
N LINE ST
ARLINGTON
FAIRVIEW
BEARDEN
ELCON
LANFORD
VANDIVENTER
WADE HAMPTON
E WADE HAMPTON BLVD
HARRIS ST
HAMPTON RD
KING ST
MOSS ST
MILLS AVE
EARL
WILDWOOD DR
NORTHVIEW
VAUGHAN
GRAVLEY
ROE
FINLEY
PINE ST
EXECUTIVE
VILLAGE
MEMORIAL DR
HIGHLAND
ASHMORE
HOLLY
TRYON
BURCH
CLAUDIA
CHANDLER
BRIGHT
FOXFIELD
LILLIANS
DUER
CORNELSON
AMERICAN LEGION
KENDRICK ST
N JOHN ST
RIDGEWOOD DR
EASTLAND DR
TURNER ST
LORLA ST
KEMPER LN
ELMER ST
GILBERT ST
MORGAN ST
Greer
City of Greer, SC
Map 6 - 4
Hazard Mitigation Plan
Critical Municipal
Facilities
1 in = 2,000 feet
0 310 620 1,240 1,860 2,480 Feet
N
S
E
W
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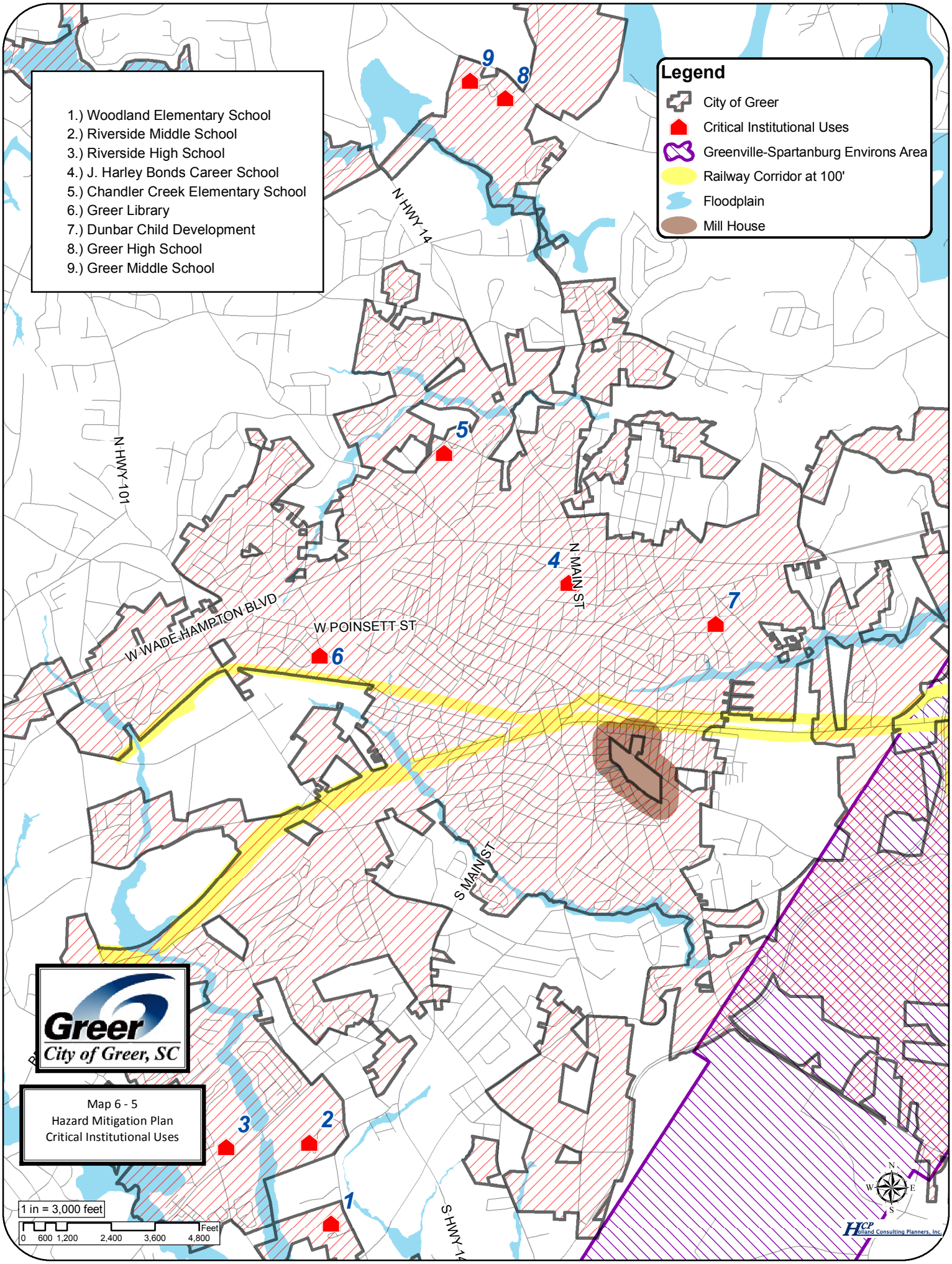
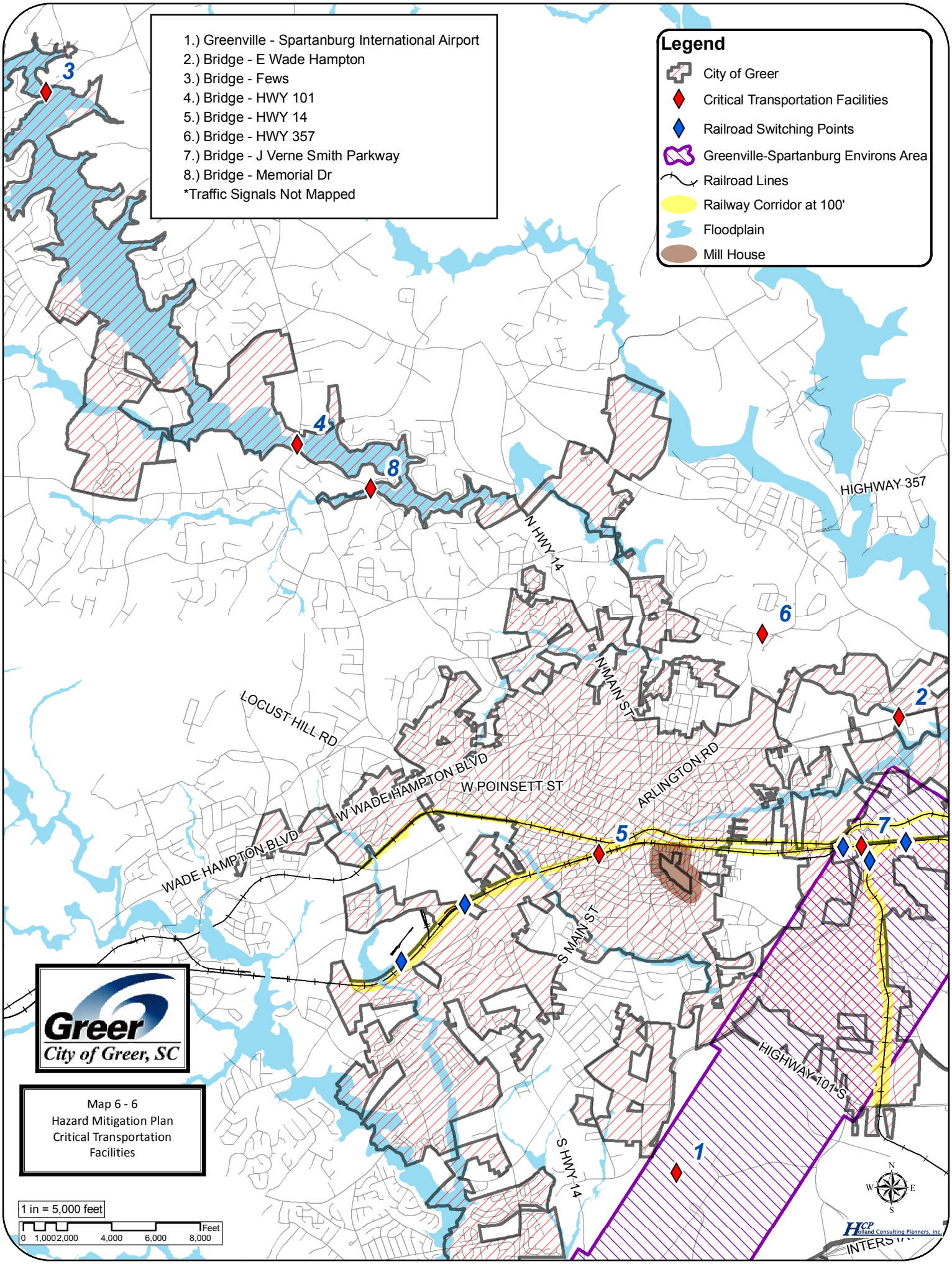
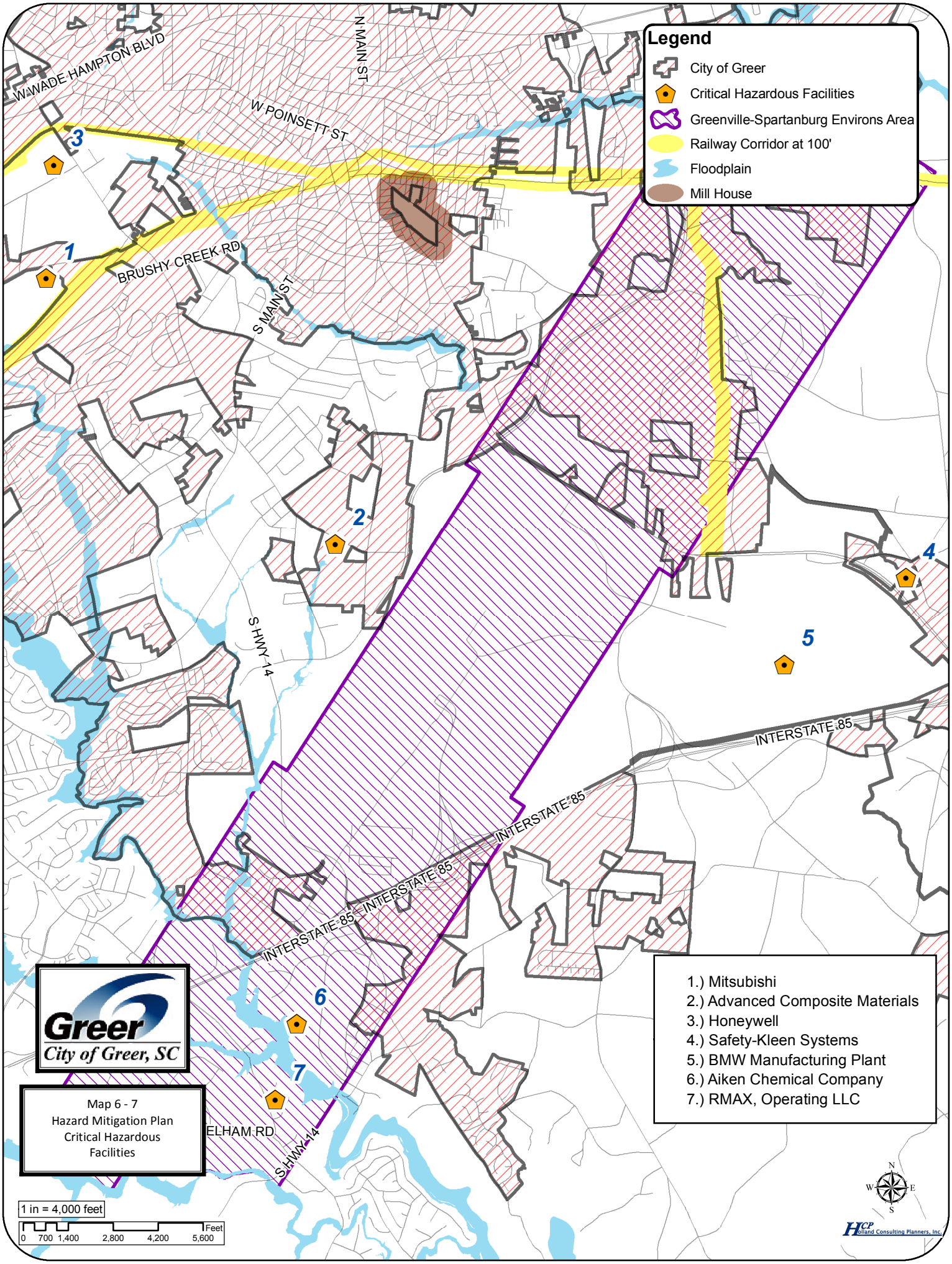
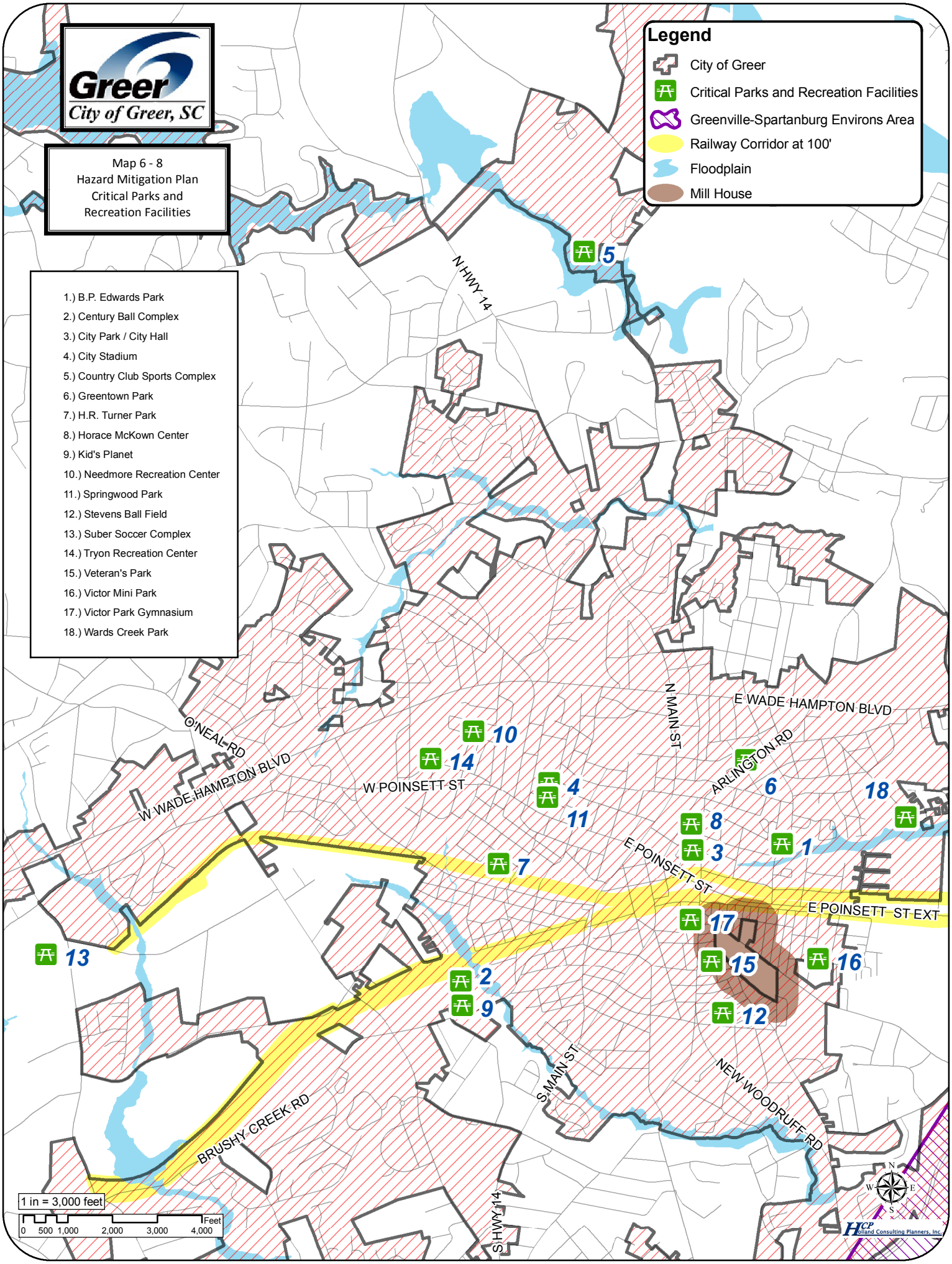

1.) Woodland Elementary School
2.) Riverside Middle School
3.) Riverside High School
4.) J. Harley Bonds Career School
5.) Chandler Creek Elementary School
6.) Greer Library
7.) Dunbar Child Development
8.) Greer High School
9.) Greer Middle School
Legend
City of Greer
Critical Institutional Uses
Greenville-Spartanburg Environs Area
Railway Corridor at 100'
Floodplain
Mill House
N HWY 14
N HWY 101
N MAIN ST
W WADE HAMPTON BLVD
W POINSETT ST
S MAIN ST
S HWY 14
Greer
City of Greer, SC
Map 6 - 5
Hazard Mitigation Plan
Critical Institutional Uses
1 in = 3,000 feet
0 600 1,200 2,400 3,600 4,800 Feet
N
W
E
S
HCP Holland Consulting Planners, Inc.


1.) Greenville - Spartanburg International Airport
2.) Bridge - E Wade Hampton
3.) Bridge - Fews
4.) Bridge - HWY 101
5.) Bridge - HWY 14
6.) Bridge - HWY 357
7.) Bridge - J Verne Smith Parkway
8.) Bridge - Memorial Dr
*Traffic Signals Not Mapped
Legend
City of Greer
Critical Transportation Facilities
Railroad Switching Points
Greenville-Spartanburg Environs Area
Railroad Lines
Railway Corridor at 100'
Floodplain
Mill House
HIGHWAY 357
N HWY 14
LOCUST HILL RD
N MAIN ST
W WADE HAMPTON BLVD
W POINSETT ST
ARLINGTON RD
WADE HAMPTON BLVD
S MAIN ST
HIGHWAY 101 S
S HWY 14
Greer
City of Greer, SC
Map 6 - 6
Hazard Mitigation Plan
Critical Transportation
Facilities
1 in = 5,000 feet
0 1,000 2,000 4,000 6,000 8,000 Feet
N
W
E
S
HCP Holland Consulting Planners, Inc.


Legend
City of Greer
Critical Hazardous Facilities
Greenville-Spartanburg Environs Area
Railway Corridor at 100'
Floodplain
Mill House
W WADE HAMPTON BLVD
N MAIN ST
W POINSETT ST
BRUSHY CREEK RD
S MAIN ST
S HWY 14
INTERSTATE 85
INTERSTATE 85
INTERSTATE 85
INTERSTATE 85
ELHAM RD
S HWY 14
1
2
3
4
5
6
7
1.) Mitsubishi
2.) Advanced Composite Materials
3.) Honeywell
4.) Safety-Kleen Systems
5.) BMW Manufacturing Plant
6.) Aiken Chemical Company
7.) RMAX, Operating LLC
Greer
City of Greer, SC
Map 6 - 7
Hazard Mitigation Plan
Critical Hazardous
Facilities
1 in = 4,000 feet
0 700 1,400 2,800 4,200 5,600 Feet
N
W
E
S
HCP Holland Consulting Planners, Inc.


Greer
City of Greer, SC
Map 6 - 8
Hazard Mitigation Plan
Critical Parks and
Recreation Facilities
Legend
City of Greer
Critical Parks and Recreation Facilities
Greenville-Spartanburg Environs Area
Railway Corridor at 100'
Floodplain
Mill House
1.) B.P. Edwards Park
2.) Century Ball Complex
3.) City Park / City Hall
4.) City Stadium
5.) Country Club Sports Complex
6.) Greentown Park
7.) H.R. Turner Park
8.) Horace McKown Center
9.) Kid's Planet
10.) Needmore Recreation Center
11.) Springwood Park
12.) Stevens Ball Field
13.) Suber Soccer Complex
14.) Tryon Recreation Center
15.) Veteran's Park
16.) Victor Mini Park
17.) Victor Park Gymnasium
18.) Wards Creek Park
N HWY 14
O'NEAL RD
W WADE HAMPTON BLVD
W POINSETT ST
N MAIN ST
E WADE HAMPTON BLVD
ARLINGTON RD
E POINSETT ST
E POINSETT ST EXT
S MAIN ST
NEW WOODRUFF RD
BRUSHY CREEK RD
S HWY 14
1 in = 3,000 feet
0 500 1,000 2,000 3,000 4,000 Feet
N
W
E
S
HCP Holland Consulting Planners, Inc.

Appendix 7

Modified Mercalli Scale of Earthquake Intensity

Scale	Intensity	Description of Effects	Maximum Acceleration (mm/sec)	Corresponding Richter Scale
I	Instrumental	Detected only on seismographs	<10	
II	Feeble	Some people feel it	<25	<4.2
III	Slight	Felt by people resting; like a truck rumbling by	<50	
IV	Moderate	Felt by people walking	<100	
V	Slightly Strong	Sleepers awake, church bells ring	<250	<4.8
VI	Strong	Trees sway; suspended objects swing; objects fall off shelves	<500	<5.4
VII	Very Strong	Mild alarm; walls crack; plaster falls	<1000	<6.1
VIII	Destructive	Moving cars uncontrollable; masonry fractures; poorly constructed buildings damaged	<2500	
IX	Ruinous	Some houses collapse; ground cracks; pipes break open	<5000	<6.9
X	Disastrous	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread	<7500	<7.3
XI	Very Disastrous	Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards	<9800	<8.1
XII	Catastrophic	Total destruction; trees fall; ground rises and falls in waves	>9800	>8.1

Source: Local Hazard Mitigation Planning Manual, North Carolina Division of Emergency Management.