Florence County

Hazard Mitigation Plan

Section One

INTRODUCTION

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1. Introduction

The Disaster Mitigation Act of 2000, also known as DMA 2000 was signed into law on October 30, 2000 by the President. This established a requirement that to remain eligible for federal funds, local and state governments must develop and adopt an approved hazard mitigation plan. The Federal Emergency Management Agency (FEMA) published an Interim Final Rule (IFR) on February 26, 2002. This set the guidance and regulations under which such plans are to be developed. It includes the planning process as well as the contents of the plan that are required.

Hazard mitigation is often defined as actions taken to reduce the effects of natural hazards on a place and its population. This plan focuses on the countywide hazards with the highest potential for damaging physical assets, people and operations in Florence County. Both the risk assessment and mitigation action plan sections reflect this emphasis, which was the result of careful consideration and a ranking process carried out by the Florence County Hazard Mitigation Planning Committee (FCHMPC). This committee was formed and staffed by the Florence County Emergency Management Department and the Florence County Planning Department. The committee was charged with developing a county component for the plan. Neighboring communities, agencies involved in hazard mitigation and businesses, academia, and other relevant private and non-profit interests were also involved in the planning process. All towns and cities as well as representatives from law enforcement, emergency services, business and industry and others with interest in hazard mitigation planning were invited to participate in the development of the respective county components of the plan.

The FCHMPC reviewed all existing plans listed on Table 2-1, studies, reports and technical information. Documents reviewed included comprehensive plans, zoning ordinances, building codes, historical hazard event records, and emergency operations plans. Recommendations in these documents relative to hazard mitigation issues were addressed in the hazard vulnerability analysis and hazard mitigation initiatives prepared for inclusion in this plan. Additionally, public meetings were scheduled to provide an opportunity for the general public and local government officials to have input. This was accomplished by public meetings conducted in Florence County. The meetings were coordinated by the Florence County Emergency Management Department and the Florence County Planning Department in cooperation with administrative officials from each participating municipality. The public was invited to the meetings through news releases and notices posted at municipal and county offices.

Florence County Emergency Management and Florence County Planning assisted the county planning committee in conducting detailed studies to identify the hazards threatening the jurisdictions of Florence County and to estimate the relative risks posed to the community by those hazards. This information has been used by the committee to prioritize their planning efforts to assess the vulnerabilities of the facilities and neighborhoods of Florence County to the

impacts of future disasters involving those hazards. With these vulnerabilities identified, the committee worked to identify, justify and prioritize specific proposals for projects and programs that will avoid or minimize these vulnerabilities. This document includes a detailed characterization of hazards in Florence County; a risk assessment that describes potential losses to physical assets, people, and operations; a set of goals, objectives, strategies, and initiatives that will guide Florence County mitigation activities; and a detailed plan for implementing and monitoring the plan.

These proposed projects and programs to reduce the impacts of future disasters are called "mitigation initiatives" in this document. Mitigation initiatives have been developed, and will continue to be developed, by the county planning committee for implementation whenever the resources and opportunities to do so become available. Implementation of this plan is essentially through implementation of the mitigation initiatives included in the plan, and with each implementation effort, the county planning committee will continue to help make the participating communities more resistant to the human and economic costs of future disasters.

This document details the work of the Hazard Mitigation Planning Committee over the past several months to develop the planning organization, to undertake the needed technical analyses, and to coordinate the mitigation initiatives that have been proposed by the participating jurisdictions and organizations. The draft plan will be submitted to all participating jurisdictions for adoption by the respective governing bodies.

The Florence County Hazard Mitigation Plan has been established to make the population, neighborhoods, businesses and institutions of the community more resistant to the impacts of future disasters. The county planning committee and staff have been undertaking a comprehensive, detailed evaluation of the vulnerabilities of the towns, cities and unincorporated areas throughout the county to all types of future natural hazards in order to identify ways to make the communities of the planning area more resistant to their impacts. This document reports the results of that planning process for the current planning period.

2. Organization of the Plan

The plan is organized into six sections.

1. Introduction
2. Planning Process
3. Community Profile
4. Hazard Identification and Risk Assessment
5. Progress In Plan Implementation
6. Mitigation Goals and Objectives and Plan Implementation
7. Completion of Proposed Mitigation Initiatives

Appendices

The following sections of the Florence County Hazard Mitigation Plan present the detailed information to support these purposes. The remainder of the plan describes the county planning committee to managing the planning process. The plan then summarizes the results of the hazard identification and vulnerability assessment process, and addresses the adequacy of the current policy basis for hazard management by the participating jurisdictions and organizations. The plan provides a description of the mitigation-related characteristics of each participating jurisdiction, such as its land uses and population growth trends, the mitigation-related policies already in-place, identified critical facilities present in the community, and if there

are properties that have been repeatedly damaged by past disasters. The past and planned efforts of the committee to engage the entire community in the mitigation planning process are documented. The plan further addresses the mitigation goals and objectives established by the committee and the actions to be taken to maintain, expand and refine the Florence County Hazard Mitigation Plan and the planning process. Finally, the plan documents the structural and non-structural mitigation initiatives proposed by the participating jurisdiction to address the identified vulnerabilities.

3. Executive Summary

Florence County as a whole is threatened by a number of different types of hazards. These hazards endanger the health and safety of the population of the community, jeopardize its economic vitality, and imperil the quality of its environment. Because of the importance of avoiding or minimizing the vulnerabilities to these hazards, the public and private sector interests of Florence County have joined together to undertake a comprehensive planning process that has culminated in the publication of this document: "The Florence County Hazard Mitigation Plan." Florence County is comprised of the following nine municipalities in the northeastern portion of the state:

Town of Coward	Town of Pamplico
City of Florence	Town of Quinby
Town of Johnsonville	Town of Scranton
City of Lake City	Town of Timmonsville
Town of Olanta	

Florence County government provides planning and economic development technical assistance services to these municipalities. This is a county wide hazard mitigation plan, and the planning effort has been conducted through the coordinated, cooperative effort of these local governments.

The purpose of a mitigation plan is to rationalize the process of determining appropriate hazard mitigation actions. This document includes a detailed characterization of hazards in Florence County; a risk assessment that describes potential losses to physical assets, people, and operations; a set of goals, objectives, strategies, and initiatives that will guide Florence County mitigation activities; and a detailed plan for implementing and monitoring the plan. This plan will continue to be updated and expanded in the future to ensure it addresses changing conditions in the participating jurisdictions, experiences with disasters that do occur, and any changes in the characteristics of the hazards that threaten the involved communities. This updating process and future editions of the mitigation plan issued will also be used to continue to inform and involve the general public and other interested groups to fully participate in making the community more resistant to the impacts of future disasters.

The Florence County Hazard Mitigation Plan was prepared in accordance with the process established in the State and Local Mitigation Planning guidance produced by the Federal Emergency Management Agency (FEMA), and the requirements of the interim Final Rule. The process established in the guides includes four basic steps; Organize Resources, Assess Risks, Develop a Mitigation Plan and Implement the plan and monitor progress.

Florence County

Hazard Mitigation Plan

Section Two

PLANNING PROCESS

Introduction

The FCHMPC includes representatives from local government agencies, business interests, community organizations, and institutions. The FCHMPC staff solicited the involvement in the mitigation planning by each local jurisdiction in the planning area. In this solicitation, the jurisdictions were encouraged to identify agencies and organizations that should represent the jurisdiction. This solicitation, sent out by the planning staff, stated the many benefits to local governments from participation in the mitigation planning. State and federal agencies, agencies that have the authority to regulate development, as well as regional agencies with facilities or responsibilities in Florence County were also encouraged to be involved in the planning, and were contacted through telecommunications and invited to participate. Those organizations not directly associated with state, regional or local governments, such as neighborhood associations, businesses and industries, and volunteer agencies were solicited to join the planning process. With a positive response to these solicitations, each local jurisdiction and its agencies, any state, federal and regional agencies, and/or any interested community groups, are considered to be participants in the committee planning process and requested to engage in the meetings and planning activities necessary to develop, maintain and implement the plan. The FCHMPC encourages participation in the development of the plan by all interested local jurisdictions, agencies, organizations and individuals, listed as Appendix A named "Florence County Stakeholders". The planning approach is intended to represent a partnership between the public and private sector of the community, working together to create a disaster resistant community. The proposed mitigation initiatives developed by the committee and listed at the end of this section, when implemented, are intended to make the entire county safer from the impacts of future disasters, for the benefit of every individual, neighborhood, business and institution.

The committee represents all of the local municipalities and key organizations participating in the planning process, and is the group that makes the official decisions regarding the planning process. The committee serves as the official liaison of the planning project to the community, and coordinates all planning activities. Most importantly for this document, however, is the committee's role to approve proposed mitigation initiatives for incorporation into the county's hazard mitigation plan, for determining the priorities for implementation of those initiatives, and for removing or terminating initiatives that are no longer desirable for implementation. Due to the lack of participation by the jurisdictions of Scranton and Timmonsville, the committee took as much consideration as possible throughout the planning process.

The planning staff, working closely with the respective committee, coordinates the actual technical analyses and planning activities that are fundamental to development of this plan. These activities include preparing and presenting to the FCHMPC the hazard

identification and vulnerability assessment processes, as well as assisting the committee in receiving and coordinating the mitigation initiatives that are proposed by the committee participants for incorporation into this plan. The coordinating process undertaken constitutes a "peer review" of the proposed mitigation initiatives submitted for incorporation into the plan. Through the peer review, each proposed initiative is to be reviewed for its consistency with the goals and objectives established for the planning process and its relationship to identified hazards and defined vulnerabilities to those hazards. The review process strives to assure the assumptions used by the organization to develop the proposal are reasonable, that the proposal would not conflict with or duplicate other proposed initiatives, that proposals are feasible and consistent with known requirements.

As soon as the committee approves a proposed mitigation initiative in this manner, it is considered to be officially a part of the Florence County Hazard Mitigation Plan, and expected to be implemented by the sponsoring organization as soon as the resources and/or opportunity to do so becomes available.

Planning and Regulatory Capability

Planning and regulatory capability is based on the implementation of plans, ordinances and programs that demonstrate a local jurisdiction's commitment to guiding and managing growth, development and redevelopment in a responsible manner, while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning and transportation planning, in addition to the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built, as well as protecting environmental, historic and cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate hazard mitigation principles and practices into the local decision making process. The assessment is designed to provide a general overview of the key planning and regulatory tools or programs in place or under development for Florence County, along with their potential effect on loss reduction. This information will help identify opportunities to address existing gaps, weaknesses or conflicts with other initiatives in addition to integrating the implementation of this plan with existing planning mechanisms where appropriate.

The attached table, Table 2-1, provides a summary of the relevant local plans, ordinances and programs already in place or under development for Florence County. Each of these local plans, ordinances and programs should be considered available mechanisms for incorporating the requirements of the Florence County Hazard Mitigation Plan Update.

Hazard Identification and Risk Assessment

The committee identifies the hazards that threaten all or portions of the community. Where possible, specific geographic areas, subject to the impacts of the identified hazards, are delineated. The purpose of this analysis is to define those locations, facilities or systems within the county that may be vulnerable to the impacts of those hazards and warrant further assessment. The hazard identification analysis will be accomplished through the following general methodology:

- Identifying all significant hazards that threaten the county.
- Defining or estimating the geographic and/or operational scope of the areas and/or community functions within the county that could be impacted by the hazard,
- Determining or estimating the probability or frequency of occurrence of the hazard event,
- Defining, estimating or predicting the general consequences of the event to human health and safety, to property, to valuable environmental resources and the economic vitality of the community.
- Deriving a measure of risk to reflect the relative significance of hazard being addressed to the jurisdiction being evaluated.

The measure of relative risk may then be used by the committee to guide and prioritize the subsequent mitigation planning process. The hazard identification process is intended to encompass both developed areas as well as those likely to be developed in the future. Hazard identification information and other findings from this analysis will be made available for use by the public and other interested organizations and agencies.

A variety of information resources regarding hazard identification and risk assessment have been available. The planners have attempted to incorporate consideration of hazard specific maps, including flood plain delineation maps, whenever applicable, and have attempted to avail themselves of GIS-based analyses of hazard areas and the locations of critical facilities, infrastructure components and other properties located within the defined hazard areas. The detailed analysis of hazards in the region was prepared in accordance with a methodology originally developed by the University of South Carolina. That methodology depends heavily on data analysis using Geographic Information System (GIS) technology.

Developing Hazard Mitigation Initiatives

This process enables the county planning committee to highlight the most significant vulnerabilities, again to assist in prioritizing subsequent efforts to formulate and characterize specific hazard mitigation initiatives to eliminate or minimize those vulnerabilities. Once the highest priorities are defined, the county planning committee can identify specific mitigation initiatives for the plan that would eliminate or minimize those vulnerabilities.

Each proposed mitigation initiative is “prioritized” for implementation in a consistent manner by each participating organization using a common set of objective criteria. Each mitigation initiative proposed for incorporation into the plan is formulated and submitted to the committee for consideration.

Developing the Local Mitigation Plan

On receipt of a pending initiative, using the “peer review” process incorporated into the operating procedures, the FCHMPC first evaluates the merits of the proposal and the validity of the judgments and assumptions that went into its characterization, as well as considers its potential for conflict with other jurisdiction’s programs or interests. The committee also assures that the proposal is consistent with the goals and objectives

established for the planning period and confirms that it would not duplicate or harm a proposal submitted by another jurisdiction or agency.

During routine updates of the Florence County Hazard Mitigation Plan, each mitigation initiative included in the plan is evaluated to determine if it is still valid or should be removed from the plan, or whether its implementation should be a priority or deferred until a later time. This approach is considered to define the "priority for implementation" of a specific mitigation initiative, in the judgment of the planning group, intentionally to allow for the adjustment of implementation schedules to respond to changes in the community or environmental conditions expected in the near future.

Approval of the Current Edition of the Plan

On a periodic basis, the Florence County Hazard Mitigation Plan is to be submitted to the governing body of each of the participating jurisdictions for review, modification if needed, and approval or adoption. Following adoption or approval of the plan by each jurisdiction's governing body, the respective agencies and organizations will continue to implement the plan, to expand its scope, continue its analyses, and take other such continuing action to maintain the planning process. This includes action by the committee with assistance from the planning staff to routinely incorporate proposed mitigation initiatives into the plan, without the necessity to also continuously solicit the formal approval of the plan by the jurisdictions' governing bodies.

Approximately every five (5) years, a draft plan document such as this will be printed and submitted to the governing bodies for review and formal adoption or approval. The committee will assist the planning staff in preparing the draft plan.

This document is a draft plan that, pending finalization, will be submitted for approval. It is important to emphasize that this document represents a "snapshot" of the planning process and is prepared as a current document for use by the planning group, the community, and state and federal authorities. Upon receiving the "approval pending adoption" status from FEMA, Florence County and all participating jurisdictions will officially adopt the plan in a public meeting.

Implementation of Approved Mitigation Initiatives

Once incorporated into the Florence County Hazard Mitigation Plan, the agency or organization proposing the initiative becomes responsible for its implementation. This may mean developing a budget for the effort, or making application to state and federal agencies for financial support for implementation. The current status of implementation of mitigation initiatives incorporated into the plan is discussed in the next section.

In this plan implementation process, the committee continues to monitor the implementation status of initiatives, to assign priorities for implementation and to take other such actions to support and coordinate implementation of initiative by the involved organizations. In reality, it is the implementation of proposed initiatives, along with other actions by the organizations participating in the planning to maintain, refine and expand the technical analyses used in the planning, that constitutes the process to implement the mitigation plan.

Resolving Conflicts

In the event that a mitigation initiative proposed by a participating agency or organization is determined by the committee to be in conflict with one or more other initiatives in the plan or being submitted by others, the committee will take action to resolve the conflict. This will be done in the following manner:

- The participants proposing the conflicting mitigation initiatives will be notified of the findings of the committee and requested to make any such modifications to the proposals needed to resolve the conflicts,

- Should the participants be initially unwilling or unable to make such modifications to their proposed mitigation initiatives, the committee will schedule and hold a detailed discussion of the matter and involve both participants and any other interested parties,

- In the event that such detailed discussions do not result in voluntary action on the part of the participants making the proposals, the committee will formulate a recommendation to resolve the conflict. In making this recommendation, in its discretion, the committee may give preference to the proposal already incorporated into the strategy, to that first submitted to the committee for review, and/or to the proposal achieving the highest priority score.

Approval of Supplements to the Plan

When indicated, the committee may elect to approve issuance of a supplement to the currently approved mitigation plan. This supplement may contain one or more proposed mitigation initiatives that have been fully processed by the committee in accord with this procedure. Upon its issuance, the supplement and the mitigation initiatives contained therein are considered to be an integral part of the Florence County Hazard Mitigation Plan pending the approval of the supplement by the governing body of the jurisdiction or organization that proposed the initiatives.

Assessment of Recent Disaster Events

Within 60 days following a significant disaster or emergency event impacting the county or any of its municipalities, the committee will conduct an analysis of the event to capture any “lessons learned” for the purpose of continuing development of the mitigation plan. The committee, with the support of the planning staff, will classify the event based on the hazard category and assess the magnitude of the event and the community’s reaction to it. The direct and indirect damage, response and recovery costs will also be gathered or estimated. Any mitigation techniques in place in the impacted areas would be assessed for their apparent effectiveness in decreasing damages. The type and extent of the damages that were experienced would also be evaluated to determine the types of mitigation initiatives that should be incorporated into the plan to avoid similar losses during future hazard events of the same type. Based on this assessment, the committee would recommend to one or more of the participating agencies or organizations that they propose appropriate mitigation initiatives for incorporation into the next edition of the plan. In its discretion, the agency or organization could then propose such an initiative and transmit it to the committee for processing in accord with this procedure.

Florence County Hazard Mitigation Planning Committee

Kristy Burch, Florence County Emergency Management, Senior Coordinator

Shawn Brashear, Florence County Building and Planning, Director

Crys Hoge, Florence County GIS Department, Manager

Robbie Ervin, Florence County GIS Department, GIS Analyst

Mike Puckett, McLeod Regional Medical Center, EM Manager

Chief Michael King, Coward Police Department

Mayor Dianne Thomas, Town of Coward

Chief Donald Tarbell, Francis Marion University Public Safety

Capt. George Mack, Florence Police Department

Johnathan Atkinson, Florence County Planning, Floodplain Manager

Curt Whaley, Florence County Building and Planning, Inspector

Doug Nunnaly, Florence School District One, Safety Manager

Chief Howard Worrell, West Florence Fire Department

Jeff DeLung, City of Florence Fire Department, EM Manager

Jerry Dudley, City of Florence, Planning Director

Neal Vincent, Florence School District Two, Superintendent

Ryan Guerry, SCEMD, Hazard Mitigation Specialist

Chief John DeLung, Windy Hill Fire Department

Chief Ron Douglas, Johnsonville Police Department

Stephany Snowden, City of Lake City, Administrator

Mayor Michael Welch, Town of Olanta

Mayor Gene Gainey, Town of Pamplico

Mayor Terry Knotts, Town of Scranton

Mayor Darrick Jackson, Town of Timmonsville

Table 2-1 Plans, Ordinances and Programs

Planning/Regulatory Tool	Florence County	Coward	Florence	Johnsonville	Lake City	Olanta	Pamplico	Quinby	Scranton	Timmonsville
Hazard Mitigation Plan	X	X	X	X	X	X	X	X	X	X
Comprehensive Land Use Plan	X		X	X	X	X	X	X	X	X
Floodplain Management Plan	X		X	X	X		X	X	X	X
Storm Water Management Plan			X							
Emergency Operations Plan	X	X	X	X	X	X	X	X	X	X
Disaster Recovery Plan	X	X	X	X	X	X	X	X	X	X
Economic Development Plan	X		X	X	X	X	X	X	X	X
Historic Preservation Plan	X		X							
Zoning Ordinance	X		X	X	X	X	X	X	X	X
Building Code	X		X	X	X	X	X	X	X	X
Fire Code	X		X	X	X	X	X	X	X	X
National Flood Insurance Program (NFIP)	X		X	X	X		X	X	X	X
NFIP Community Rating System										

Florence County

Hazard Mitigation Plan

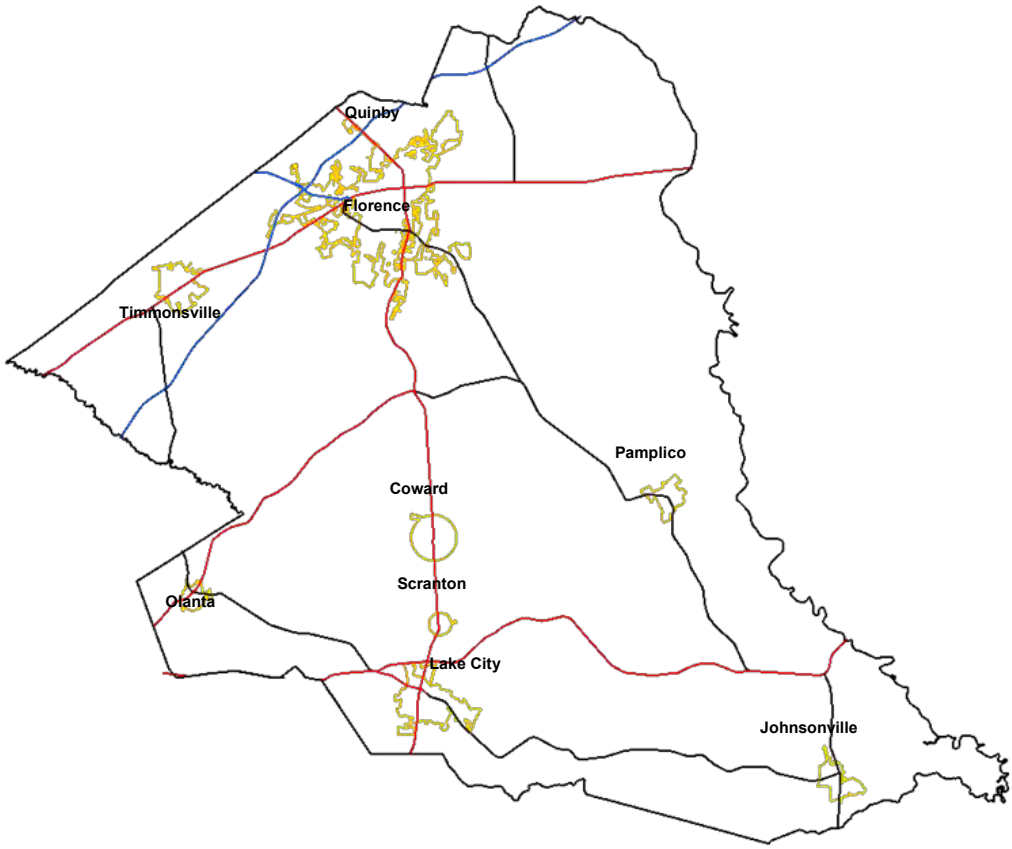
Section Three

COMMUNITY PROFILE

Geography and Topography

Florence County is located in the northeast portion of South Carolina in the Pee Dee Region which is within the coastal plain. The county is bordered on the north by Marlboro and Dillon Counties; on the east by Marion County; on the south by Williamsburg and Clarendon Counties; the west by Sumter, Lee and Darlington Counties. Florence County is approximately 804 square miles, of which 800 square miles is land and 4 square miles is water. This is a large county with generally flat terrain with an average elevation of 140 feet. The western and eastern boundaries of the County are extensive floodplains associated with the Lynches and Great Pee Dee Rivers, respectively. Other floodplains are narrow, except for significant portions of Lynches River, Black Creek and some portions of Jeffries Creek.

Figure 3.1 Orientation Map



Florence County's climate is humid and subtropical, with long, hot summers and short, mild winters. The subtropical climate arises from the combination of the state's relatively low latitude, its generally low elevation, the proximity of the warm Gulf Stream in the Atlantic, and the Appalachian Mountains, which in winter, help to block cold air from the interior of the United States. The average temperature range in Florence is 52.6ºF to 74.6ºF. The record low in Florence County was 0ºF in 1985 and the record high was 108ºF in 1954. Rainfall average is 46.11 inches with most precipitation occurring during the spring and summer. The most rainfall to occur within a 24 hour period was 13.25 inches in 1916. The average yearly snowfall is 0.6 inches with the largest snowfall within a 24 hour period occurring in 1973 with a total of 13.0 inches. This storm also holds the record for the most snowfall in Florence County from a single storm with a total of 17 inches.

Population and Demographics

As of the 2010 Census, Florence County has a population of 136,885. The 2000 Census reported a population of 125,761 which was a growth of 8.8 percent. The 1990 Census reported a population of 114,344 which was a growth of 9.9 percent. This shows a steady growth of 9.4 percent within the past 20 years which is charted on ***Figure 3.2 Population Growth***. ***Table 3.1 Population for Participating Jurisdictions*** shows population from 1990, 2000 as well as 2010. The 2010 Census shows that, of the nine incorporated municipalities in Florence County, Scranton, Quinby, Coward and Olanta have a population of less than 1000. While the municipalities of Timmonsville, Pamplico and Johnsonville show a population from 1000 to 3000, and Lake City's population is between the ranges of 5,000 to 10,000. The largest jurisdiction is the City of Florence with a population level greater than 30,000. ***Figure 3.3 Population Percentages*** shows a visual breakdown of these populations.

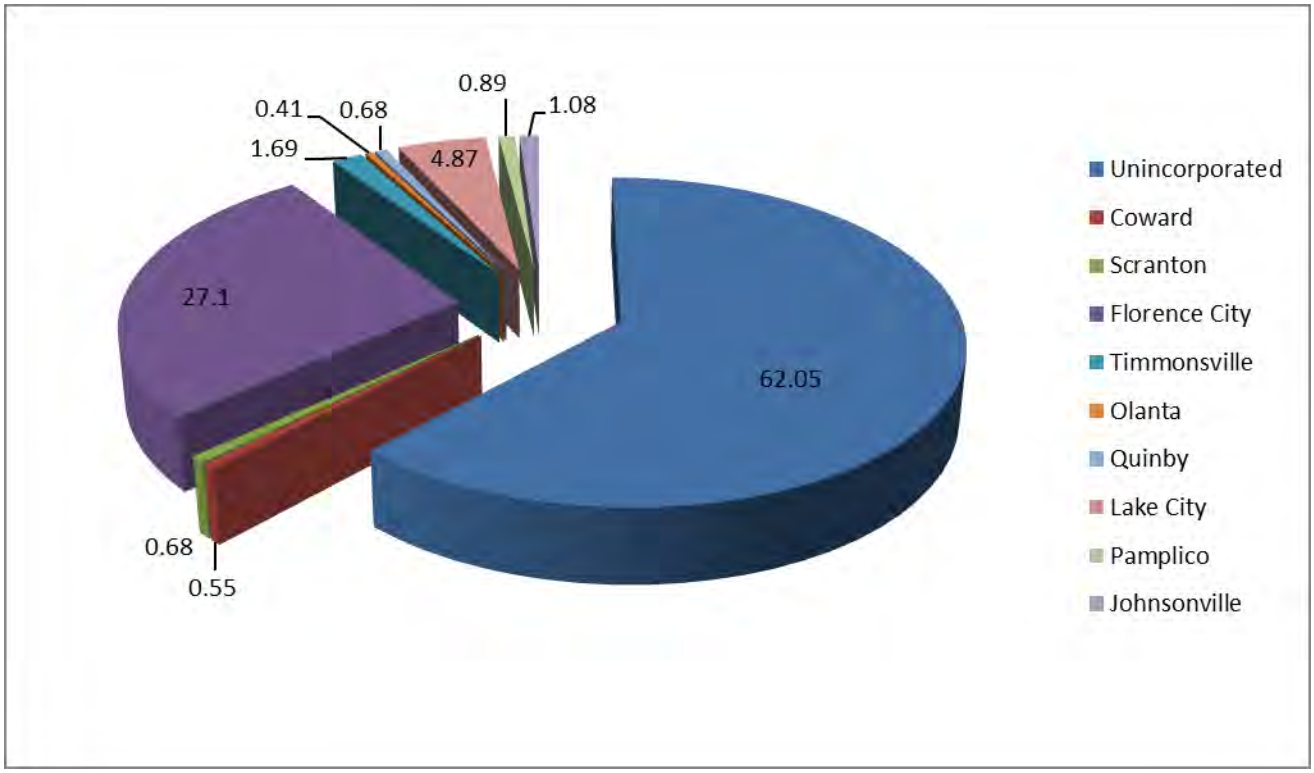
Figure 3.2 Population Growth

CENSUS YEAR	TOTAL COUNTY POPULATION	PERCENT CHANGE FROM PREVIOUS CENSUS YEAR
1890	25,027	N/A
1900	28,474	13.77%
1910	35,671	25.27%
1920	50,406	41.30%
1930	61,027	21.07%
1940	70,582	15.65%
1950	79,710	12.93%
1960	84,438	5.93%
1970	89,636	6.15%
1980	110,163	22.90%
1990	114,344	3.79%
2000	125,761	9.98%
2010	136,885	8.84%

Table 3.1 Population for Participating Jurisdictions

Population for Participating Jurisdications				
Jurisdiction	1990 Census Population	2000 Census Population	2010 Census Population	% Change 2000-2010
Florence County	114,344	125,761	136,885	8.85%
Unincorporated	69,581	81,116	84,949	4.72%
Coward	532	650	752	15.60%
City of Florence	29,813	30,248	37,056	22.50%
Johnsonville	1,415	1,418	1,480	4.37%
Lake City	7,153	6,478	6,675	3.04%
Olanta	687	613	563	-8.88%
Pamplico	1,314	1,139	1,226	7.09%
Quinby	865	842	932	9.65%
Scranton	802	942	932	-1.07%
Timmonsville	2,182	2,315	2,320	0.21%

Figure 3.3 Population Percentages



Based on the 2010 Census the median age for Florence County is 37.2 years. The percentage of the population under the age of 5 is 6.9 percent while ages 65 and over account for 12.7 percent of the population. The age groups with the largest population totals are 45 to 54 years with 14.4 percent; 35 to 44 years with 13.4 percent; and 25 to 34 years with 12.8 percent.

Also according to the 2010 Census Florence County's population is 56.5 percent white; 40.7 percent black or African American; and 2.8 percent for all other races. 2.1 percent of the population reported being of Hispanic origin.

In 2010, there were 51,636 households in Florence County with the average size of 2.54 people. While families made up 69.9 percent of the households, which includes both married-couple families at 44.8 percent and other families at 25 percent. Nonfamily households accounted for 30.2 percent in Florence County and of those 26.3 percent were householders living alone.

Of the 64.7 percent of the population that is 25 years old or older 19.2 percent have no diploma or its equivalent. 34.2 percent of the population are high school graduates and 46.7 percent went on to attend college. Of those 28.8 percent received various levels of degrees. Florence County has a median income of $40,487.00 while 18 percent of the population lives below the poverty level.

Florence County has 57,406 housing units and of those there are 61.1 percent single-unit structures. 17.6 percent were multi-unit structures and 21.3 percent were mobile homes. There were 34,112 owner-occupied housing units with a median value of $108,400.00. The age distribution is as follows:

- 2005 – later 3.9 %
- 2000 – 2004 9.2%
- 1990 – 1999 23.0%
- 1980 – 1989 15.8%
- 1970 – 1979 19.3%
- 1960 – 1969 12.2%
- 1950 – 1959 7.7%
- 1940 – 1949 4.1%
- 1939 or earlier 4.8%

Based on the above information Florence County has a population average of 171.14 persons per square mile as well as 64.56 housing units per square mile.

Figures 3.4 Population Totals show the population distribution at census tract level, based on the 2010 Census. Social vulnerability scores are derived from socioeconomic characteristics of each jurisdiction including age, gender, population, race, income, and the number of mobile homes found in the county. This score indicates the potential for harm to individuals and damage to properties that are more vulnerable than other groups because of socioeconomic conditions. For example, people under age 19 or over age 64 are more vulnerable than the general population due to the need for special assistance should an evacuation be required in an emergency.

Figure 3.4 Population Totals

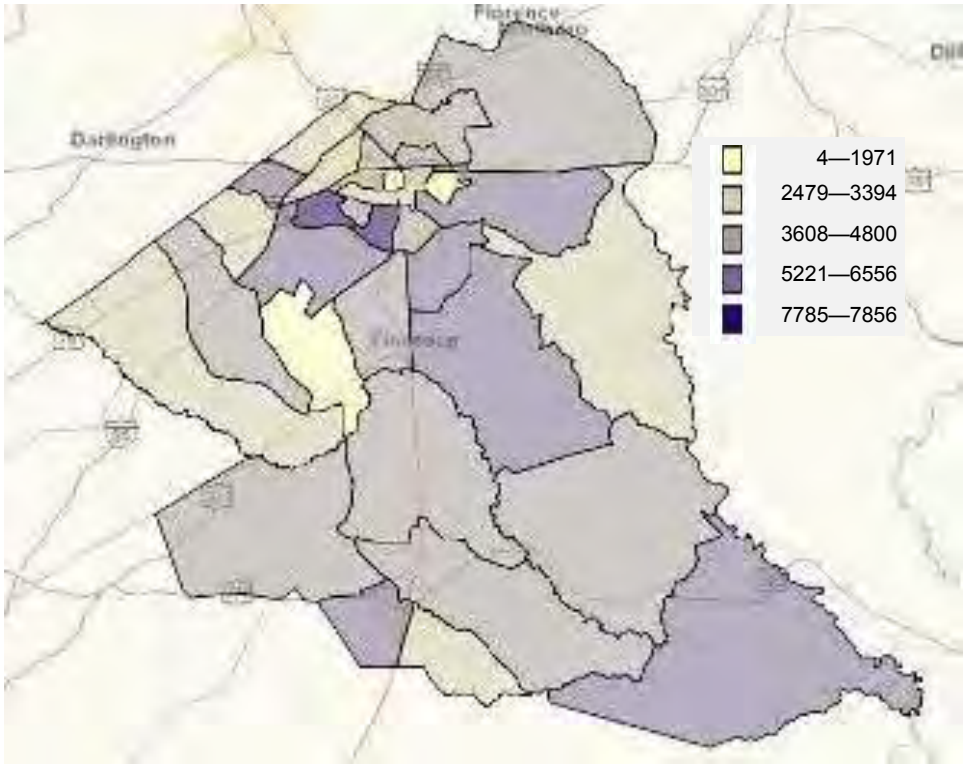


Figure 3.5 Elderly Population Distribution shows the distribution of elderly population density. ***Figure 3.5 Elderly Population Distribution***

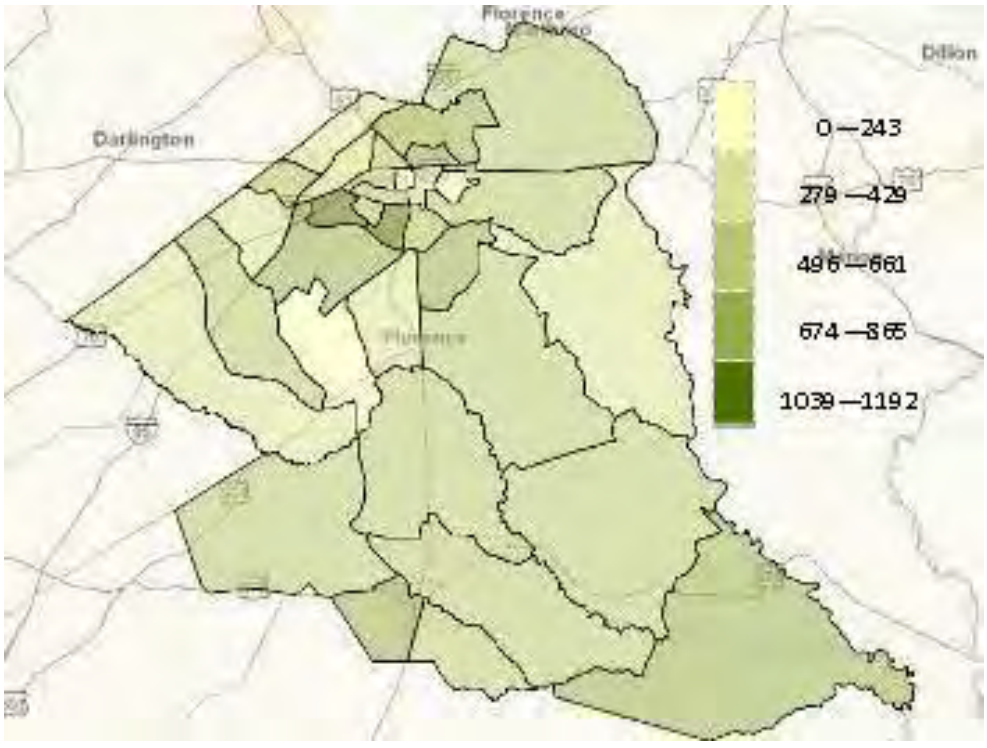
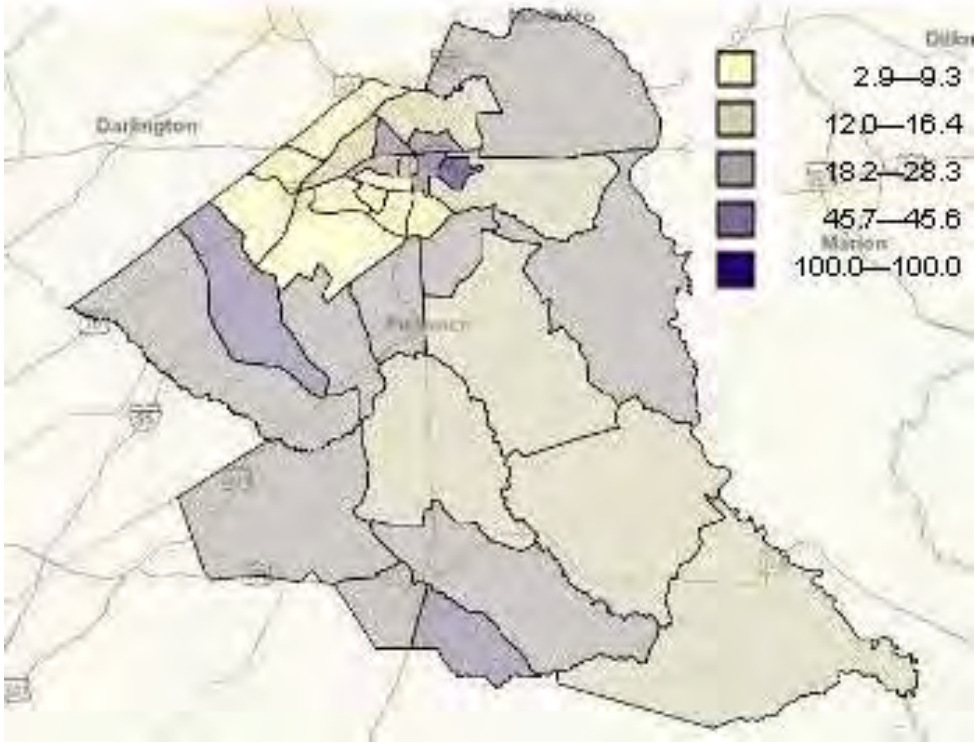


Figure 3.6 Percentage Below Poverty Level shows the distribution of low income population density by census tract for South Carolina.

Figure 3.6 Percentage Below Poverty Level



Utilities and Infrastructure

Transportation

The intersection of Interstate 95 and Interstate 20, which is the half-way point between NYC and Miami, is within Florence County. There are also four other main highways which traverse the county and serve as connectors: Highway 76 connects Florence to Chattanooga, Tennessee while Highway 301 spans to Florida. Highway 52 connects to Charleston, South Carolina or Canada to the north. Highway 378 will direct traffic to Columbia, SC. In general, Florence County has 1,491.87 miles of paved roads with almost 90% being two lanes. In addition, there are over 300 miles of unpaved roads. Florence County is host to a major rail yard for both CSX and Amtrak. The Florence Regional Airport is located on Highway 76/301 in the Greater Florence Area and averages approximately 15 flights daily. Lake City Municipal Airport is located at C.J. Evans field in Lake City and Timmonsville is home to Huggins Memorial Airport.

Utilities

Florence County is served by eight public water/wastewater entities with the City of Florence being the primary provider. The City of Johnsonville, City of Lake City, Town of Coward, Town of Olanta, Town of Pamplico, and the Town of Scranton operate additional systems. Electrical suppliers in Florence County are Pee Dee Electric Cooperative, Inc. and Duke Energy, Inc. Natural Gas is in most portions of Florence County through SCE&G, a SCANA Company.

Community Facilities

The Florence County Library System is headquartered in the City of Florence at the Doctors Bruce and Lee Foundation Library and has five branch libraries located throughout the County. Additional libraries are found at higher education facilities. Florence-Darlington Technical College includes a library on its main campus and a branch library in the downtown Florence campus. Francis Marion University has a 77,000 square foot library on its campus.

The Florence center opened in 1993 and is the largest indoor venue for entertainment, conventions and civic events in the Pee Dee. The building's 50,000 square feet of multipurpose space is the largest exhibition facility in northeast South Carolina. It includes a 10,000 seat arena, 14,500 square foot Exhibit Hall and meeting Rooms. It is conveniently located near the I-95 and I-20 interchange.

Florence Little Theatre's new facility opened September 2008 and is no less than state-of-the art. The 35,000 square foot facility seats approximately 396 persons and this cultural facility is only one of many efforts that will aid in the revitalization of downtown Florence. The Francis Marion University Center for Performing Arts opened in 2011 in downtown Florence. A multipurpose theatre provides seating for 839 persons. The facility is used for performances, programs and exhibits while also including an Academic Wing for the Department of Fine Arts.

Active and passive recreational opportunities are important for maintaining and increasing the quality of life for residents. Altogether, Florence County contains more than 1400 acres of park land and green space.

Florence County has two major river systems: the Great Pee Dee River and the Lynches River. Both are designated by the State Department of Natural Resources as State Scenic Rivers. Numerous river landings in Florence County provide access to miles of scenic waterways. Florence County has a maintenance agreement with the Department of Natural Resources for seven (designated with an asterisk,*) of the following boat landings:

1. SC Highway 327 Boat Ramp on Black Creek*
2. US Highway 52 Boat Ramp on Lynches River (New Hope)*
3. Odell Venters on Lynches River (Witherspoon's Ferry)*
4. Bluff Road on the Great Pee Dee River (Dewitt's Landing)*
5. Allison Landing on the Great Pee Dee River (Ellison's or Poston Landing)*
6. Mill Branch Road(Red Bluff) on the Great Pee Dee River
7. Persimmon Bluff on Lynches River
8. Glen's Bluff (Ginn's Bluff) on Lynches River
9. Bartell Landing on Lynches River
10. N. Pitch Landing (Pitt's) on Lynches River
11. Mack's Lake on Lynches River
12. Sandstone Road Landing(Smith) on Lynches River
13. Riverside Cemetery Road (River Rest) is located on Lynches River
14. Lee Landing on Lynches River

15. Wicklow Road (Bass Bridge)on Lynches River
16. Courtney Point on Lynches River
17. Cockfield Landing on Lynches River
18. Farrell Drive (Anderson Bridge) on Lynches River
19. Jeffords Road (High Bank) located on Lynches River (High Bank)
20. Bostick's Landing on Great Pee Dee River*
21. Pine Bluff Road(Poston Landing) on the Great Pee Dee River
22. Jimmy Road (Half Moon) Landing Road on Lynches River*
23. New Landing Road on Lynches River
24. Bennie Landing Road on Lynches River
25. Indigo Landing Road on Lynches River
26. Bunk Road on Lynches River
27. Catfish Road on Lynches River
28. Syrup Mill Road (Buster Lynch Landing)
29. Eaddy Landing Road on Lynches River

Education

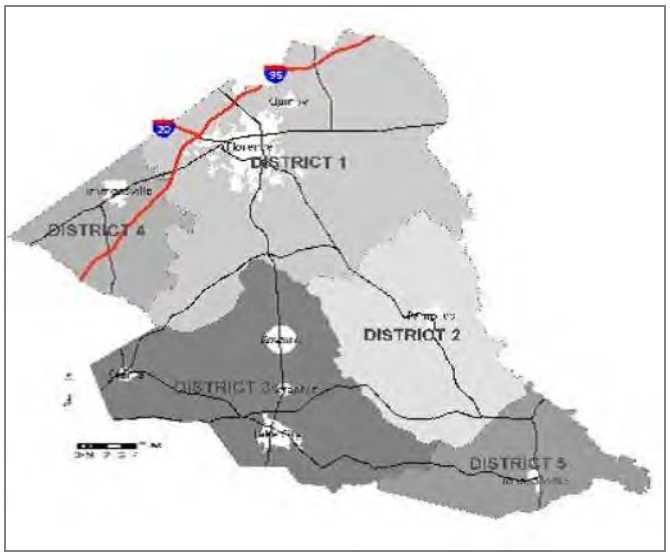
Florence County Schools have been accredited by South Carolina Independent School Administration, South Carolina State Department of Education and the Southern Association of Colleges and Schools. Florence County includes public and private schools. Five public school districts comprise the Florence County Public School System. ***Table 3-2 Florence County School Districts*** reflects student, administration, and teacher statistics by district for 2006-2007.

Table 3-2 Florence County School Districts

School District	Attendance Rate	Annual Dropout Rate	Total Teachers	Total Students	Students per Teacher
One	94.7	1,287	1,138	16,438	14.4
Two	94.4	96	81	1,168	14.4
Three	94.7	305	238	3,482	14.6
Four	98.3	102	51	678	13.3
Five	94.4	118	85	1,472	13.4
Total	95.3	1,908	1,593	23,238	14.6

The following map, ***Figure 3.7 Florence County School Districts***, shows the boundaries of each School District and its respective district number. A summary of each District's facilities follows the countywide map.

Figure 3.7 Florence County School Districts



Florence County School District One is the largest of the five districts in land area and student population and serves the City of Florence, the Town of Quinby and the community of Effingham. Florence District One owns a total of 27 facilities and two vacant properties. These facilities include fifteen elementary schools, three middle schools, three high schools, one administration building, Dr. R. M. Beck Center (Carver Community Center), one career center, Poynor School, which serves as a combination of an administration building and adult center.

Florence County School District Two serves the Towns of Pamplico and Hannah. District Two includes Hannah-Pamplico High School and Hannah-Pamplico Elementary/Middle School. The District Two office is located between these two schools.

Florence County School District Three serves Lake City, the Towns of Coward, Scranton and Olanta. There are eight facilities within this district which include one high school and seven elementary/middle schools.

Florence County School District Four serves the Town of Timmonsville and the Sardis and Cartersville Townships. In 2000, the District built a new K-12 educational complex consolidating four older schools.

Florence County School District Five educates the children of the City of Johnsonville, Vox, Prospect, and Kingsburg communities. The facilities include Johnsonville's High School Vocational Center and a primary elementary school as well as the Florence School District Five Campus Health Center.

There are also nine private schools across the county with a population of approximately 2125.students.

Francis Marion University is a four year college with one of the most diverse student bodies in the South and enrolls nearly 4,000 students. They offer undergraduate and graduate degrees in over 30 areas of study.

Florence-Darlington Technical College is a two year school that offers quality education in more than 85 fields of study. Among the special services and programs at the main campus are the School of Welding and Cutting, the Advanced Welding and Cutting Center, the Caterpillar Dealer Academy, and a Cisco Systems Training Laboratory. Southeastern Institute of Manufacturing and Technology (SiMT) is located at Florence Darlington Technical College. SiMT provides customers with strategic training and manufacturing technology solutions that maximize workforce productivity in advanced manufacturing environments. They offer a variety of training in manufacturing areas (including quality, machining, rapid prototyping, fluid power, robotics, electronics, maintenance, and programmable logic controls), health, safety, computing, networking, environmental, biotechnology, business, management, supervision, and more.

Medical

Florence County is included in the Pee Dee Health District, one of the Department of Health and Environmental Control (DHEC) health districts in the State of South Carolina. Two Health District facilities exist in Florence County in addition, DHEC maintains Home Health Care Services which provides health care to people who are confined to their homes because of illness or injury. In addition, the Florence County Environmental Services Department includes environmental services such as animal control, litter control, mosquito control, inmate litter removal crews, and the Adopt-A-Highway program. Vital Records are also a component of the DHEC. It provides for the registration, correction and certification of vital events including live births and deaths.

McLeod Regional Medical Center is one of the largest employers in the Pee Dee with more than 3,000 employees. In addition, this medical center is a 371-bed center and region wide, McLeod Health is associated with more than 375 physicians. McLeod offers many services including the Heart and Vascular Institute, cancer center, women's services, children's hospital, Center for Advanced Surgery, radiology, occupational health, surgery, ophthalmology and ophthalmologic surgery, diabetes, emergency, urgent care center, home health, Hospice and sports medicine. McLeod is also the only teaching hospital in this region. Furthermore, nearly 50 percent of McLeod's inpatients are referred from outside Florence County to receive specialty care.

MUSC Florence is a 420-bed hospital with over 300 specialized physicians.
MUSC Florence has eleven operating suites including one for open heart surgery.
MUSC Florence provides diagnostic services, women's health services, cancer services, cardiac care, rehabilitation services, emergency/trauma services and community wellness facilities and programs.

Lake City Community Hospital is a 48 bed hospital. The medical staff consists of family practitioners, emergency room physicians, general surgeon, radiologists, orthopedists, internist, and four physician assistants.

Employment and Industry

In the last decade, changes within the County and largely on the national scale have had an influence in the types of jobs available. Florence County is significantly affected by transformations in the economy due to evolving technology, a growing global market and the increasing level of education in the workforce. Education is a basic factor in achieving the best results for the economy. Computer literacy is critical in the market today due to the sophistication of machinery as well as a means of communication.

Significant biomedical and financial businesses are located in Florence County either in the downtown area or I-95 and I-20 connectors. Specifically, two hospitals and a major pharmaceutical company as well as banking regional offices and many large local banking services are locally established. Service industries are the biggest employers in Florence County with two hospital systems employing the most people. McLeod Regional Medical Center and MUSC Florence employed over of 6,500 workers in 2012. While the hospital systems seem to be two of the largest employers, there is still a diversity of manufacturers in the County with well-known national names such as Ruiz Foods, General Electric, Honda, Johnson Controls, NanYa and Vulcraft. Florence County has been the location of numerous large-scale corporate establishments. The location of Honda to Timmonsville in 1997, along with the additional companies such as QVC and expansions announced by Johnson Controls and Institution Food House will increase the number of jobs over the next few years. In 2008, Pepsi Cola Inc. and Ruiz Foods new operations at the Touchstone Energy Commerce City. Of the population of 105,136, age 16 years and over, 65,821 are in the labor force and there is currently an unemployment rate of 3.5 percent.

Table 3.3 Population Percentages represents the population percentages and projections for Florence County from 1970-2030. The population age 0 to 17 shows a decrease of 13.1percent from 1970 to 2030 while the population 65 and over shows an increase of 12.71percent. The population white non-Hispanic decreases from 60.53 percent in 1990 to 49.69 percent in 2030. The population black non-Hispanic increases from 38.65 percent in 1990 to 45.87 percent in 2030. The Hispanic population (any race) shows a projected increase to 2.42 percent in 2030.

Table 3.3 Population Percentages

	1970	1980	1990	2000	2015	2030
Percent of Population Age 0-17	38.84%	32.11%	28.35%	25.76%	25.98%	25.74%
Percent of Population Age 65 +	6.94%	8.68%	11.08%	11.82%	14.98%	19.65%
Percent of Population White Non-Hispanic	n/a	n/a	60.53%	58.50%	53.62%	29.69%
Percent of Population Black Non-Hispanic	n/a	n/a	38.65%	39.44%	43.16%	45.87%
Percent of Population Hispanic (Any Race)	0.14%	0.42%	0.44%	1.12%	1.69%	2.42%

Table 3.4 Largest Employers lists the largest employers for Florence County as of 2012. Its climate is a contributing factor as well as the southeastern location between New York and Miami. Industry, new and expanding businesses have invested more than $1.1 billion since 1997, creating well over 6,000 new jobs.

Table 3.4 Largest Employers

Employer	Business Sector	Number of Employees
McLeod Regional Medical Center	Medical	5000
Florence School District One	Education	2302
MUSC Florence	Medical	1850
Assurant Specialty Property	Insurance Services	1300
Honda of South Carolina	Manufacturing	1100
Blue Cross Blue Shield	Insurance Services	1100
McCall Farms	Manufacturing	1000
Nanya Pastics	Manufacturing	900
Florence County Government	Government	800
Wellman Plastics Recycling	Manufacturing	720

Land Use

Based on information obtained from the Florence County Comprehensive Plan dated 2018, Florence County land use has changed dramatically. Florence County, a landscape once dedicated to tobacco and a growing railroad in the mid- to late- 1800's, is now represented by a diverse amalgam of uses. Agriculture continues to dominate the County by sheer land area, but, healthcare, manufacturing, new residential subdivisions, commercial ventures and industrial complexes now dot urban and suburban locales across the County's 800 square miles. The Florence County strategy of the future land use emphasizes sustainable development throughout the county. Balancing economic and social development with the natural resource conservation and renewal for future use is the basis of sustainable development. Currently Florence County has 171,388 acres of farmland which is 34 percent of total land area. There are 249,099 acres of forestland which is 57 percent of total land area as well as 225,057 acres of wetland that comprises 44 percent of Florence County. There is also 14,466 acres of land which is commercial developed that is 2.8 percent of total land area.

To maintain a healthy community while providing quality services for our residents, businesses and visitors, a diversity of land uses should be provided. These land uses include a variety of residential densities along with commercial, industrial, schools, parks, a flood hazard district and other community components. The goal of this element is to categorize land uses in a geographic manner to increase the quality of life for Florence County residents while preserving the County's natural resources. While Florence County and its jurisdictions have increased population continuously with each census; the majority of this population and existing populations are moving away from or constructing homes to mitigate future occurrences of identified hazards.

Future Land Use Designations and Objectives

 Residential Preservation (RP) – Protect and sustain existing low density single-family residential areas, including property values and amenities, and provide for the growth of suburban or developing rural areas consisting of single-family homes and their accessory uses. (Zoning Districts Permitted: R-1, R-2, R-3, PD)

 Variable Residential (VR) – Protect and sustain existing higher density single-family, multi-family, or mixed-use residential areas, including property values and amenities, and provide areas for growth of various housing types and their accessory uses in urban and suburban settings. (Zoning Districts Permitted: R-3, R-4, R-5, PD)

 Rural Preservation (RUP) – Protect and sustain existing rural uses, including single-family homes and corresponding accessory uses, as well as agrarian uses, typically in an undeveloped and/or agricultural setting. (Zoning Districts Permitted: RU-1, RU-2, PD)

 Transitional Growth and Preservation (TGP) – Protect and sustain existing commercial areas, including property values and amenities, and provide areas along important corridors or at key community points that are expected to have increasing economic significance. (Zoning Districts Permitted: B-1, B-2, RU-1, PD)

 Commercial Growth and Preservation (CGP) – Protect and sustain existing commercial areas, including property values and amenities, and provide areas along important corridors or at key community points that are expected to have increasing economic significance. (Zoning Districts Permitted: B-3, B-4, PD)

 Industrial Growth and Preservation (IGP) – Protect and sustain existing industrial areas, including property values and amenities, and provide areas along important corridors or in emerging industrial locations that are targeted for major economic development. (Zoning Districts Permitted: B-5, B-6, PD)

 Suburban Development (SD) – Provide areas in suburban settings that are expected to have increasing community significance with opportunities for residential, commercial, and institutional uses that enhance the area as a whole. (Zoning Districts Permitted: R-2, R-3, R-4, B-1, B-2, RU-1, PD)

 Urban Development (UD) – Provide areas in urban settings that are expected to have increasing community significance with opportunities for mixed residential, commercial, and institutional uses that enhance the area as a whole. (Zoning Districts Permitted: B-4, PD)

 Public Facilities (PF) – Provide areas that local, state, or federal government maintained areas for public interest uses including, but not limited to water and sewer facilities, offices, recreation facilities, law enforcement, emergency response facilities and schools. (Zoning District Permitted: All Districts)

 Flood Hazard District (FHD) – This is the 100-year Flood Zone area as established by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) and is pursuant to compliance with the National Flood Insurance Program (NFIP) and to maintain a Community Rating System (CRS). This district will be updated following any updates to the FEMA FIRM maps. (Zoning Districts Permitted: All zoning types pending special review pursuant to Florence County Code of Ordinances: Chapter 30, Article II, Division 4)

The following maps depict the locations and extent of the Future Land Use categories. In addition to maps, some municipalities have plans to revitalize downtowns. This information is also presented. Three municipalities are outside of the county's consolidated planning effort. As a whole, the Florence County Future Land Use map displays predominant trends in agriculture and flood hazard categories denoted by municipal and industrial uses. Non-participating municipalities are shown without designations. The following maps will represent the extent of the future land use designations with the first map an overview of Florence County. To depict greater detail, municipalities are numbered and referenced with ***Table 3.5***:

Table 3.5

Municipality	Figure 7-15 map number(s)	Reference Figure ID
Coward	9	Figure 3.9
City of Florence	1	Figure 3.10
	2	Figure 3.11
	3	Figure 3.12
	4	Figure 3.13
	5	Figure 3.14
Johnsonville	13	Figure 3.15
Lake City	12	Figure 3.16
Olanta	8	Figure 3.17
Pamplico	10	Figure 3.18
Quinby	6	Figure 3.19
Scranton	11	Figure 3.20
Timmonsville	7	Figure 3.21

Figure 3.8 Florence County Future Land Use

Figure 3.9 Coward Future Land Use

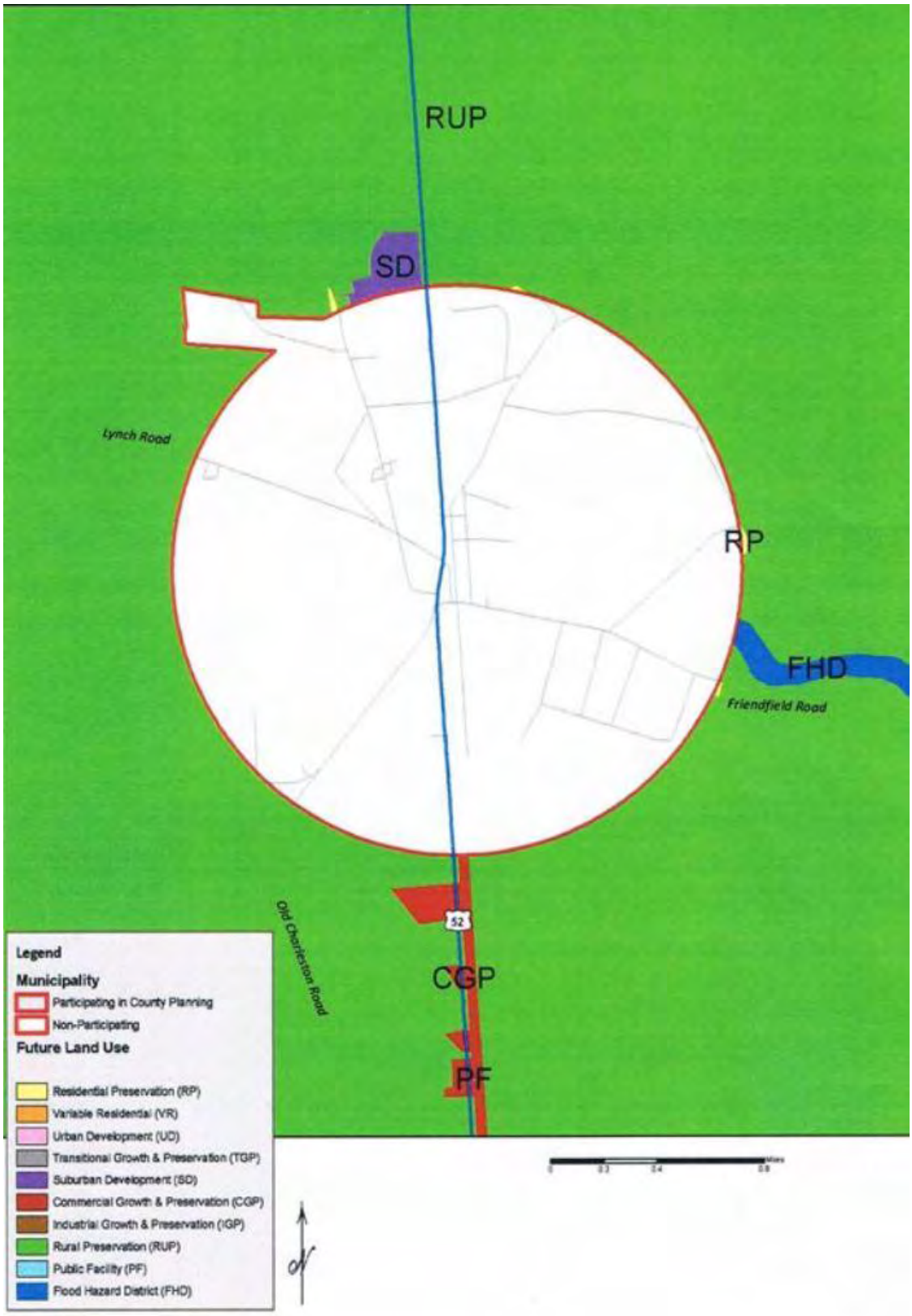


Figure 3.10 City of Florence Future Land Use 1

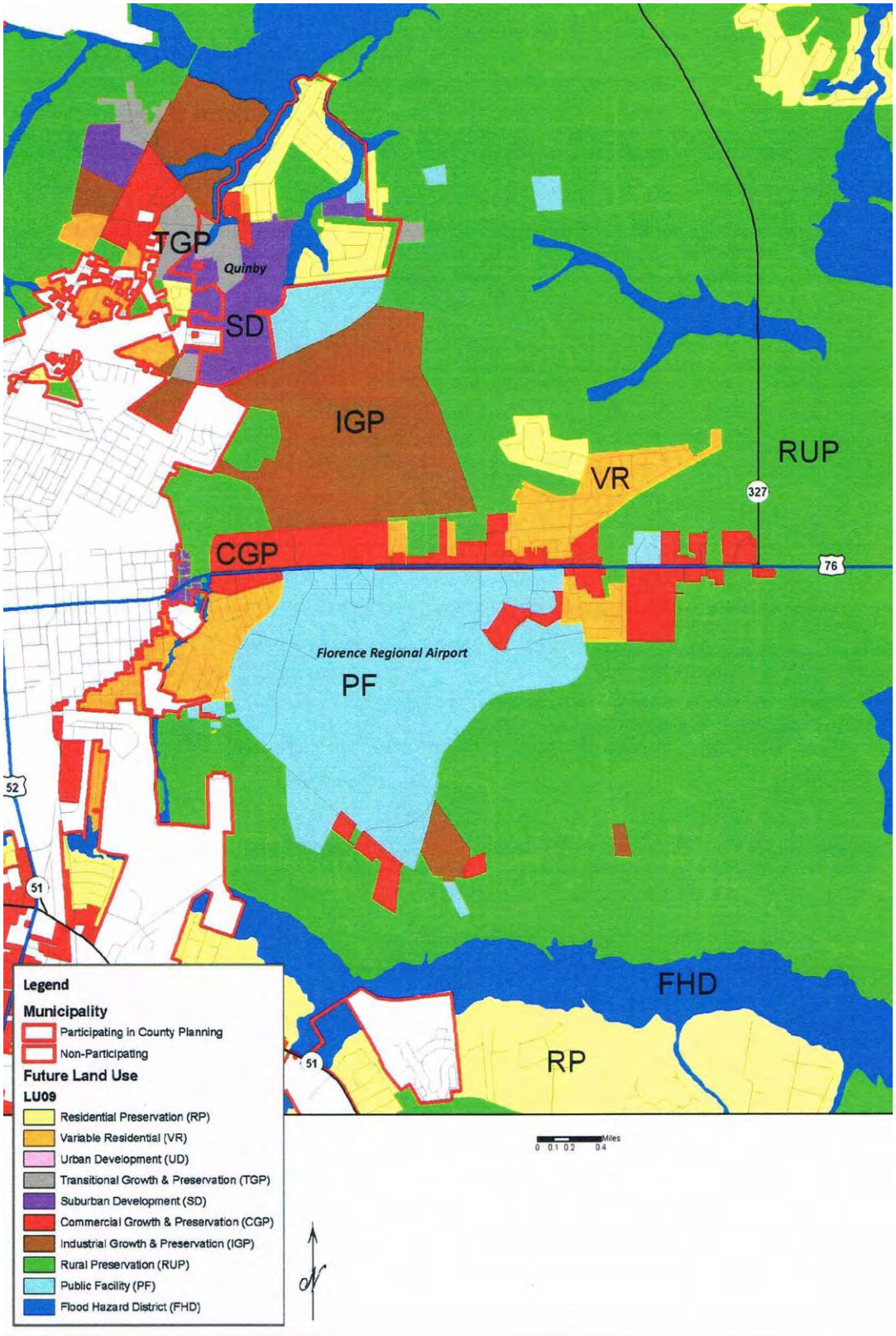


Figure 3.11 City of Florence Future Land Use 2

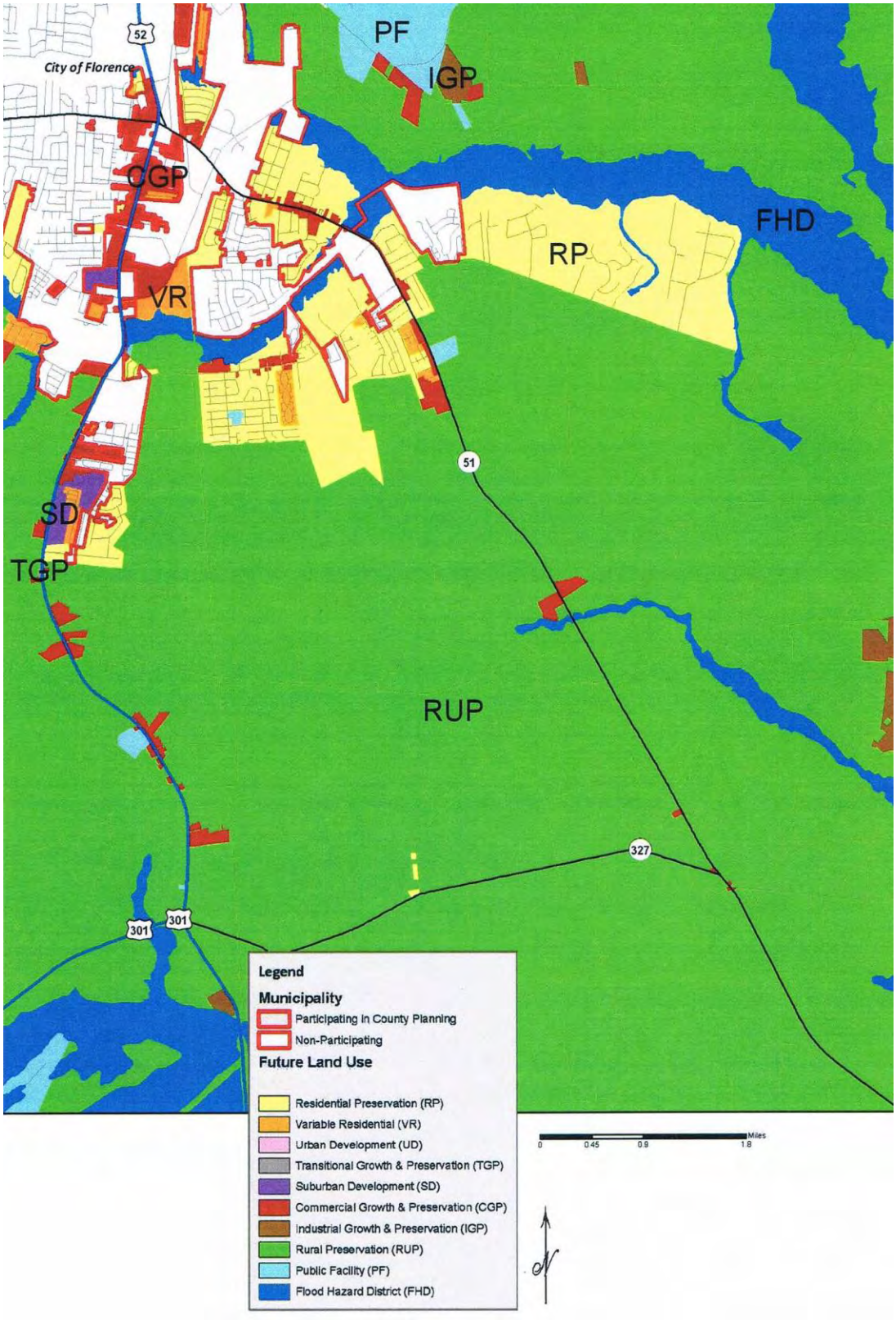


Figure 3.12 City of Florence Future Land Use 3

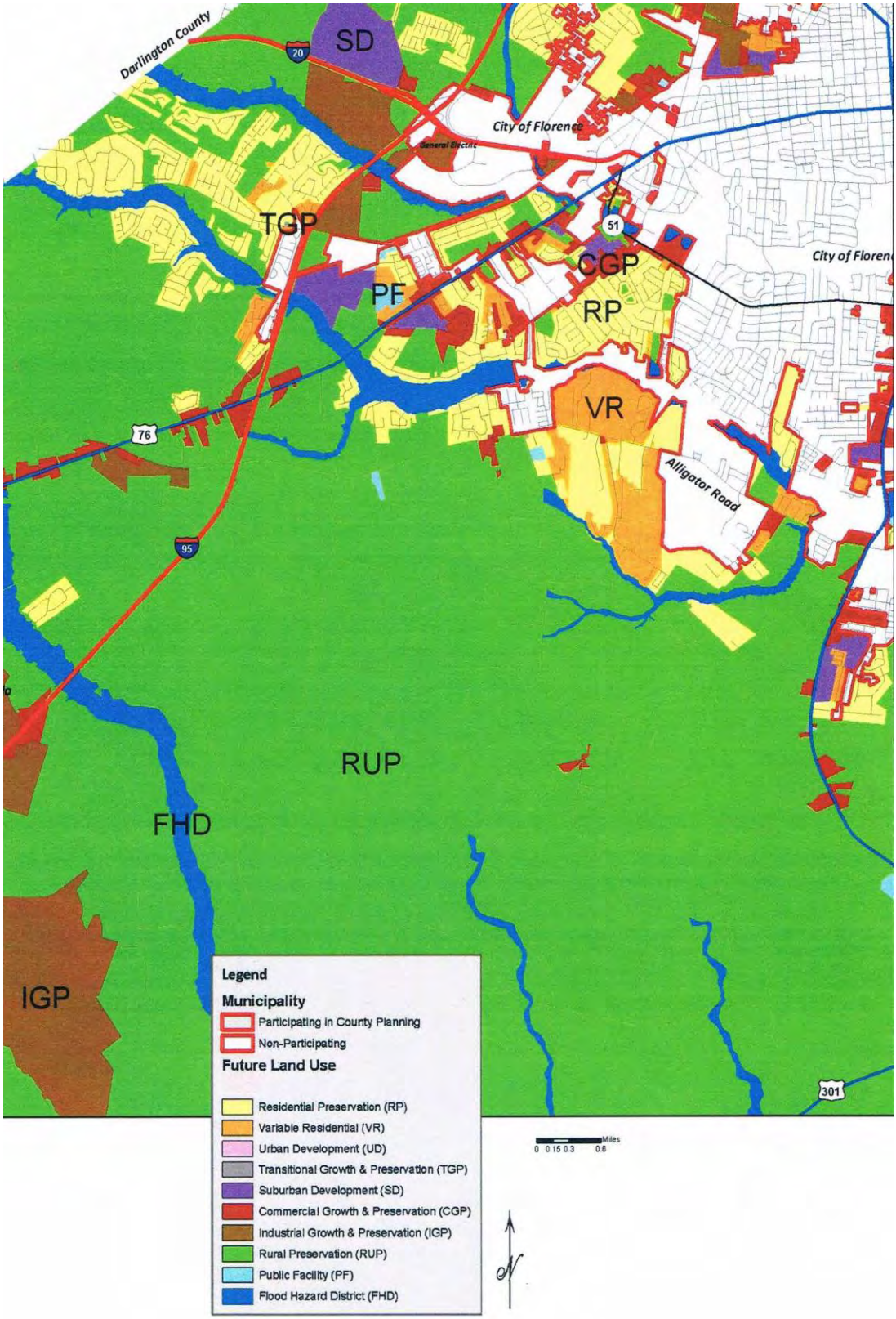


Figure 3.13 City of Florence Future Land Use 4

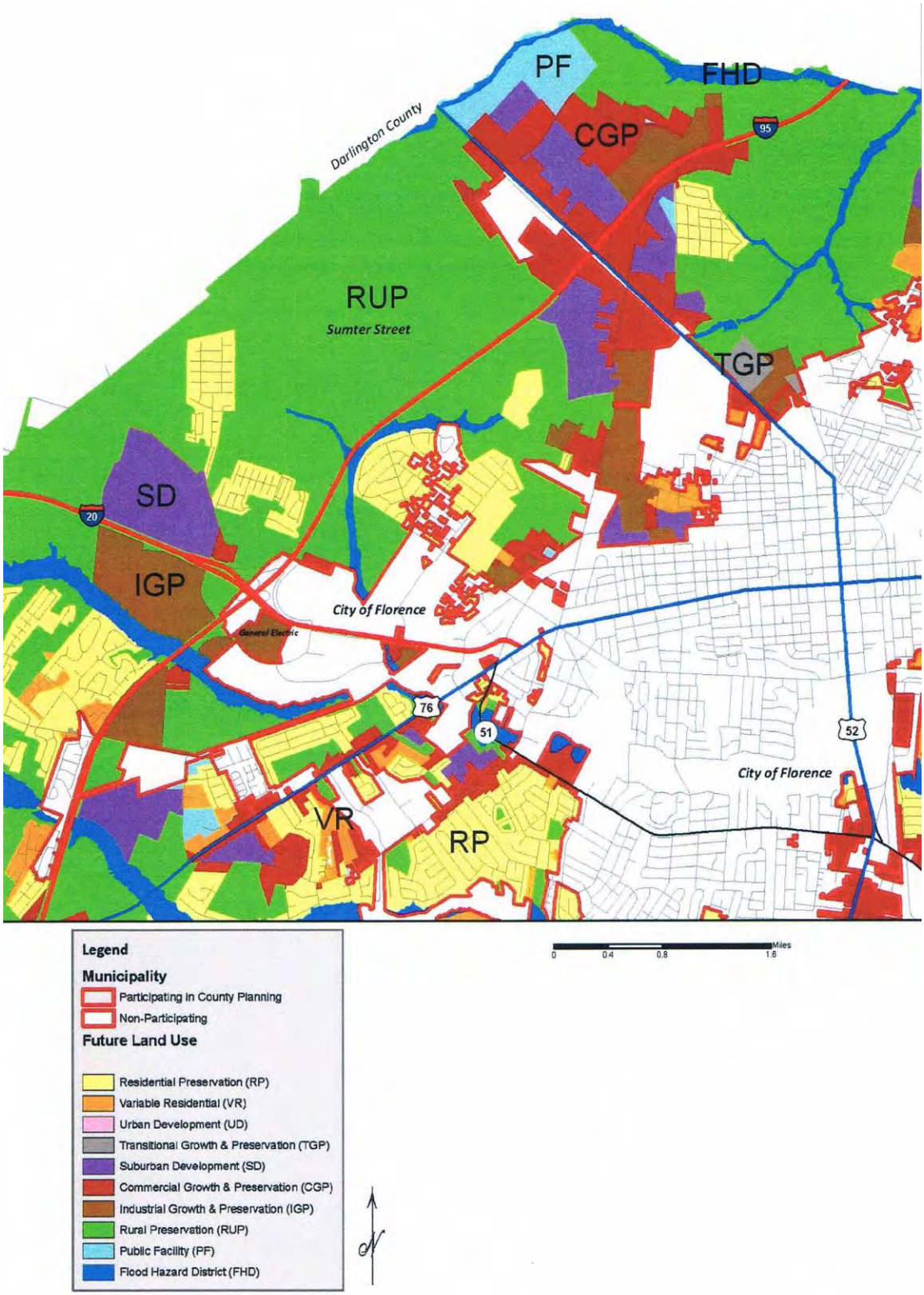


Figure 3.14 City of Florence Future Land Use 5

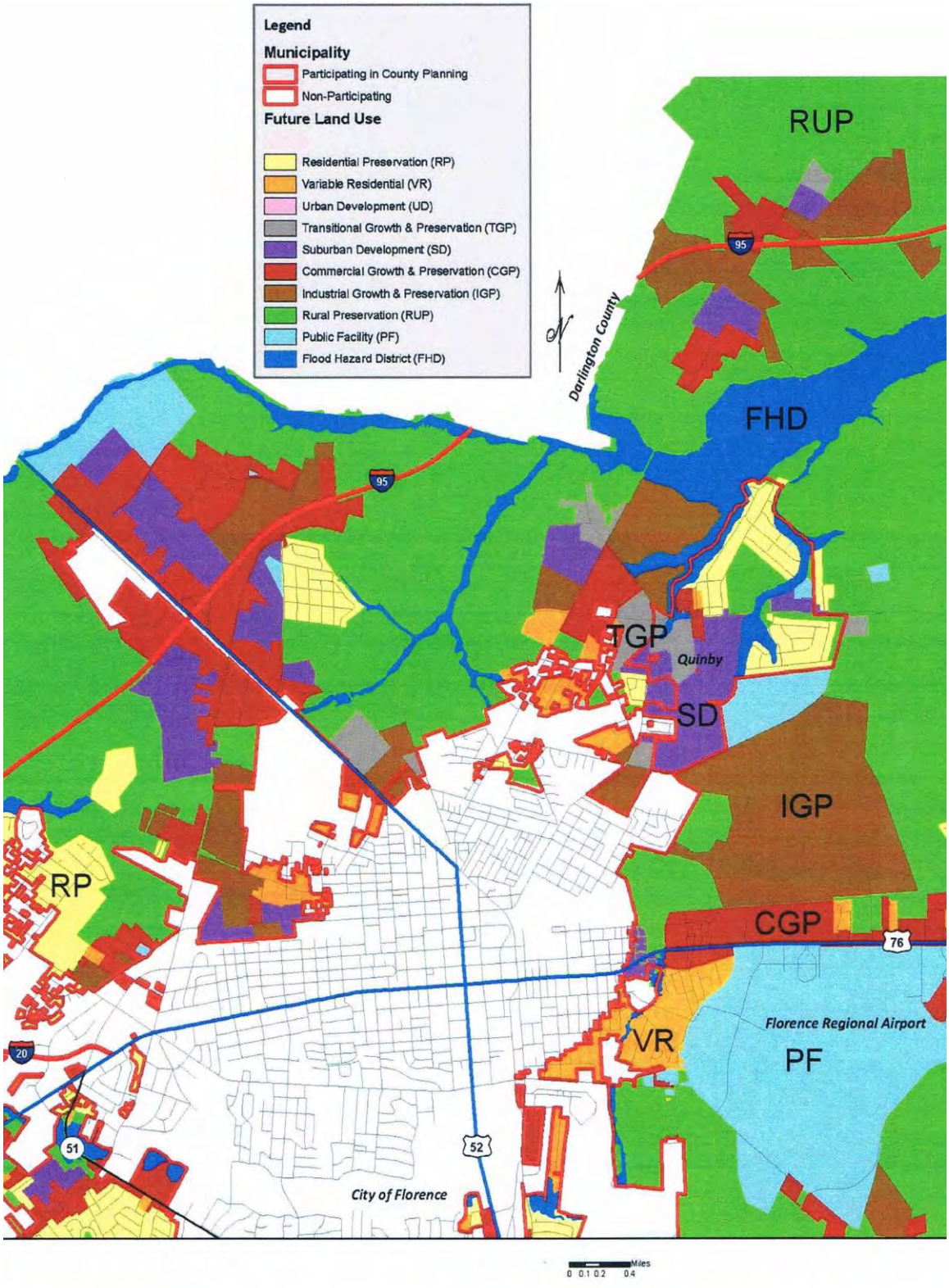


Figure 3.15 Johnsonville Future Land Use

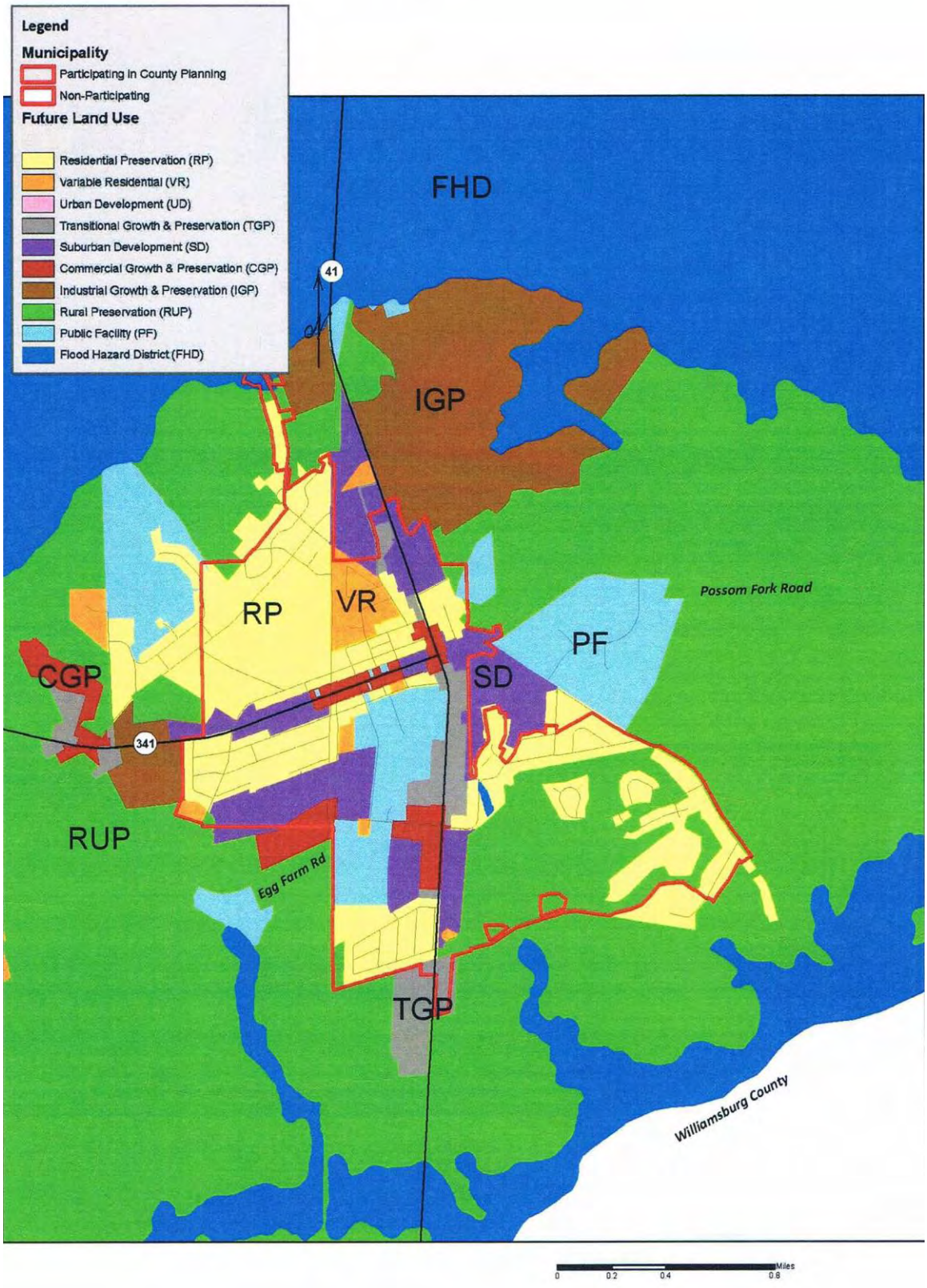


Figure 3.16 Lake City Future Land Use

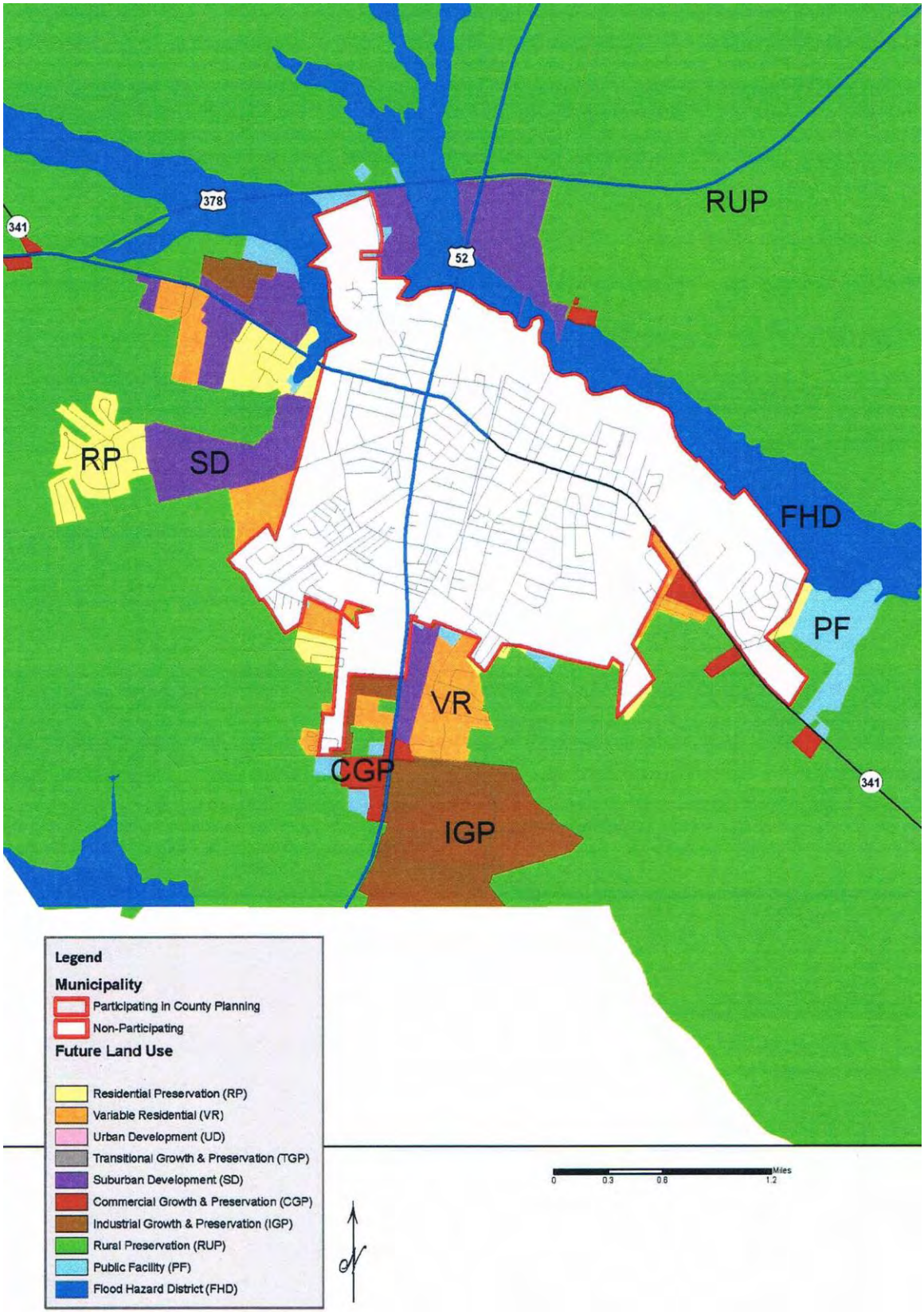


Figure 3.17 Olanta Future Land Use

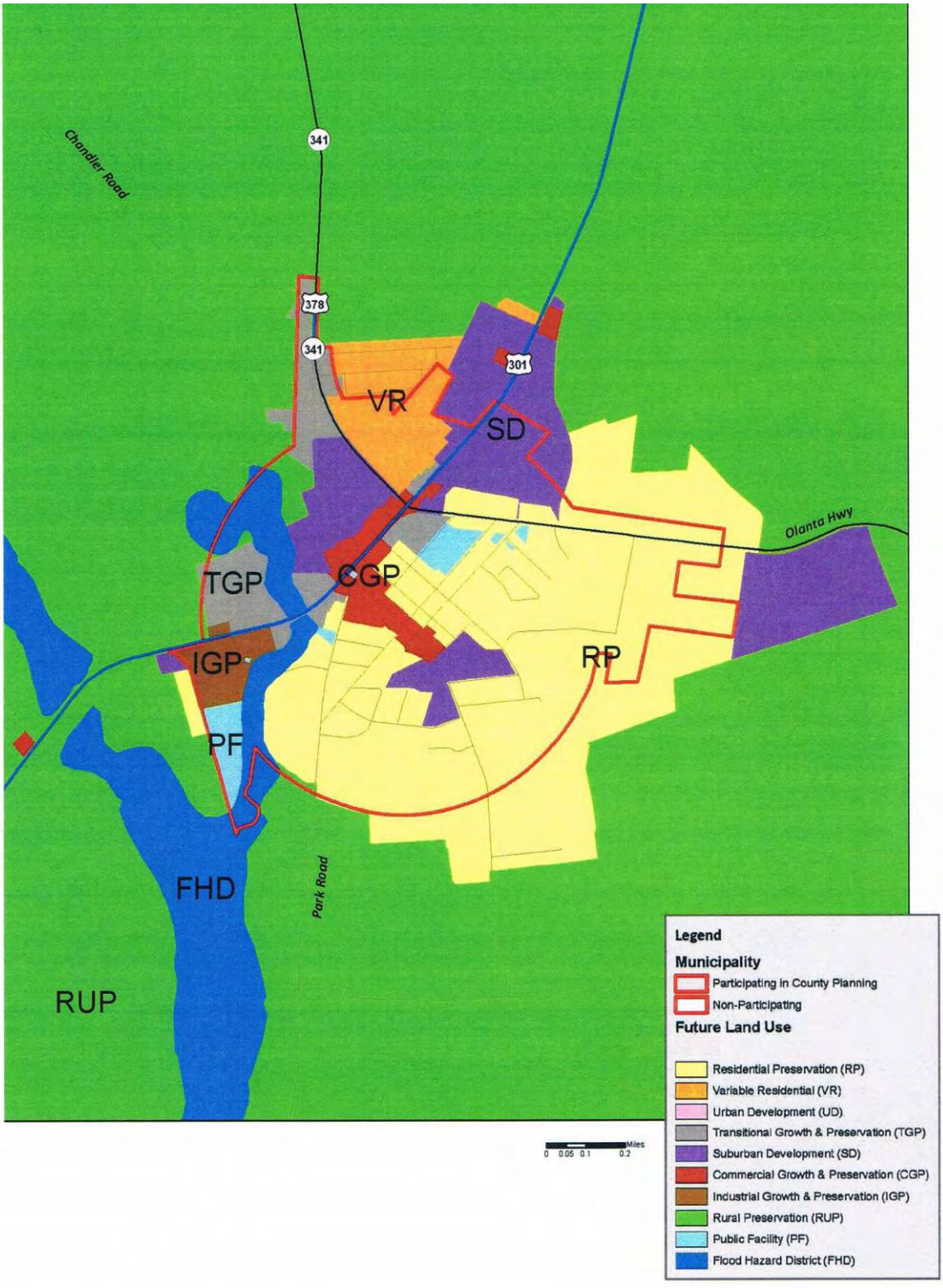


Figure 3.18 Pamplico Future Land Use

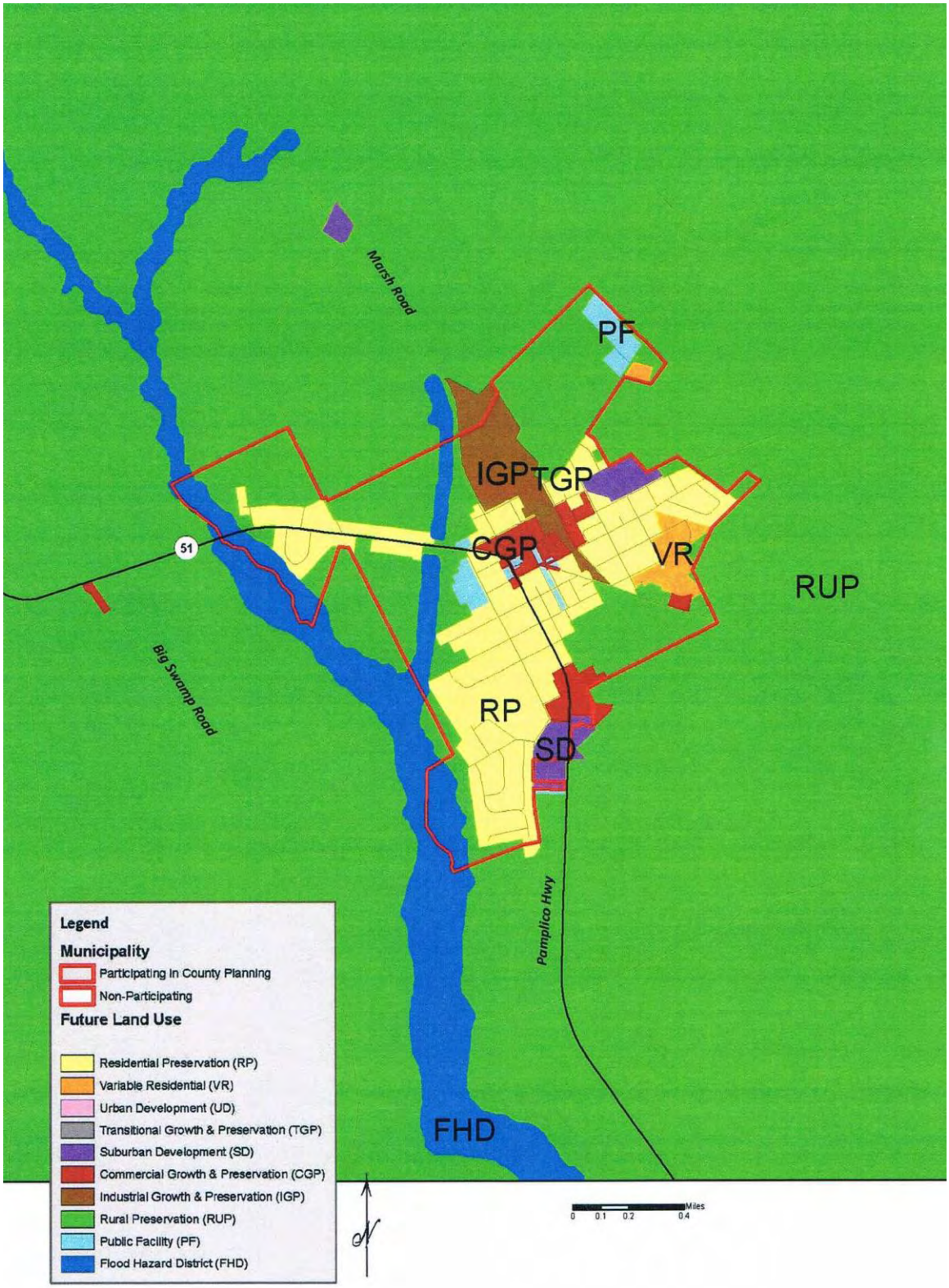


Figure 3.19 Quinby Future Land Use

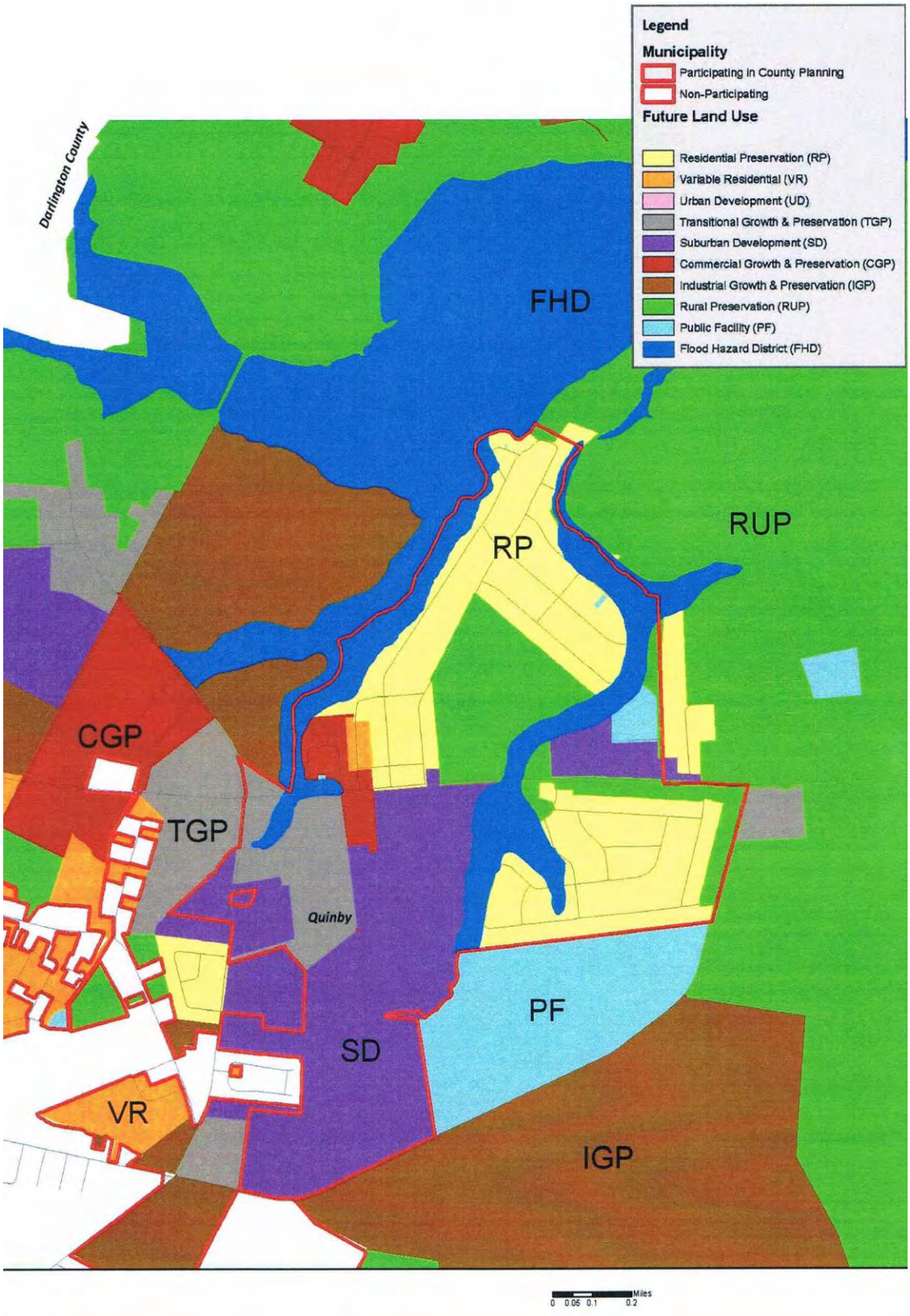


Figure 3.20 Scranton Future Land Use

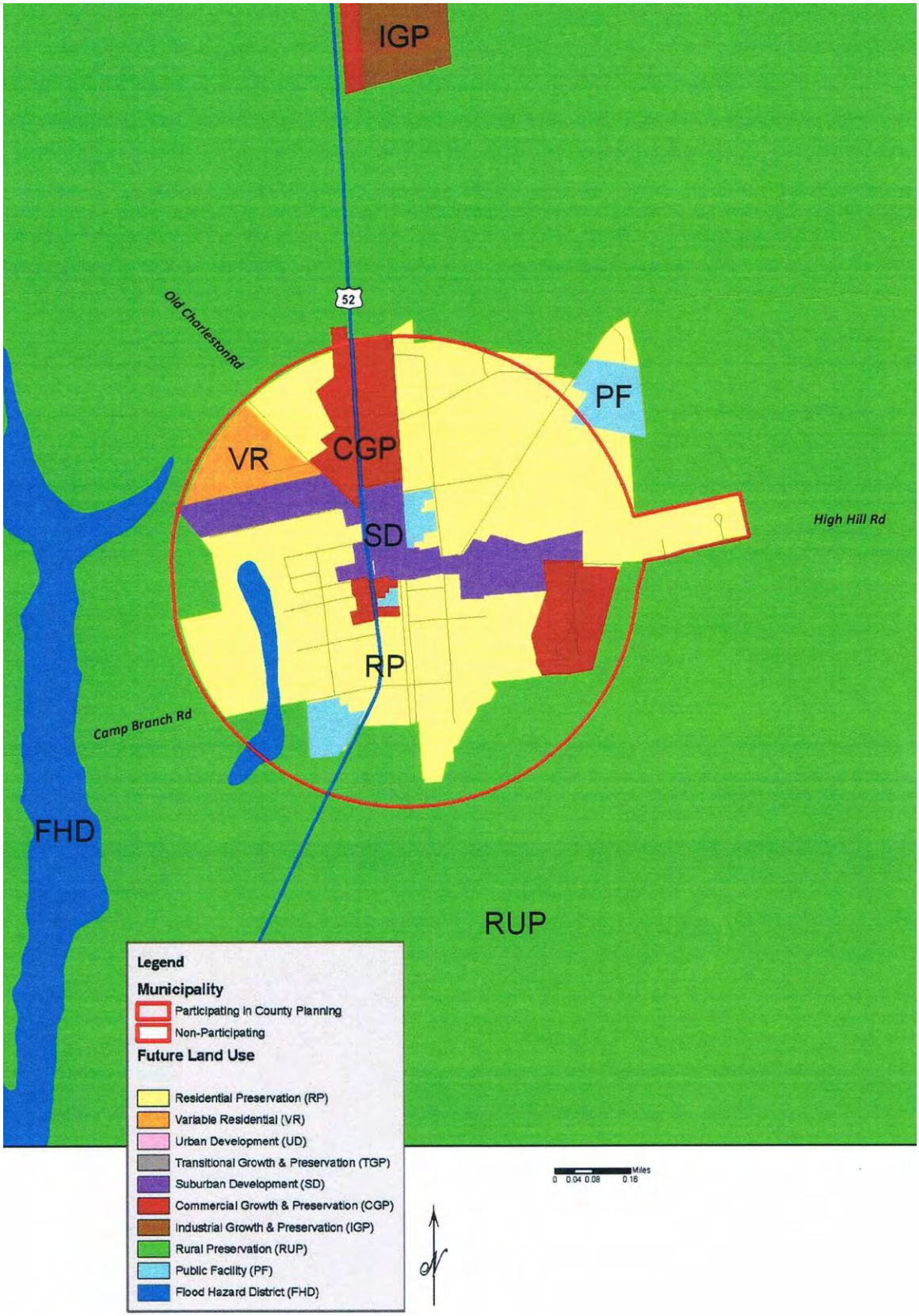
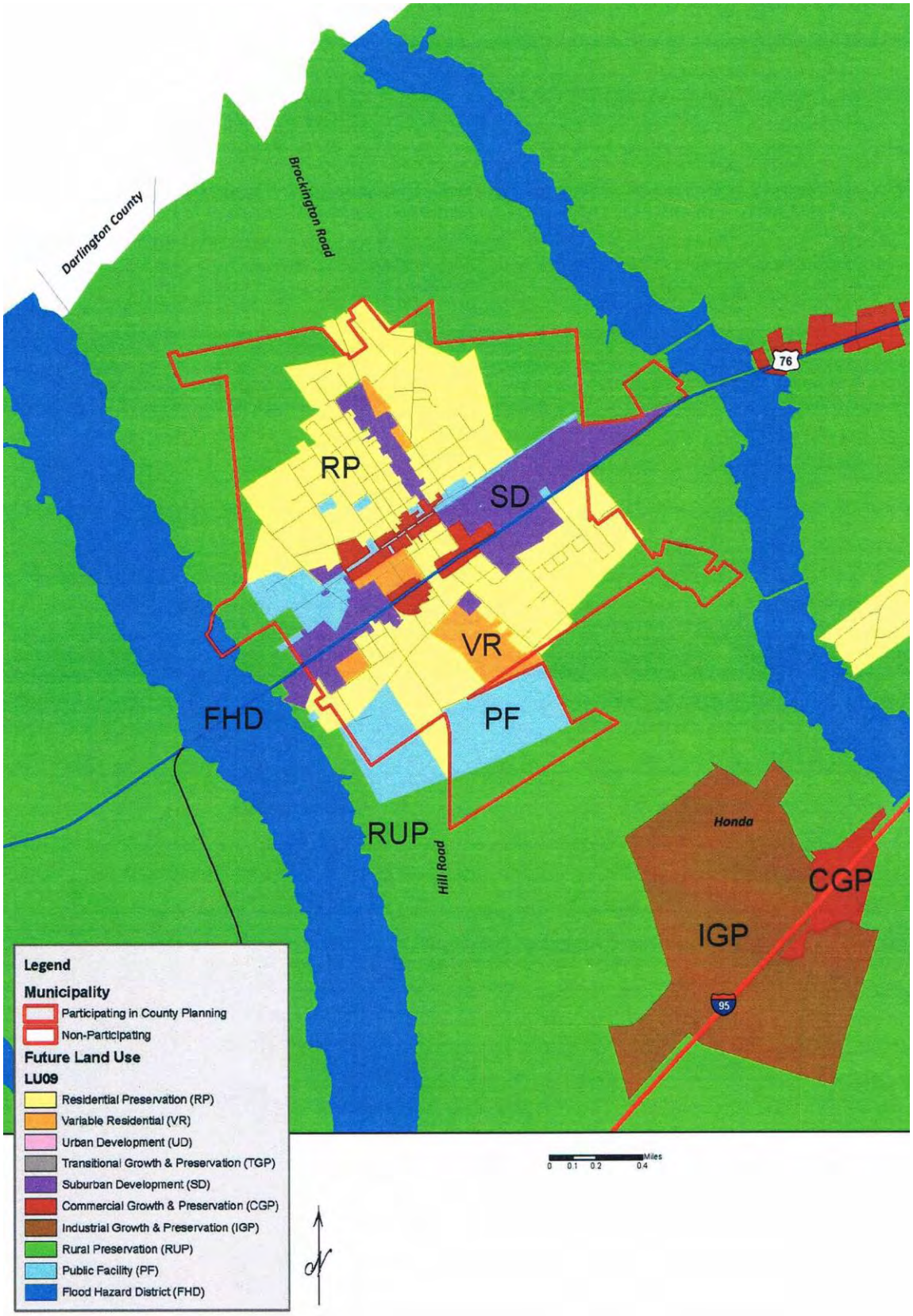


Figure 3.21 Timmonsville Future Land Use



Florence County

Hazard Mitigation Plan

Section Four

HAZARD IDENTIFICATION AND RISK ASSESSMENT

Introduction

This section of the plan summarizes the results of the hazard identification process undertaken by the FCHMPC with assistance from the staff of the Florence County Planning Department and the Florence County Emergency Management Department. The intent of this section is to provide a compilation of the information gathered about the hazards threatening Florence County. The process utilized for the development of this plan is very specific to the jurisdictions within Florence County and responsive to the unique characteristics of each.

The FCHMPC reviewed the following information sources to identify hazards that may affect the county. Numerous federal agencies maintain a variety of records regarding losses associated with natural hazards. Unfortunately, no single source offers a definitive accounting of all losses. The Federal Emergency Management Agency (FEMA) maintains records on federal expenditures associated with declared major disasters. The United States Army Corps of Engineers (USACE) and the Natural Resources Conservation Service collect data on losses during the course of some of their ongoing projects and studies. The Hazard and Vulnerability Research Institute (HVRI) at the University of South Carolina has created a database called SHELDUS, which documents different natural hazard events. This information was taken from many national databases. The current version of SHELDUS includes all loss causing events between 1960 and 1992 and from 1995 to present. Between 1992 and 1995 data reflects only events with more than $50,000.00 in damage or at least one fatality.

As a result, the FCHMPC identified the following to be the preliminary hazards list:

1. Hurricanes and Tropical Storms
2. Tornadoes
3. Flooding
4. Hailstorm
5. Nuclear Power Plants
6. Earthquakes
7. Wildfires
8. Hazardous Materials (Transportation and fixed facility)
9. Terrorism
10. Dam Failure
11. Severe Winter Weather
12. Droughts
13. Extreme Heat
14. Thunderstorms and Lightning

Some of these hazards are interrelated (i.e., hurricanes can cause flooding and tornadoes), and some consist of hazardous elements that are not listed separately (i.e., severe thunderstorms can cause lightning; hurricanes can cause coastal erosion). It should also be noted that some hazards, such as severe winter storms, may impact a large area yet cause little damage, while other

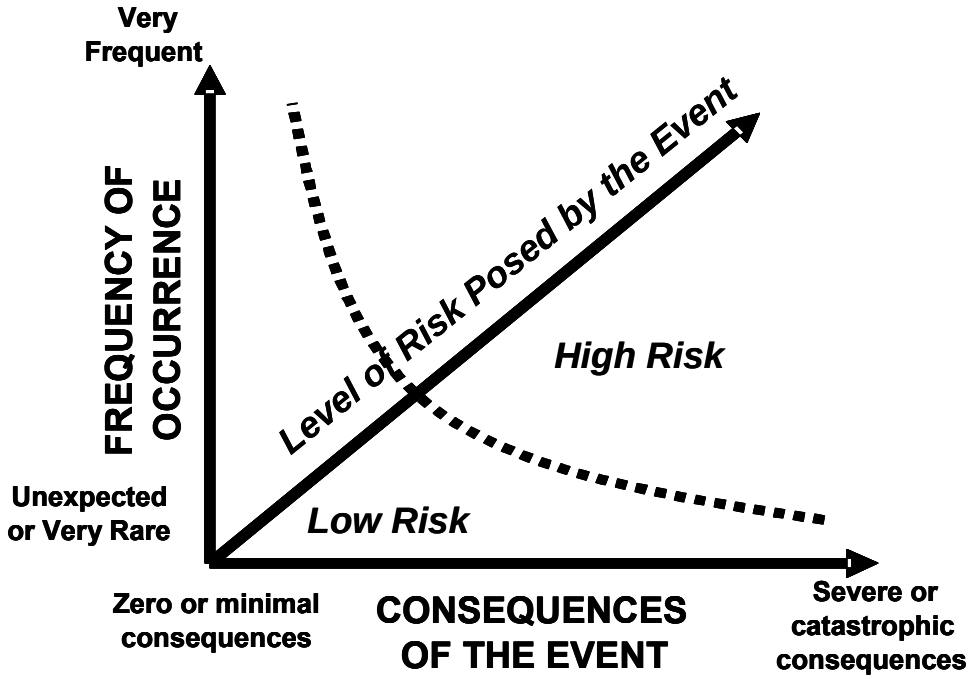
hazards, such as a tornado, may impact a small area and cause extensive damage. This section provides a general description for each of the hazards listed above along with their hazardous elements.

Hazard Identification and Risk Estimation

All of the natural, technological and societal or man-made hazards that could threaten the county were identified. When the hazard types are identified as relevant to, or of concern for, the participants can make an estimate of the risk each poses to the jurisdiction.

The estimate of risk is based on the judgment of the planners regarding the likely frequency of occurrence of the hazard event compared to its probable consequences. For purposes of this analysis, "risk" is defined as a relative measure of the probability that a hazard event will occur in comparison to the consequences or impacts of that event. That is, if a hazard event occurs frequently, and has very high consequences, then that hazard is considered to pose a very high risk to the affected communities. In comparison, if a hazard event is not expected to occur frequently, and even if it did, the consequences would be minimal, then that hazard is considered to pose a very low risk.
This relationship between frequency of occurrence and consequences of an event can be illustrated by the following graph:

Table 4 - 1



This graph illustrates that some hazards can be defined as "low risk," for they do not occur often enough and/or do not result in significant impacts even when they do. In comparison, other hazards may occur often enough and/or have sufficiently severe consequences when they do, that they must be considered "high risk." Each of the hazards considered to be a threat to the

jurisdiction can be qualitatively assessed for its probability of occurrence and its likely consequences, so that it can be indicated on the graph as falling either above or below a dotted line that can be considered to separate “high” and “low” risk hazards.

It must be emphasized that in many cases, detailed information may not have been available regarding the areas potentially impacted by a specific hazard as well as its potential health and safety, property, environmental and economic impacts of that hazard. Further, it has not been the intent of the committee to conduct extensive new studies to obtain information solely for the purposes of the development of this mitigation plan. Nor has funding been available for such research. Therefore, it has often been necessary to rely on the informed judgment of knowledgeable local officials and others to identify hazards and derive estimates of the risk each poses to the community. The committee believes that their experience with their own communities, as well as their capabilities to derive reasonable estimates of the geographic area at risk and the potential impacts of the hazard, is adequate for the purposes of this planning effort. Where the absence of hazard and risk-related data has been deemed by the jurisdiction to be a significant limitation on the effectiveness of this planning process, a mitigation initiative might be proposed to address the identified deficiency.

Identified Hazards

In this plan, a comprehensive list of potential hazards has been considered, with certain hazards eliminated from detailed analysis for a variety of reasons. The table below reviews the hazards and comments on the relevance of the hazard to the geographic and physiologic location of the region and its jurisdictions.

Physiographic Conditions Florence County and the jurisdictions included in this plan have many common physiographic characteristics. For example, all of Florence County are located within the Coastal Plains physiographic province, with a portion being least 30-35 miles from the coast. Elevations approximately 140 feet above sea level and flat terrain are typical. The impact of these natural features is two-fold:

1. Because of the general lack of slope in all portions of the county, several of the hazards reviewed are not relevant, such as landslides, avalanche, etc.

2. Because of the distance from the coast (at least 30 miles from all jurisdictions), all jurisdictions are immune from coastal storms and erosion, tsunamis, etc.

Specific natural and man-made hazards and their degree of relevance and consideration in this plan are as follows:

Table 4 – 2a

HAZARD TYPE:	RELEVANCY TO JURISDICTIONS OR EXPLANATION OF WHY HAZARD WAS NOT CONSIDERED AT THIS TIME:
AVALANCHE	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. No significant areas of slope and no cumulative snowfall is experienced during winter in any portion of the region, so this hazard has been excluded from analysis at this time.
COASTAL EROSION	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Not a coastal area. All portions of the region and all jurisdictions are over 35 miles inland. There are no beaches, so this hazard has been excluded from analysis at this time.
COASTAL STORM	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Not a coastal area. All portions of the region are at least 35 miles inland, so this hazard has been excluded from analysis at this time. HOWEVER, SEE **HURRICANES**.
DAM FAILURE	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. While recorded records of dam failure in the county and its jurisdictions are few, there is potential.
DROUGHT	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of drought in the past, so all have been assessed.
EARTHQUAKE	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. While recorded records of earthquakes in the county and its jurisdictions are few, there is potential.
EXPANSIVE SOILS	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Not typical of soil types in county, so this hazard has been excluded from analysis at this time.
EXTREME HEAT	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Considered as a factor in drought, so this hazard has been excluded from separate analysis at this time.
FLOODING	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of at least localized flooding in the past, so all have been assessed.
HAILSTORM	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of hailstorm activity in the past, so all have been assessed.
HURRICANE	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced extensive hurricane activity in the past, so all have been assessed.
LAND SUBSIDENCE	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. No historical events, so this hazard has been excluded from analysis at this time.
LANDSLIDE	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. No significant slopes or historical events have been recorded, so this hazard has been excluded from analysis at this time.
SEVERE WINTER STORM	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of severe winter storms in the past, so all have been assessed.
THUNDERSTORM	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of severe thunderstorms in the past, so all have been assessed.
TORNADO	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions

	of the county have experienced some level of tornado activity in the past, so all have been assessed.
TSUNAMI	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Not a coastal area, with all portions of the region at least 35 miles inland, with 100+ foot elevations; thus, this hazard has been excluded from analysis at this time.
VOLCANO	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. No historical data exists to indicate volcanic activity in recorded history, so this hazard has been excluded from analysis at this time.
WILDFIRE	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of wildfire activity in the past, so all have been assessed.
LIGHTNING	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county are subject to lightning hazard.
OTHER:	**Nuclear Energy Emergency:** The region is home to one nuclear power station, the H. B. Robinson Plant in Northwest Darlington County. This plant affects Florence County which is located within the 50 EPZ and the Ingestion Exposure Pathway. **Other Man-made Hazards:** In a separate section, man-made chemical and other hazardous materials are addressed, including fixed hazardous materials locations and rail/highway transportation route hazards. **Terrorism:** Because of the complex issues regarding potential threat elements, the sensitive nature of potential strategies and responses to such threats, as well as law enforcement jurisdiction over such threats, this plan will not address such issues. **Other:** No other natural or man-made hazards were identified in historical data or by community input.

Hazard Assessment

With the preceding list of hazards in mind, each hazard will be generally addressed in the following manner:

- The type of hazard will be described
- The location and extent of past events will be quantified to the extent feasible
- The probability of impact will be estimated using GIS mapping of available data
- A vulnerability determination will be made and summarized at the end of this section for all of the listed hazards.

Much of this assessment has been accomplished using GIS analysis of data. Initially, the GIS methodology for mapping and analyzing events and determining the probability of occurrence was developed by the Hazards and Vulnerability Research Institute (HVRI) under contract with the SC Emergency Management Division. Implementation of the methodology was by the Florence County GIS Department. The data is presented, when feasible, with composite assessments made of overall jurisdiction vulnerability. The overall methodology for the USC Hazard Assessment mapping is available as a technical monograph. That methodology was followed by the GIS staff and the mapping results have been reviewed by jurisdictions.

In some instances data were available only on a countywide basis, so jurisdictional details are not feasible. However, these GIS hazard vulnerability maps and the listing of hazards have been

reviewed by each jurisdiction and any local knowledge has been considered (frequency of winter ice storms in smaller jurisdictions, etc.).

For the rating of “probability” of occurrence, for each of the following hazards, the FCHMPC was asked to provide ratings of the likelihood that an event would occur in the future. The ratings that were used were:

- High Probability (highly likely to occur)
- Medium Probability (likely to occur)
- Low Probability (not very likely to occur)

These were subjective, order-of-magnitude ratings that participants could relate to whether they were highly skilled in a hazards area (e.g., members of a fire department) or not. This approach facilitated utilizing a consensus approach with the participating group. For the rating of “severity”, the FCHMPC were asked to provide ratings of the likely severity of an event, assuming one occurred in the future. The ratings that were used were:

- High Severity (extensive loss of life and/or property)
- Medium Probability (moderate loss of life and/or property)
- Low Probability (relatively modest loss of life and/or property)

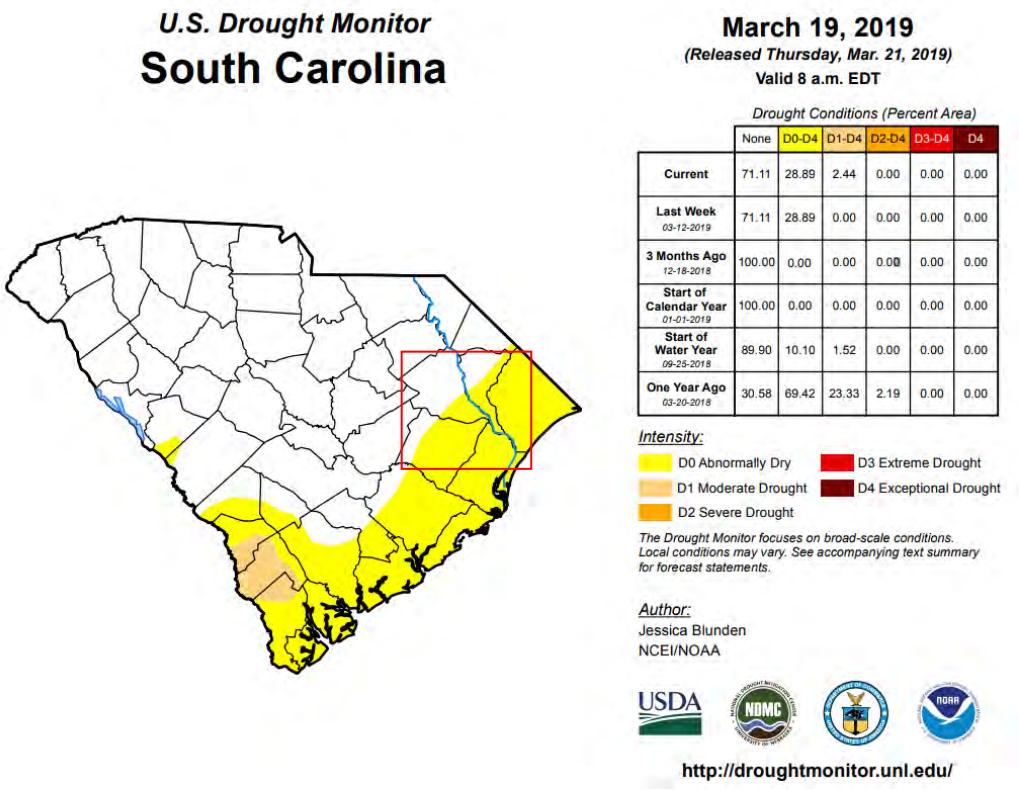
These were subjective, order-of-magnitude ratings that participants could relate to whether they were highly skilled in a hazards area (e.g., members of a fire department) or not. This approach facilitated utilizing a consensus approach with the participating group.

Drought:

Droughts are periods of abnormally dry weather that persist long enough to create serious hydrologic imbalances (such as crop losses, water supply shortages, etc.). The degree of moisture deficiency, the duration of the deficiency and the size of the affected areas are all factors considered in the evaluation of drought conditions. Drought is a widespread event. All of Florence County and its jurisdictions are equally susceptible to drought. Drought data for the sixty-eight years from 1950 to 2018 were extrapolated from storm data and then summarized. Drought designations (almost always being countywide) were considered as well.

Overall, vulnerability of drought is relatively high. With a drought likely to occur in one out of every three years and with the duration likely to be over a year, the vulnerability of this jurisdiction to such events is relatively high. In 1993 Florence County experienced an extreme or D3 drought, one of the worst droughts in recent history. A D3 drought corresponds to an area where major crop and pasture losses are common, fire risk is extreme, and widespread water shortages can be expected requiring restrictions. This caused major crop/pasture losses; widespread water shortages or restrictions. One way of measuring drought extent is defined by the drought classifications provided by the U.S. Drought Monitor. To follow is a state graphic on current drought status.

Figure 4 - 1



Historical and Notable Events

1925: The growing season had a recorded 12.41-inch rain deficit, and the State experienced an overall rainfall deficit of 18.23 inches. Water for livestock was scarce; many streams had record lows, and deep wells went dry affecting water supply and power production.

1954: The year set the current record for the State's driest year with total statewide precipitation of 32.96 inches. An excessively hot summer exacerbated the impacts of limited rainfall. According to National Weather Service reports, crop yield was only 10 percent of its 10-year average production rate. Hurricane Hazel ended extreme drought conditions in eastern South Carolina, although drought continued in western areas of the State.

1985-1986: Due to drought conditions and accompanying reduced stream flows hydroelectric power generation was curtailed by 183,978-megawatt hours at the Lake Murray Saluda Hydropower plant. The U.S. Army Corps of Engineers was forced to purchase $10 million in substitute electricity on the open market to compensate for the reduced hydroelectric power production at the Savannah River Plant.

1993: The Greenville-Spartanburg Airport recorded the hottest and driest month on record up to date in July of 1993. Similar records were set at other locations around the State. The drought,

which started at the height of the crop growing season in May and June, devastated South Carolina pastures and hay production. The drought and record heat cost the State a total of $22.5 million in crop losses. The total loss for livestock, hay, and pasture was estimated at $34.7 million.

1998-2002: This drought lasted four years and the precipitation deficits were among the largest in the State history. The two highest levels of drought severity, extreme and severe drought, lasted throughout summer of 2002; in August, State officials declared the entire State to be in the extreme drought. The drought significantly contributed to the southern pine beetle epidemic. The SC Forestry Commission estimated the total impact of the drought at more than $1.3 billion dollars. Record low river and stream levels for Lynches River at .72', Black Creek at .69' and Pee Dee River at .95'.

2007-2009: Drought affected water levels in many lakes. The Savannah Lakes were more than 19 feet below the target level. Lake Marion dropped 9 feet during 2007 reaching the lowest elevation (66.27 ft-msl) since the 1950s. The hydrological drought impacted water supplies, irrigation capacity, and many lake-related businesses as well as golf courses. Voluntary and mandatory water restrictions were issued across the State due to prolonged drought conditions and associated water supply shortages. Near record low river and stream levels for Lynches River at 1.0', Black Creek at 1.43' and Pee Dee River at 2.36'.

Recent Activity:

2015-2016: South Carolina experienced alternating wet and incipient drought conditions. In June 2015, all counties were in incipient or moderate drought. Historic floods in October 2015 alleviated the dry spell for several months. However, in August 2016 drought returned to the state. Hurricane Matthew brought excessive rainfall to most counties, but a lack of adequate moisture persisted in the Upstate region.

Vulnerability and Impacts

Droughts have far-reaching impacts on multiple sectors, such as agriculture, tourism, energy, and others. Determining the direct and indirect costs associated with drought is difficult due to drought's broad spatial extent and the difficulty in determining specific beginning and end dates.
The impacts associated with these different types of drought can change depending on when and where a drought is happening. State-owned or operated buildings, infrastructure, and critical facilities are exposed to the drought hazard depending on their location. State assets that are more vulnerable to droughts are located in counties that experienced more frequent drought duration and higher drought severity. A drought of a particular severity in the present time could have different impacts compared to past droughts because of changes in water supply and demand, assets, and populations.

Overview of Impacts by Sector

Table 4 – 2b provides a historical overview of the wide range of impacts that drought produces, and the many sectors that are vulnerable to and have been affected by drought in South Carolina.

Affected sectors and resources	South Carolina Examples	
Agriculture: Agriculture, farming, aquaculture, horticulture, forestry, and ranching	Multiple years	**Reduced crop yields**: Figure 9 shows corn crop yield anomalies during past droughts (1954, 1970, 1977, 1986, 1993, 1998, 2002, 2008, and 2011).[9]
	2011-2016	**Loss of pasture land and grazing grasses for livestock**: The USDA Livestock Forage Program provided South Carolina farmers with $17.1 million to compensate for some of these losses during this time period.[10]
Plants and Wildlife: Wildlife, fisheries, forests, and other fauna	2002	**Increased vulnerability to disease**: Four years of drought made pine trees more susceptible to Southern Pine Beetle infestation, leading to estimated timber losses of $220 million.[11] **Habitat degradation**: Blue crab and shrimp fisheries were below normal, due to drought's negative effects on nursery habitat.[12]
Fire: Forest, range, and urban fires that occur during drought events	2016	**Increased risk of fire**: Drought conditions contributed to increased fire occurrence and number of acres burned. The Pinnacle Mountain fire was the largest in Upstate history; over 10,000 acres burned and firefighting costs were more than $5 million.[13]
Water Supply and Quality: Surface or subsurface water supplies (i.e., reservoirs or aquifers)	2002	**Private wells ran dry**, new or deeper wells needed **Saltwater intrusion** in water systems in Pee Dee and Waccamaw River Basin[14]
Energy: Power production and demand	1986, 1999-2002, 2007-2008	**Reduced hydropower generation** in the Santee and Savannah River Basins[15] **Purchase and use of alternate sources of energy** to compensate for loss of hydropower generation
Business and Industry: Non-agriculture businesses	2007-2008	**Lost revenue/increased costs** to landscapers, golf courses, recreation-based businesses due to water shortages
Tourism and Recreation	2002, 2007-2008	**Closed boat ramps** due to low water levels, **cancelled fishing tournaments**
	2016	**Closed trails** at Table Rock State Park due to the Pinnacle Mountain fire
Society and Public Health: Changes in public behavior and human health effects	Multiple years	**Water use restrictions**, **burning bans**
	2016	**Road closures** and **widespread smoke** due to Pinnacle Mountain fire

Table 4-2b

Figure 4 - 2

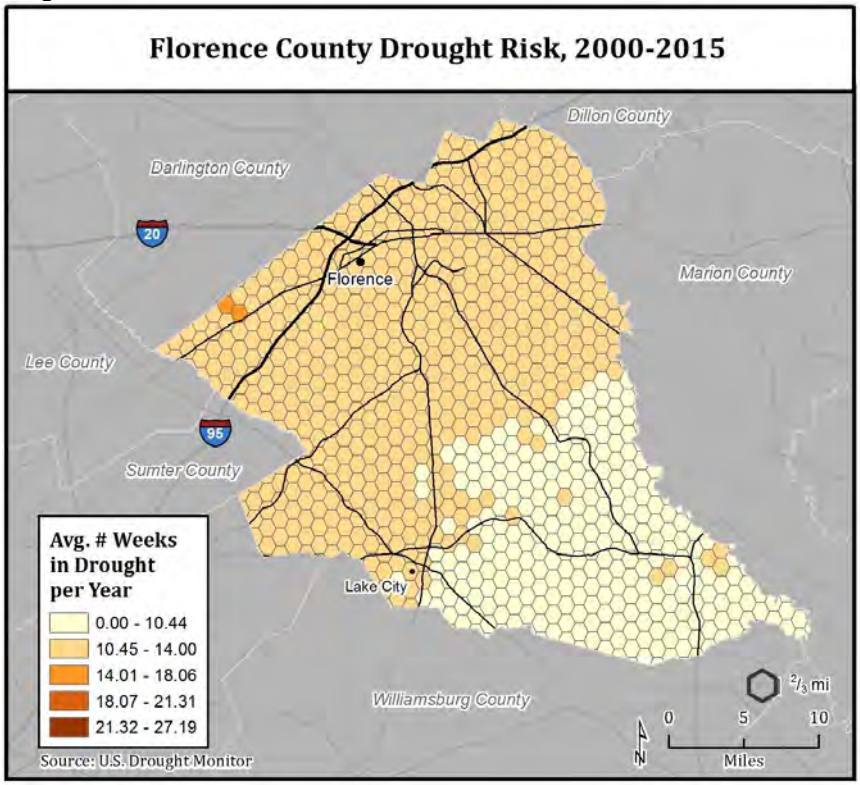
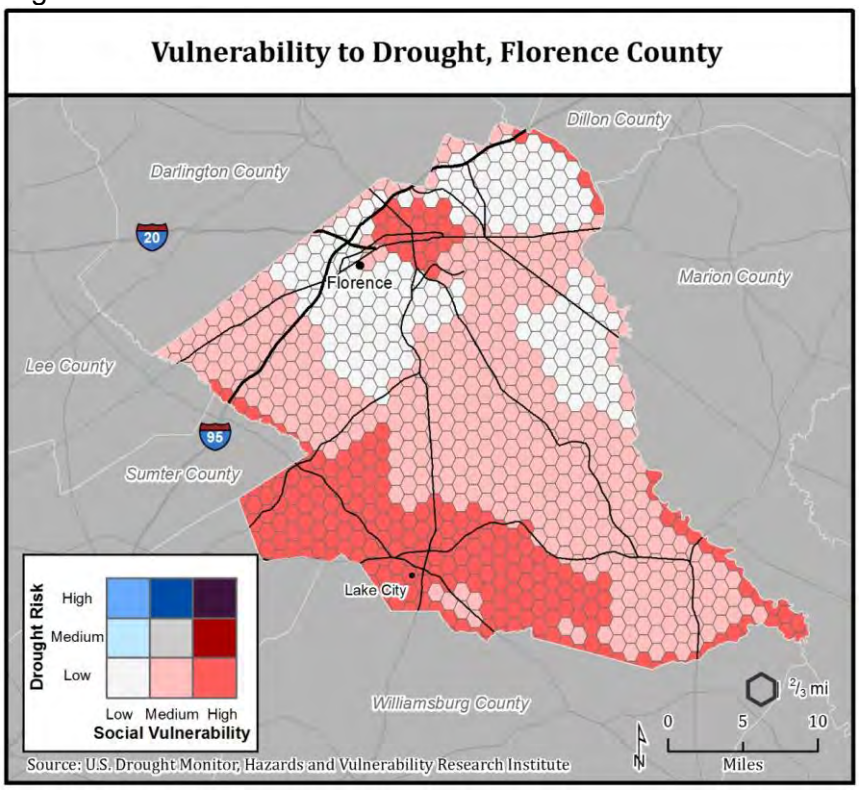


Figure 4 -3



Earthquake:

The release of seismic energy resulting from a sudden slip on a fault or other sudden stress changes in the earth are commonly termed earthquakes due to the resulting ground shaking that occurs. Magnitude and intensity are both important, as is the location of the "epicenter" of the event. The following summary indicates conditions of and from various magnitude and intensity earthquakes, based on data from the USGS:

Table 4 – 3 Modified Mercalli Intensity Scale for Earthquakes

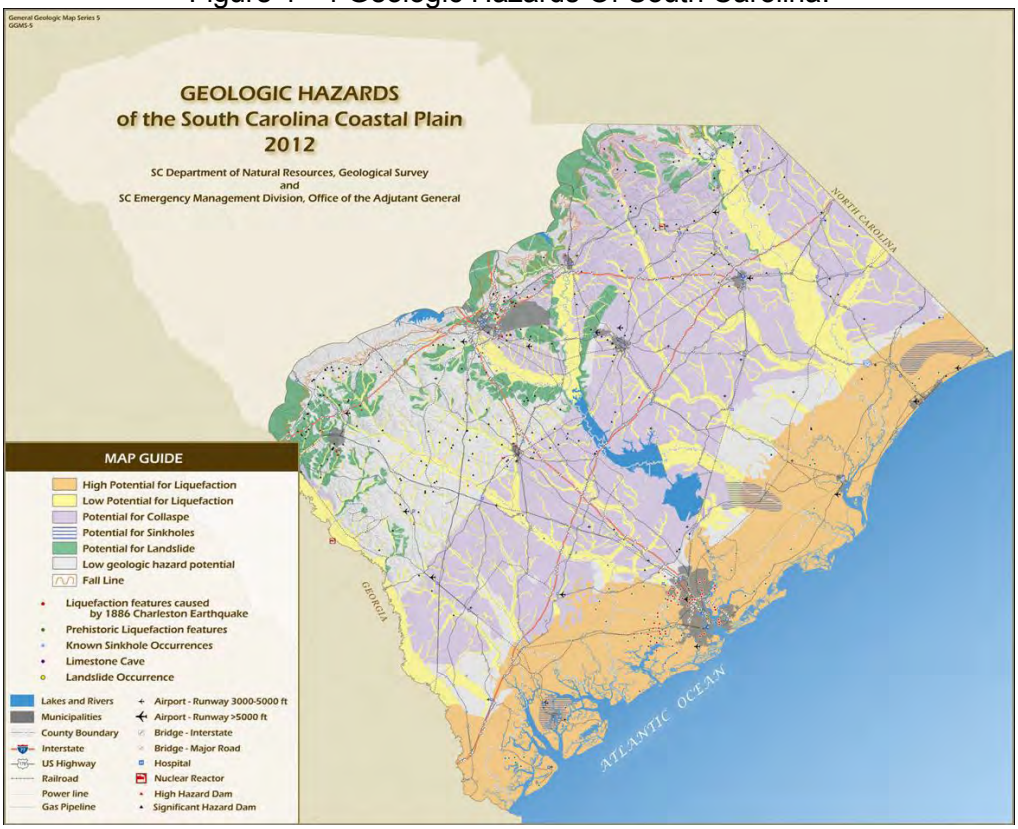
Scale	Intensity	Description of Effects	Corresponding Richter Scale Magnitude
I	INSTRUMENTAL	Detected only on seismographs.	
II	FEEBLE	Some people feel it.	< 4.2
III	SLIGHT	Felt by people resting; like a truck rumbling by.	
IV	MODERATE	Felt by people walking.	
V	SLIGHTLY STRONG	Sleepers awake; church bells ring.	< 4.8
VI	STRONG	Trees sway; suspended objects swing, objects fall off shelves.	< 5.4
VII	VERY STRONG	Mild alarm; walls crack; plaster falls.	< 6.1
VIII	DESTRUCTIVE	Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged.	
IX	RUINOUS	Some houses collapse; ground cracks; pipes break open.	< 6.9
X	DISASTROUS	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread.	< 7.3
XI	VERY DISASTROUS	Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards.	< 8.1
XII	CATASTROPHIC	Total destruction; trees fall; ground rises and falls in waves.	> 8.1

Source: Federal Emergency Management Agency

Seventy percent of earthquakes in South Carolina originate in the Middleton place-Summerville Seismic Zone, some 70-80 miles south of the county's jurisdictions. Due to the relative distance to an active seismic zone, activity has been historically low, with only one event noted between 1698 and 2018. All of Florence County could potentially experience a magnitude I to VIII. Overall,

vulnerability to earthquakes is very low for all jurisdictions. Since the last plan update there have been 0 earthquake events. To follow is a graphic on geographic hazards.

Figure 4 - 4 Geologic Hazards Of South Carolina.



Source: SCDNR and SCEMD

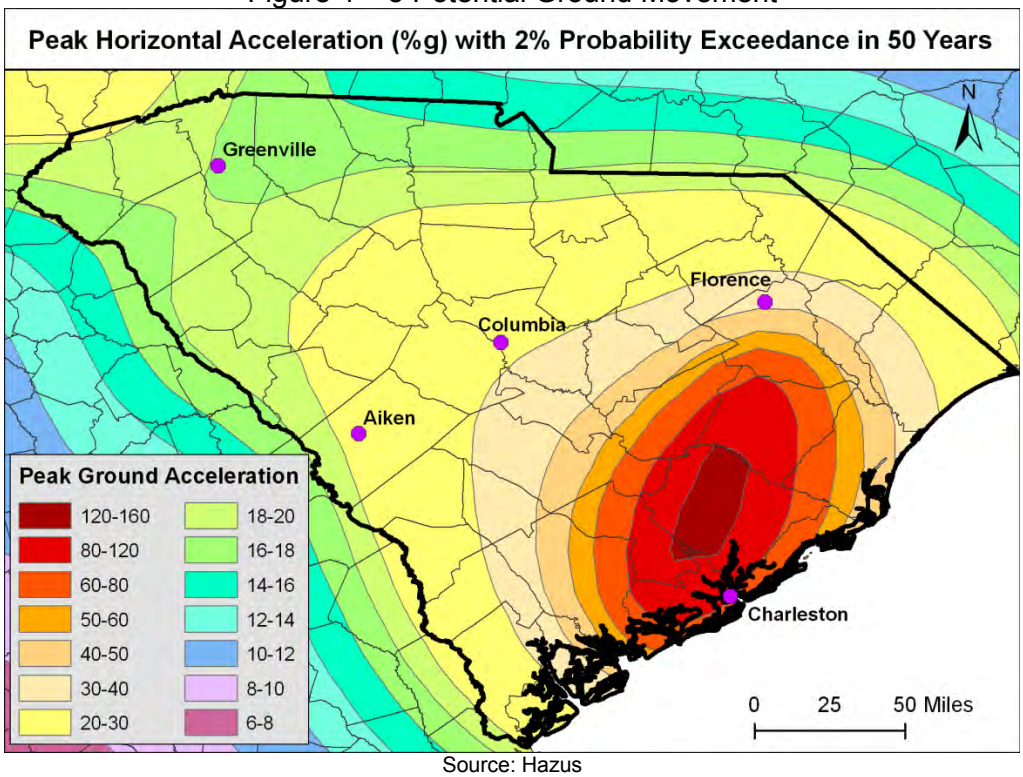
Historical and Notable Events

August 31, 1886: One of the greatest earthquakes in the United States occurred in Charleston on August 31, 1886, with an intensity of X on the Modified Mercalli Scale. This event killed over 70 people and left most structures damaged or destroyed, with an estimated damage of $23 million. The initial shock occurred at 9:51 p.m. and lasted between 35 to 40 seconds. There was a second strong aftershock 8 minutes after the initial shock, and six aftershocks followed within a 24 hour period. Within a 160 kilometer radius, cities of Columbia, South Carolina, Savannah and Augusta, Georgia also experienced damage. The total affected area covered over 5 million square kilometers, and was felt in cities of New York, Boston, Milwaukee. Cuba, Bermuda, and Ontario, Canada also felt the main earthquake.

On **June 12, 1912 and January 1, 1913**, two earthquakes occurred in Union County, South Carolina. The second was felt from Georgia to Virginia. Witnesses report the earthquake was accompanied by a loud roaring noise. A house in Union County and chimneys in Union, Spartanburg, and Cherokee Counties were destroyed. The shock was felt for more than 30 seconds in Raleigh, North Carolina. Isoseismals (lines on a map showing areas with equal seismic intensities) showed an elliptical area of approximately 43,000 square miles that felt the disturbance. Although only minor damage occurred, the intensity of the earthquake was a VII and is the largest know earthquake to have occurred in South Carolina outside of the Charleston area.

From 1989–1993 an increase in earthquake activity was noted. Seismologists consider almost half of South Carolina counties as being at high risk for seismic events because of the state's seismic history and current seismic activity. In 2002, 17 earthquake events were recorded in the Middleton Place-Summerville Seismic Zone (MPSSZ), which is located approximately 13 miles northwest of Charleston, with magnitudes ranging from 0.68 to 3.03. In addition, two earthquakes occurred on the continental shelf approximately 16 miles offshore of Seabrook and Kiawah Islands. The offshore earthquake recorded on November 11, 2002 had a magnitude of 4.32 and was felt over a wide area from Wilmington, North Carolina, south to Savannah, Georgia, and inland to areas around Columbia. Fortunately, there were no reports of damage associated with this event. Between 2002 and 2018, there were no major earthquakes.

Figure 4 – 5 Potential Ground Movement



Source: Hazus

Recent Activity (2012 – 2017)

Numerous minor earthquakes have been registered with the highest of these registered earthquakes is a 3.2 on the Richter Scale that originated around Summerville, Dorchester County. August 23, 2011 major earthquake in central Virginia was felt widespread in South Carolina, with reports of buildings shaking in Greenville, Georgetown, Myrtle Beach, and Rock Hill. Several buildings in downtown Columbia were evacuated; this was a Magnitude 5.8 event.

February 14, 2014: A 4.1 magnitude earthquake occurred at 10:23 pm with the epicenter near Edgefield. Tremors were felt across the state but no major damage or injuries were reported.

Figure 4 - 4

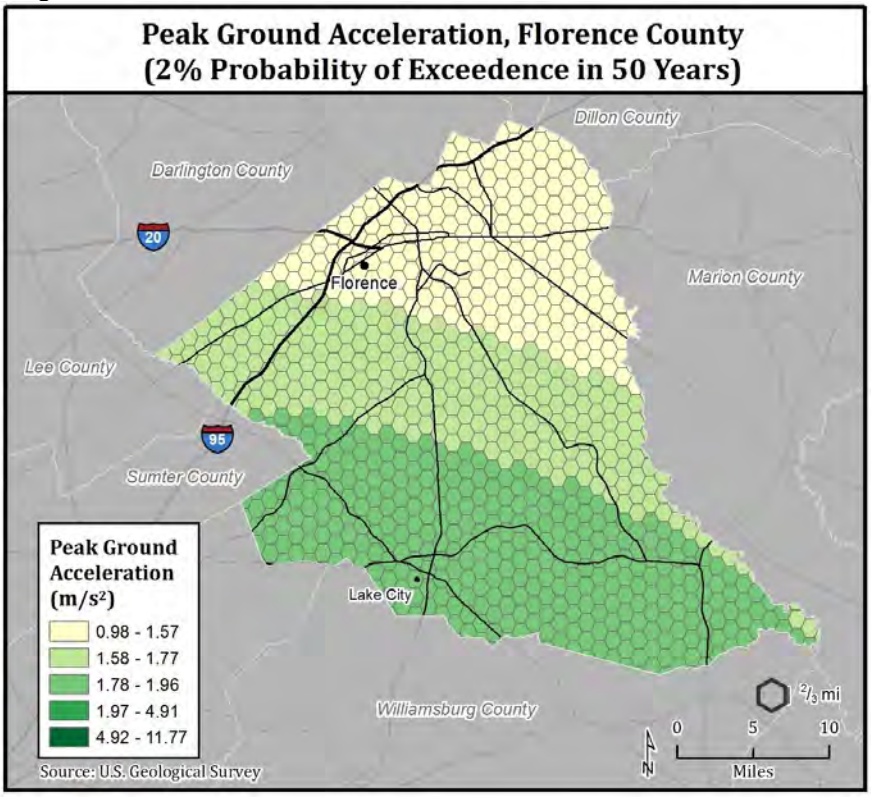
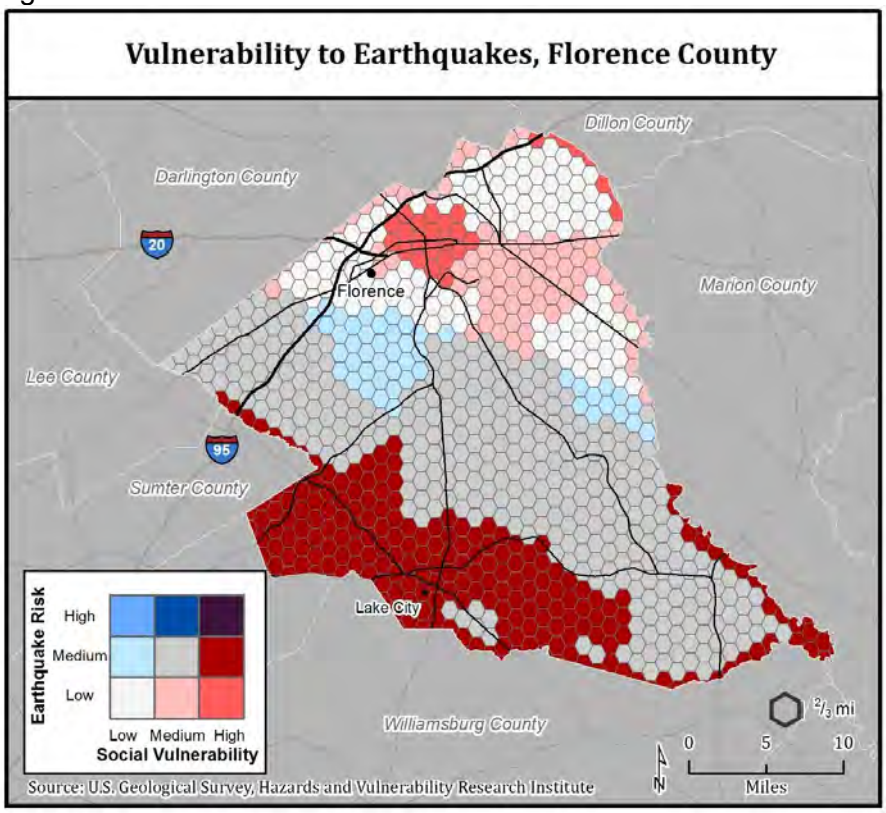


Figure 4 - 5



Vulnerability

In order to conduct the risk assessment, Hazus, FEMA's loss estimation software was used to model and provide estimates of potential impact. Hazus risk assessment method is parametric in that distinct hazard and inventory *parameters* (for example, soil and liquefaction data, and building types) were modeled using the Hazus software to determine the impact (damages and losses) on the built environment. The Hazus software was used to estimate losses from earthquake hazards. The baseline data in Hazus continually undergoes updates, such as our essential facility data update in 2016. Table 4.K.17 does not include the same information as the other hazard tables of historical events and loss information. This is due to inconsistencies and incomplete earthquake information from SHELDUS and NCDC. Annualized losses for earthquakes were modeled in Hazus, and earthquake events were taken from South Carolina's Seismic Network.

Flooding:

Floods are one of the most deadly natural disasters in the Unites States. The National Flood Insurance Program defines flooding as "a general and temporary condition of partial or complete inundation of two or more acres of normally dry land are or of two or more properties…" The causes include:

- Overflow of inland or tidal waters
- Unusual and rapid accumulation or runoff of surface waters from any source, or
- A mudflow

There are five distinctive types of flooding in South Carolina.

1. Flash flooding: rapid onset events which occur from short, heavy rainfall, accumulating in areas faster than the ground is able to absorb it. Urban flooding: occurs because of impervious surfaces (streets, roads, parking lots, residential and business areas that inhibits ground water absorption, causing runoff
2. Riverine flooding: this occurs when an increase in water volume within a river channel causes an overflow onto the surrounding floodplain. This type of flooding is the most common in the United States and is may also be termed 'overbank flooding'.

3. Coastal flooding: water pushed inland as a result of storm surge, wind-driven waves, and heavy rainfall produced by hurricanes, tropical storms, nor'easters, and other coastal storms.

4. Local drainage problems: can occur anywhere in the State where the ground is flat, where the drainage pattern has been disrupted, or where channels or culverts have not been maintained.

5. Dam/levee failure: each dam in the State has the potential to fail and suddenly release its impounded water, flooding the land downstream. The threat from dam failure increases from aging dams, and when additional dams are built for retention basins and amenity ponds in new developments. Older dams may not have been built for current engineering standards. Many dams exist on smaller streams that are not mapped as floodplains or subject to floodplain regulation, leaving downstream residents unaware of

potential risks. At this time DHEC is completing significant assessment & recovery work of the dams throughout the state.

In the jurisdictions covered by this plan, the typical causes are flash flooding, riverine flooding and local drainage problems. Coastal flooding is not a recognized hazard in any jurisdiction covered by this plan.

Due to the frequency of storms and the low and flat topography of much of the county, flooding is a common occurrence in much of the region, including urban areas where dramatic increases in impervious surfaces and the narrowing (by infill) and channelization of natural tributaries worsens the frequency of events. Indeed, such fill areas and channelization make the determination of flood-prone areas more complex. According to NCDC, Florence County and participating jurisdictions have experienced 22 flooding events in the past 7 years. These range from flash flooding during a thunderstorm to severe flooding lasting several days.

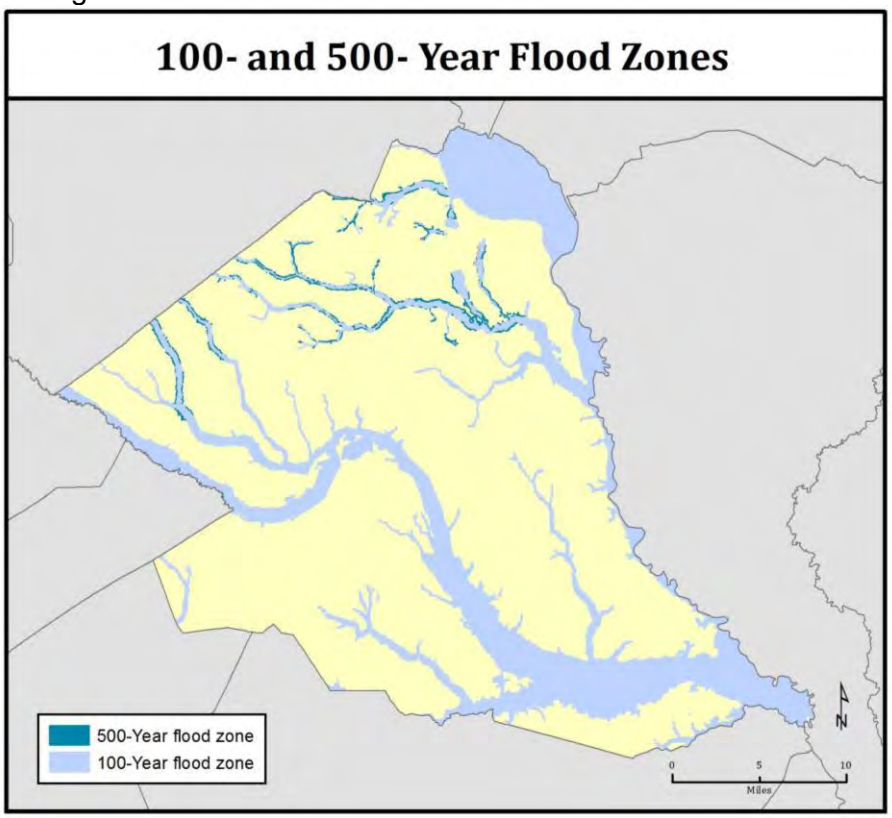
Florence County: This is a large county with generally flat terrain. The western and eastern boundaries of the County are extensive floodplains associated with the Lynches and Great Pee Dee Rivers, respectively. Other floodplains are narrow, except for significant portions of Lynches River, Black Creek and some portions of Jeffries Creek. Although flooding can happen anywhere in South Carolina, given the atmospheric conditions and/or lack of proper maintenance to flood control and drainage systems, flooding typically occurs in floodplains. Floodplains are flat areas adjacent to streams and rivers that are prone to flooding. This area absorbs any overflow of water from the stream or river banks. Floodplains are designated by the frequency of the flood that is large enough to cover the area. For example, the 10-year floodplain will be covered by the 10-year flood and the 100-year floodplain by the 100-year flood. Flood frequencies such as the 100-year flood are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. Another way of expressing the flood frequency is the chance of occurrence in a given year, which is the percentage of the probability of flooding each year. For example, a 10 year flood has a 10 percent probability of occurring in any given year, a 50 year event has a 2% probability, a 100 year event a 1% probability, and a 500 year event a 0.2% probability. While unlikely, it is possible to have two 100 or even 500 year floods within months or years of each other.

Minor Flooding is defined to have minimal or no property damage, but possibly some public threat. Moderate Flooding is defined to have some inundation of structures and roads near the stream. Some evacuations of people and/or transfer of property to higher elevations may be necessary. Communities affected by flood-prone areas in Florence County are listed below.

Table 4 – 6

Jurisdiction/Community	Extent of Flood Prone Areas
Florence County (Unincorporated Area)	Moderate – Several major rivers.
Coward Town	NO DESIGNATED FLOOD-PRONE AREAS
Florence City	Moderate – Southern and Central portions of the City
Johnsonville City	NO DESIGNATED FLOOD-PRONE AREAS
Lake City City	Moderate – Northern edge of City
Olanta Town	Moderate – Western edge of Town
Pamplico Town	NO DESIGNATED FLOOD-PRONE AREAS
Quinby Town	Moderate – Northern edge of Town
Scranton Town	NO DESIGNATED FLOOD-PRONE AREAS
Timmonsville Town	Low – Limited to western and eastern edges

Figure 4 - 6



Historical and Notable Events

To supplement the flood-prone areas just described, a statistical reflection of flood risk has been made using historical flood data summarized below

September 1945 After making landfall as a major hurricane near Homestead, FL, the remnants of the "Homestead Hurricane" produced very heavy rainfall across northeast South Carolina. Darlington, SC reported 7.00'' of rain, Lake City, SC measured 6.30'' of rain, and Dillon, SC received 5.01'' of rain. The Pee Dee River at Pee Dee, SC reached its ALL-TIME highest crest of 33.30 ft. This far surpassed its major flood stage of 28 ft. The Lynches River at Effingham, SC also reached its ALL-TIME highest crest of 21.21 ft.

October 1990 Heavy rains produced riverine flooding which affected Florence and 11 additional counties and costing over $3 million. Lynches River crested at its 6th highest crest of 18.85 ft.

October 1994 Bands of heavy precipitation produced four to ten inches of rain along the South Carolina coast, causing varying degrees of flash flooding in 40 counties. Flash flooding caused $2,932,000 in property damages and $11,720 in crop damages, based on current dollar estimations.

August 1996 Flash Flooding costing over $200,000.

August 2004 When Category 1 Hurricane Gaston made landfall at Bulls Bay in Charleston County it did so as a minimal hurricane with winds of 70 mph. However as it moved inland over South Carolina that day and overnight caused flash flooding across several counties. Rain fall totaling 6.45 inches was reported in Lake City and 9.83 inches in neighboring Cades which lead to this flash flooding.

September 2010: In the Caribbean, a broad area of disturbed weather and disorganized low pressure lingered behind the recently dissipated Tropical Storm Matthew. At the same time, a cold front had made it's way across the Appalachian Mountains, and by Sunday night had become a stationary boundary stalled over the eastern Carolinas while a wave of low pressure was beginning to develop along this boundary over Georgia. Rain totals were Quinby 8.86; Florence 7.71 and Lake City 5.83. These rains caused flash flooding as well as long term standing water and road way flooding.

Recent Activity (2013-2018)

October 2015: A stalled cold front pulled moisture from nearby Hurricane Joaquin. Record breaking rainfall caused extreme flooding across large areas of the state. Accumulations reached as high as 26.88 inches. Flash flood emergencies were issued for several counties. 51 dams across the state were breached or collapsed. Several rivers reached major flood stage. 19 fatalities were confirmed as a result of the flooding. Property damage was estimated to be at least $75,000,000. Emergency orders were issued for 75 dams, and 192 additional dams were identified as needing inspection and potential repairs. In Florence County there were 125 roads washed out or blocked with damage in excess of $200,000.00 State Roads I-95, I-20, Highway 52, Highway 378 and Highway 51 were closed for an extended period of days. There was $4.4 million dollars in damage to 475 privately owned structures in Florence County and its participating jurisdictions. Damage ranged from inches of water affecting crawl spaces to water reaching roof lines in all areas of the county.

October 2016: Hurricane Matthew moved up the southeast coast and slowly weakened to a category 1 storm as it moved up along the South Carolina coast and then eastward near the North Carolina coast. The hurricane brought 6 to 12 inches of rain and up to 15 inches to some areas of northeast South Carolina, with the bulk of the rainfall occurring within a 12 hour period. This rain fell on wet, to in some cases, saturated soil due to much above normal rainfall in September. The result was historic flooding; widespread flash flooding, and an extended period of river flooding in Florence County and all participating jurisdictions. Approximately 25 dams breached and 12 emergency order dams had severe storm damage across the state. Matthew's flooding rains, surge and wind brought loss of life, displaced tens of thousands of people, and caused millions of dollars in Florence County in structural damage as homes and businesses were devastated or totally destroyed. Major infrastructure had to be repaired or rebuilt. Of 2,358 homes and businesses damaged approximately 25% of them were damaged due to flooding. In the municipalities of Coward, Johnsonville, Olanta, Pamplico, Quinby, Scranton and Timmonsville there were reports of homes with inches to feet of water causing substantial damage.

September 2018: Hurricane Florence, a large and slow moving category one hurricane, made landfall during the morning of September 14, 2018 producing record-breaking rainfall across eastern North Carolina and a portion of northeastern South Carolina. South Carolina Emergency Management reported 9 fatalities across the state; $607 million in damages; 11,386 homes with moderate or major damage; 455,000 people evacuated, and 11 dams breached or failed. Record river flooding developed over the next several days. Flooding along the Lynches River prompted the evacuation of 2500 residents from the southern portion of the county on September 21st. Flooding on the Great Pee Dee River shut down a portion of the city of Florence's municipal water system on September 24. Two homes in Florence County were destroyed by Florence's floodwaters, with 52 others damaged for a total of $279,124. Around 250 homes in the county suffered damage, totaling approximately $1 million.

Figure 4 - 7

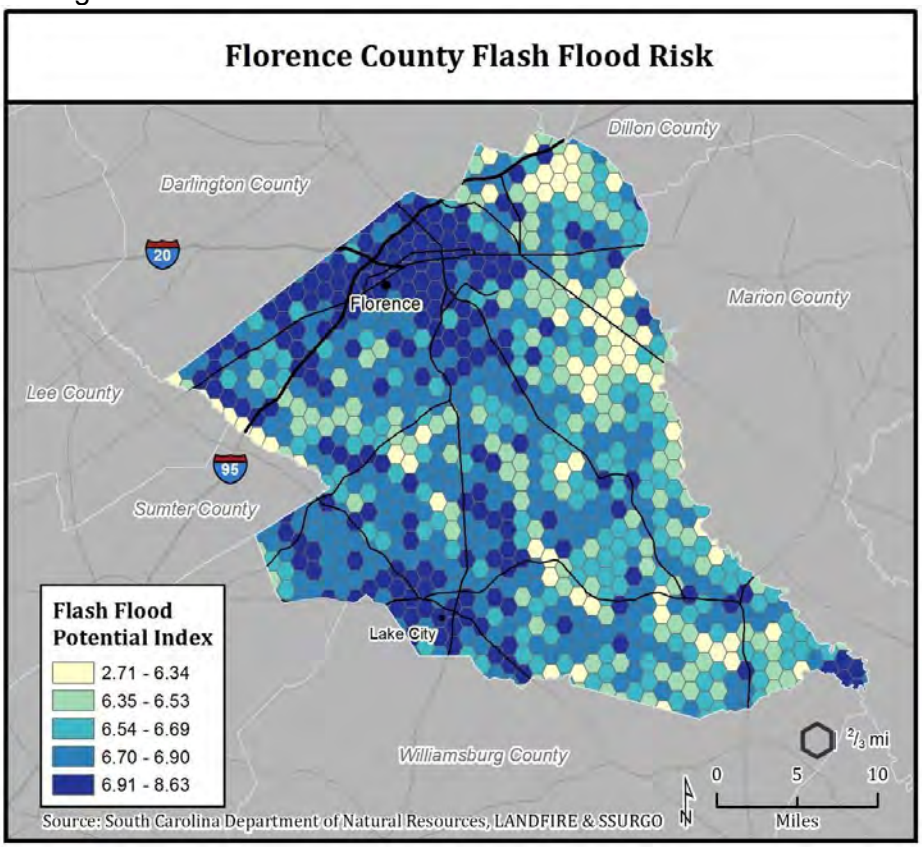


Figure 4 - 8

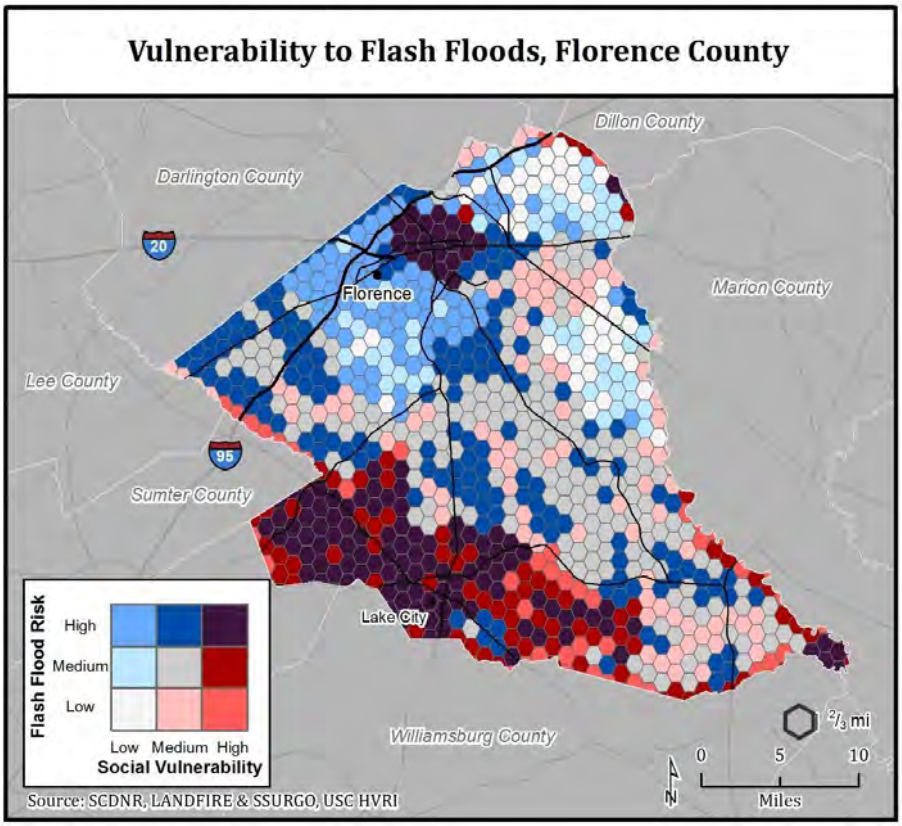
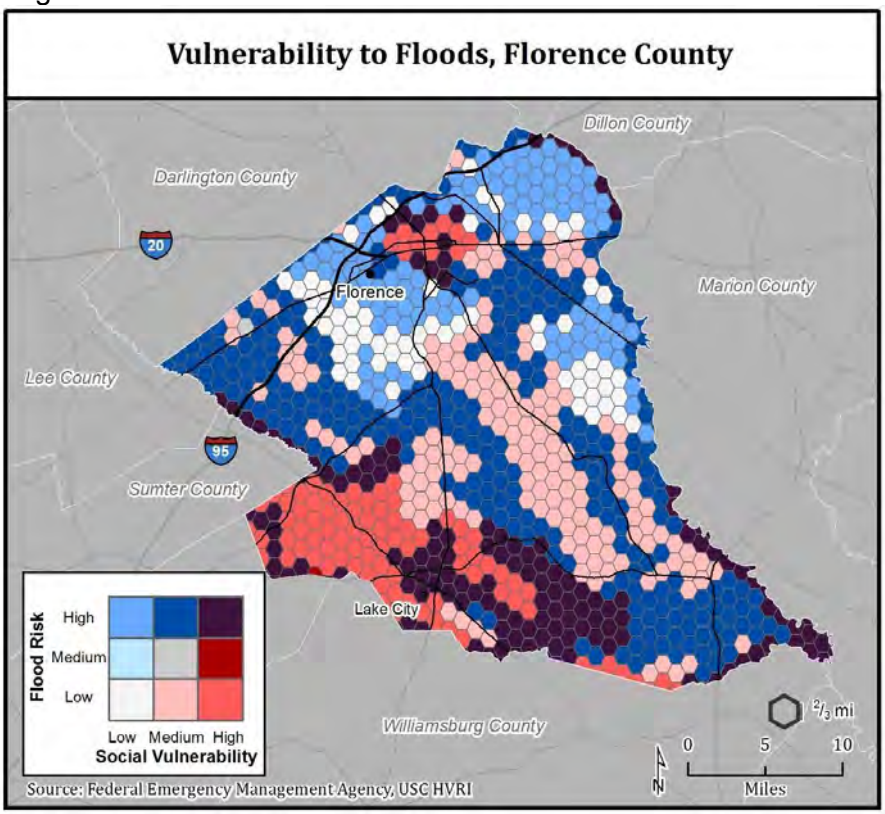

Vulnerability to Flash Floods, Florence County
Dillon County
Darlington County
20
Florence
Marion County
Lee County
95
Sumter County
Lake City
Williamsburg County
Flash Flood Risk
High
Medium
Low
Low Medium High
Social Vulnerability
2/3 mi
0 5 10
Miles
N
Source: SCDNR, LANDFIRE & SSURGO, USC HVRI

Figure 4 - 9


Vulnerability to Floods, Florence County
Dillon County
Darlington County
20
Florence
Marion County
Lee County
95
Sumter County
Lake City
Williamsburg County
Flood Risk
High
Medium
Low
Low Medium High
Social Vulnerability
2/3 mi
0 5 10
Miles
N
Source: Federal Emergency Management Agency, USC HVRI

Vulnerability

The following section provides information on hazard vulnerability across South Carolina. Specifically, this section provides tables and maps to summarize historical and recent flood events and their associated losses (property damage, crop damage, fatalities, and injuries). The totals for these losses were calculated from the NCDC Storm Events database and SHELDUS.

Details on historical and recent impacts Florence County are as follows:

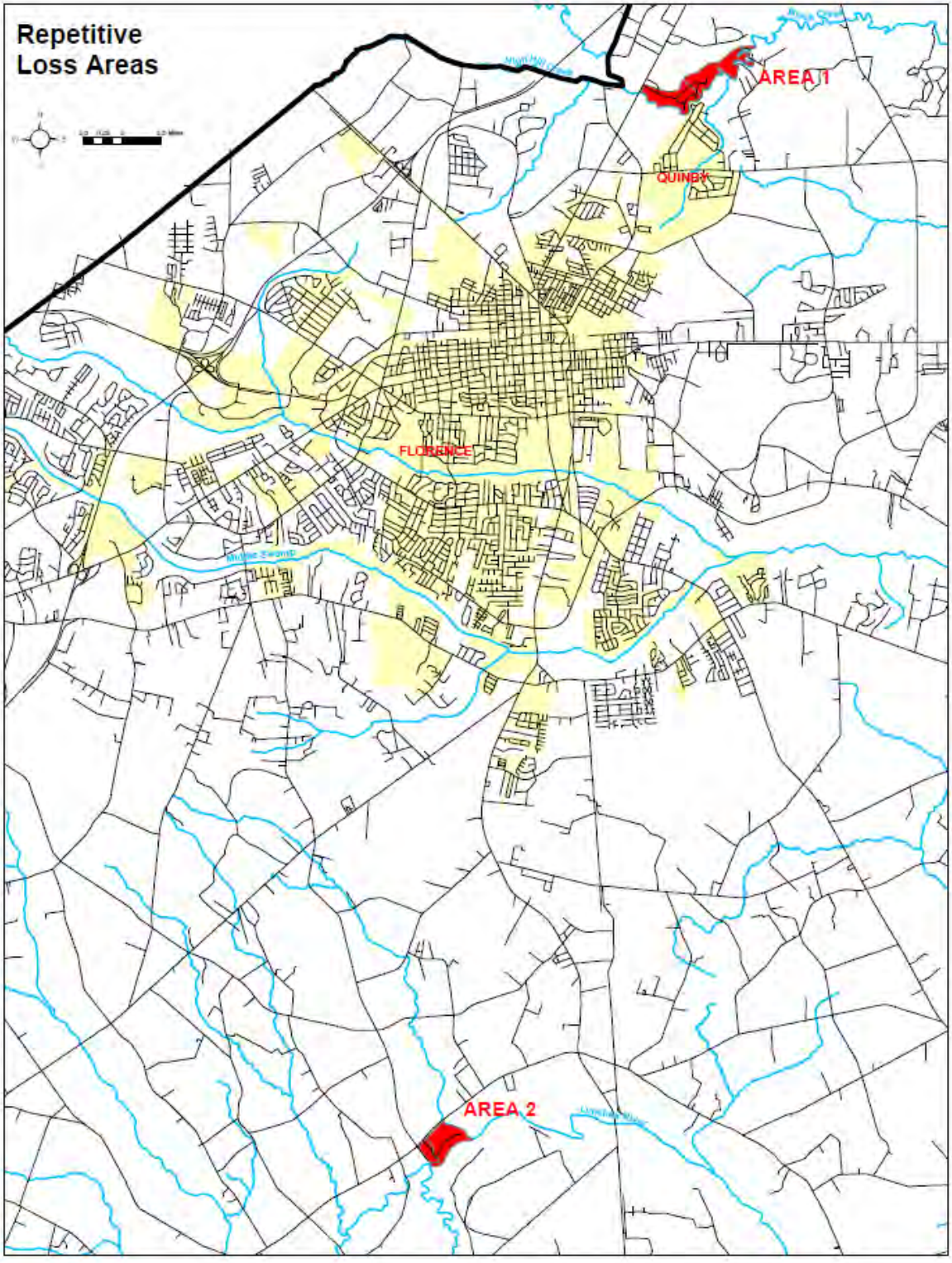
Historical Impacts between the years of 1960 to 2015 are $276,775 for annualized losses with no deaths or injuries recorded. Recent impacts between 2016 to 2018 are $2,551,218 annualized losses with 2 deaths and no injuries. In addition, flood maps were created for 100 and 500-year (Figure F-6) flood events. Where available, the new DFIRM maps depicting the 1% chance flood were used. A map of flash flood risk as well as maps of flood and flash flood vulnerability are also included (4 - 8, 4 - 9).

Repetitive Loss Properties

FEMA defines a repetitive loss property as any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling 10-year period, since 1978. A repetitive loss property may or may not be currently insured by the NFIP.

Community	Building Payments	Content Payments	Total Payments	Average Payment	Losses	Properties
Florence County	$1,891,568.66	$312,366.61	$2,203,935.27	$11,360.49	96	40
City of Florence	$116,571.49	$834.78	$117,406.27	$5,870.31	10	5
City of Lake City	$7,840.53	$0	$7,840.53	$3,920.27	2	1

The following map shows the location of the repetitive loss properties for the unincorporated areas of Florence County. All of the repetitive loss properties are in the AE zone and are residential. There are currently no repetitive loss properties within the limits of the Town of Pamplico, The Town of Quinby, The Town of Scranton, the Town of Timmonsville, the Town of Olanta, or the Town of Johnsonville. The Town of Coward does not participate in the National Flood Program because it has a lack of flooding history. Each jurisdiction will continue to comply with NFIP thought adoption and enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs), floodplain identification and mapping, including any local requests for map updates.


Repetitive
Loss Areas
AREA 1
QUINBY
FLORENCE
AREA 2

Hailstorms:

Hail is frozen droplets of water that are carried between colder and warmer elevations within a thunderstorm, with another layer of ice being added with each re-freeze until the frozen ball is so large it falls to earth. It is a costly result of severe thunderstorm activity in the nation. Hail can occur anywhere the conditions are favorable. All of Florence County and its municipalities are equally susceptible to hail.

Table 4 - 7

TORRO Hailstorm Intensity Scale			
	Intensity Category	**Typical Hail Diameter (mm)***	**Typical Damage Impacts**
H0	Hard Hail	5	No damage
H1	Potentially Damaging	5-**15**	Slight general damage to plants, crops
H2	Significant	10-**20**	Significant damage to fruit, crops, vegetation
H3	Severe	20-**30**	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-**40**	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-**50**	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-**60**	Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-**75**	Severe roof damage, risk of serious injuries
H8	Destructive	60-**90**	(Severest recorded in the British Isles) Severe damage to aircraft bodywork
H9	Super Hailstorms	75-**100**	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Historical and Notable Events:

May 25, 2000: A severe thunderstorm caused straight-line winds and dime size hail in Darlington, as well as 2-inch hailstones to the south of the city. Property damage was estimated at $150,000. The County Agricultural Service reported several areas of crop damage near Highway 401, estimated at $10,000. In Florence, a severe thunderstorm caused large hail and wind gusts estimated at over 80 mph. The largest hail size was estimated at over four inches in diameter, causing extensive damage to roof and siding. Approximately 2,000 homes were damaged, with repair costs exceeding $6,000,000.00. The storm knocked out power to over 20,000 residences. Two injuries were reported due to broken glass impacted by hail.

April 9, 2011: Supercell thunderstorms across the upper Midlands and Pee Dee regions produced hail up to the size of baseballs. Property damage estimates for this significant event is $45 million for across the state

From 1950 to 2018, there were more than 165 recorded events. Due to the large number of events, the maps below reflect the events within 1986 – 2015 and the past four years.

Vulnerability

The following section provides information on hazard vulnerability across Florence County. Specifically, this section provides information and maps to summarize historical and recent hail events and their associated losses (property damage, crop damage, fatalities, and injuries). The totals for these losses were calculated from the NCDC Storm Events database and SHELDUS.

The future probability for occurrence is 417 with a frequency interval of .24. The historical impact between 1960 to 2015 shows an annualized loss of $ 272,480 with no deaths and 4 injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $5,412 with no deaths or injuries reported.

Figure 4 - 10

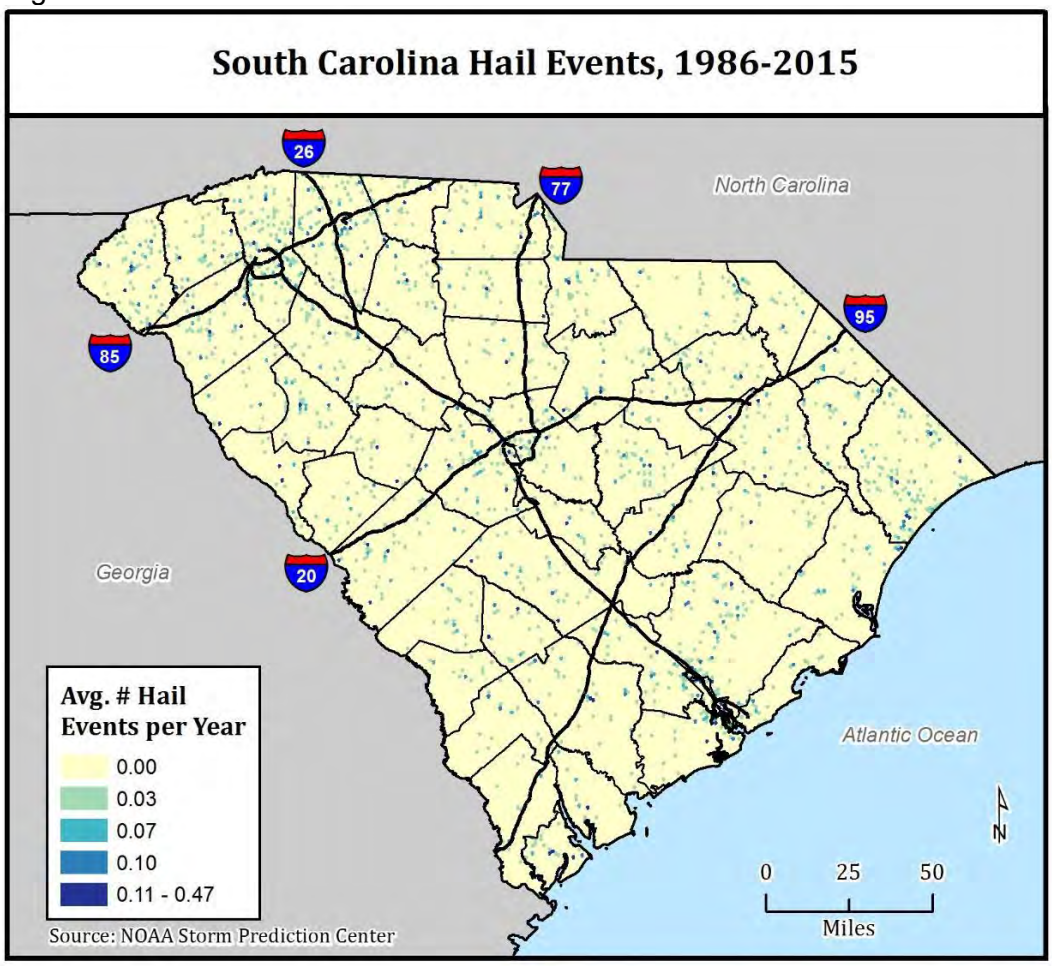


Figure 4 - 11

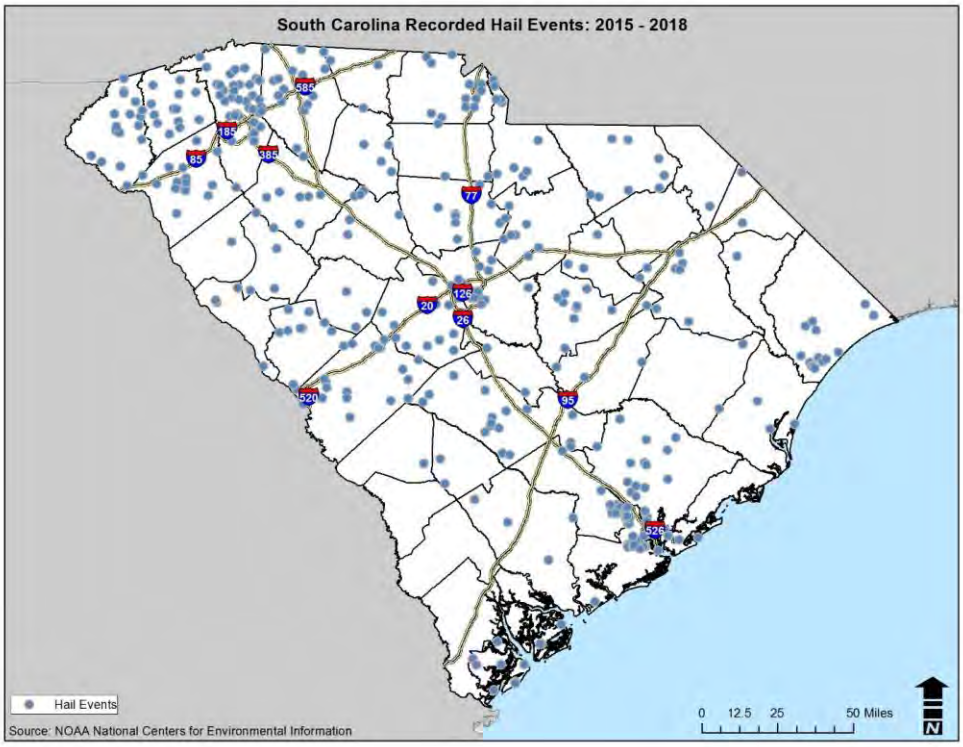
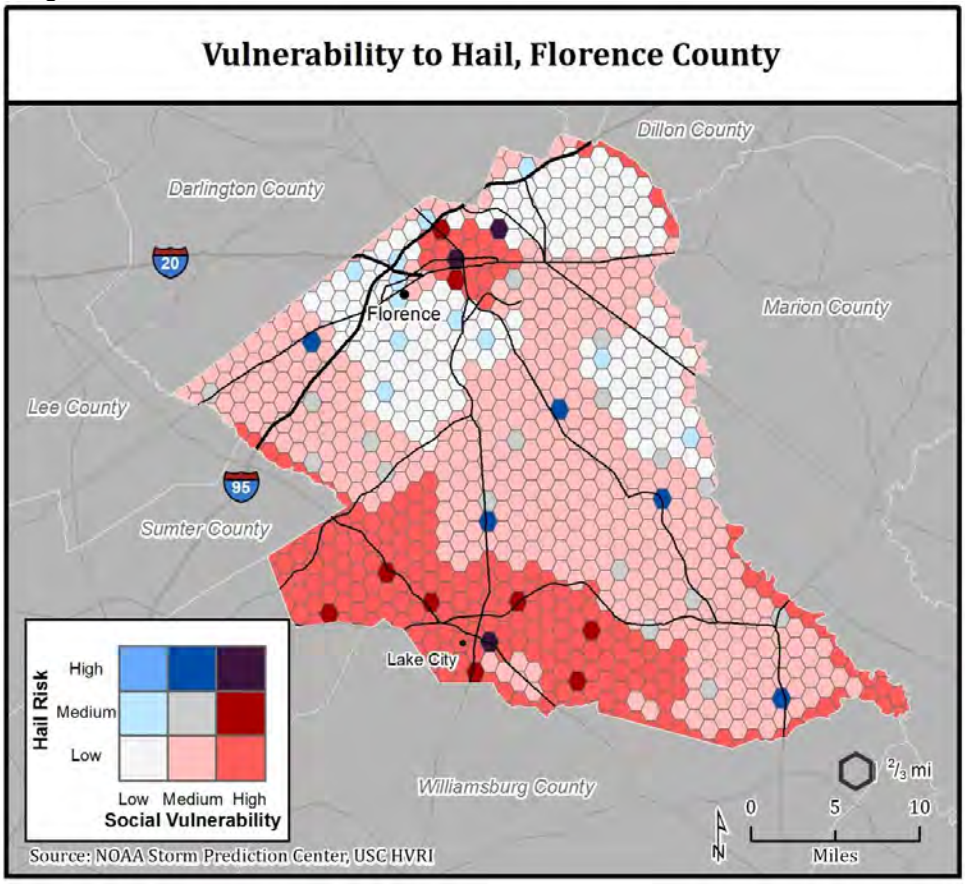


Figure 4 - 12



Hurricanes:

According to NOAA, prior to hurricanes being named in 1952, there were approximately 86 unnamed tropical storm or hurricane events of at least 25 mph winds recorded in the region between 1851 and 1951. For these unnamed storms, highest recorded winds were 100 mph, and for only four storms. In contrast, from 1952 through 2004, 50 named storms have struck all or a part of the region. From 2005 until present we have been impacted from 8 hurricanes within this area. Hurricanes are large events and can affect all of Florence County. The most severe storms being the following:

Hurricane Hazel October 1954: Hazel made landfall as a Category 3 hurricane near Little River, bringing storm surge up to 16.9 feet. One fatality and approximately $27 million in damages were reported. Hurricane Hazel is considered one of the most severe storms to hit South Carolina to date.

Hurricane Hugo September 21, 1989: Hugo, a Category 4 hurricane made landfall at Isle of Palms with sustained winds of 140 mph and wind gusts exceeding 160 mph. Hugo is the costliest storm in South Carolina history, causing over $7 billion in damages to property and crops in the United States and the first major hurricane to strike the state since Gracie in 1959. Total damages, including those that occurred in Puerto Rico and the Caribbean, exceeded 10 billion dollars. Hurricane Hugo resulted in 35 storm-related fatalities, 20 of which occurred in South Carolina. Seven of the South Carolina fatalities occurred in mobile home parks northwest of Charleston. The strongest winds passed over the Francis Marion National Forest between Bulls Bay and the Santee River. The Forest Service estimated that timber losses exceeded $100 million. While the most severe winds occurred to the northeast of Charleston, the city was hard hit. The Charleston City Hall and a fire station lost their roofs and over 4,000 historic properties were damaged. Coastal storm surge reached 20 feet in some areas, making it the highest ever recorded in the state. Folly Beach was among the most significantly impacted coastal communities. Approximately 80 percent of the homes were destroyed. Sullivan's Island and the Isle of Palms were also severely damaged. Numerous homes were knocked off their foundations and boats in the local marina were tossed into a 50 foot tall pile of debris. Severe inland wind damage occurred as winds gusting to 109 mph at Sumter were reported. The hurricane exited the state just north of Rock Hill, causing significant damage in Charlotte, North Carolina. South Carolina received a Presidential Disaster Declaration for this event.

Hurricane Floyd (September 15, 1999): Hurricane Floyd weakened to a Category 3 hurricane as it approached the southern South Carolina coast on the morning of September 15th. The storm skirted the coast, its center moving northeast about 60 miles offshore late in the afternoon and early evening as it took a north and northeast course toward North Carolina. Sustained winds of tropical storm force were reported from Savannah, Georgia to Charleston, with wind gusting to hurricane force strength in the Charleston area. The highest recorded sustained wind speed was 58 mph in downtown Charleston; with gusts reaching 85 mph. Rainfall was heavy along coastal counties as 12 inches of rain fell in Georgetown County. A reported 18 inches fell in eastern Horry County, causing major flooding along the Waccamaw River in and around the City of Conway for a month. Waves were reported to be 15 feet at Cherry Grove Pier, where damage was the greatest. Minor to moderate beach erosion occurred along the South Carolina coast. Many businesses and homes suffered major damage, with thousands of homes experiencing at least some minor damage in Charleston County, causing approximately $10.5 million in damage. In Horry County, approximately 400 homes and numerous roads were

inundated for over one month following the storm. Beaufort County reported $750,000 damage, and Berkeley and Dorchester counties reporting $500,000 each. Over 1,000 trees were blown down, knocking out power to over 200,000 customers across the southern coast. In Myrtle Beach, tree and sign damage was reported to reach approximately $250,000. In Williamsburg County, total damage estimates due to the high winds and rain reached approximately $650,000. In Florence County, high winds downed trees, caused power outages and resulted in $150,000 in property damages. Total estimated property damages for the impacted counties totaled approximately $17 million. While Hurricane Floyd did not make landfall in South Carolina, it resulted in the largest peacetime evacuation in the state's history, surpassing Hurricane Fran. It is estimated that between 500,000 and one million people evacuated the coast. South Carolina received a Presidential Disaster Declaration for this event.

Hurricane Gaston (August 29, 2004): Gaston reached Category 1 sustained wind speeds before making landfall as a tropical storm near Awendaw, South Carolina. The next day, Gaston weakened to a tropical depression in the northeastern portion of the state. Charleston and Georgetown Counties had voluntary evacuation issued for barrier islands, low-lying areas, beachfront areas, mobile homes, and other places that are prone to flooding. Localized flooding occurred from storm surge of roughly four feet. Peak wind gusts were recorded at 82 mph in Charleston and Isle of Palms. There were strong winds from this slow storm that knocked down trees, power lines, and caused major structural damage.

Recent Activity 2014 - 2019

TS Ana May 2015: Ana made landfall near Myrtle Beach, SC around 6:00 am on Sunday May 10, 2015. At the time maximum sustained winds had decreased to 45 mph with a central pressure of 1002 millibars or 29.59 inches Hg. The storm then steadily weakened as it dumped over six inches of rain across from North Myrtle Beach, SC to Oak Island and Southport, NC.

Hurricane Matthew October 2016: Matthew's largest impact across the Carolinas was flooding from historic rainfall. Twelve to eighteen inches of rain fell over large portions of interior South and North Carolina. The City of Florence Had $2.5 million in debris removal costs, primarily associated with downed trees. Rainfall rates increased to one to two inches per hour early in the morning of October 8th. The first reports of significant flooding arrived between 7:00 a.m. and 8:00 a.m. with road closures in Florence, S.C. where two people died when their vehicle was swept away by floodwaters. Of 2,358 homes and businesses damaged approximately 75% of them were damaged due to winds and falling trees. In the Florence County and participating jurisdictions there were reports of homes with damage ranging from shingle damage to roofs completely blown off of the structures. There were also many reports of trees on homes and businesses causing substantial damage.

Hurricane Florence September 2018: Wind damage occurred to some trees and signs from wind gusts over 60 mph, but impacts were considered generally minor. At the storm's peak around 12,000 customers were without power across Florence County. Flooding along the Lynches River prompted the evacuation of 2500 residents from the southern portion of the county on September 21st. Flooding on the Great Pee Dee River shut down a portion of the City of Florence's municipal water system on September 24. Two homes were destroyed by Florence's floodwaters, with 52 others across Florence County and participating jurisdictions were damaged for a total of $279,124. Around 250 homes in the county suffered damage to roofs from the wind, totaling approximately $1 million.

Of course, not all storms affected Florence County but, using the multiple tracks for each hurricane, these events have been compiled into the attached graphic. This is a composite of all events, including tropical storms and tropical depressions as well as hurricanes of all categories. Hurricanes are large events and can affect all of Florence County. Also attached is the graphic "Historical Chance Per Year", showing probabilities for this region of the state. The worst event was Hurricane Hugo on September 22, 1989. It came ashore as a category 4 hurricane with winds of 135mph. As it passed over Florence County it was a weak category 4. A category 4 storm is the highest probable intensity expected to impact Florence County.

Figure 4 - 13

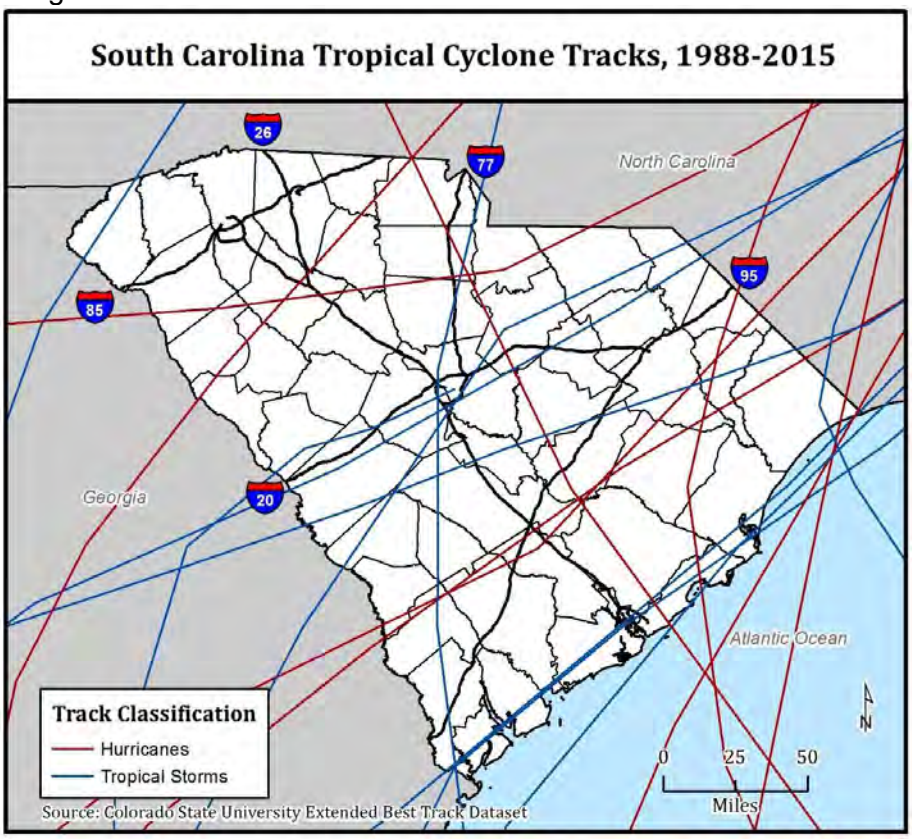


Figure 4 - 14

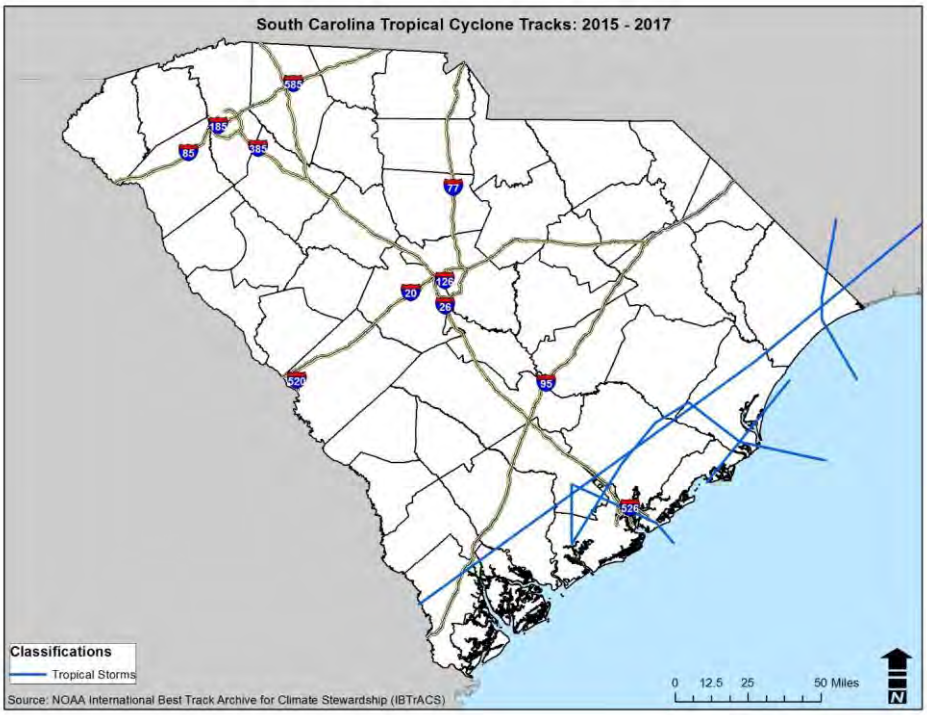


Table 4 - 8

Jurisdiction/Community	Likelihood of hurricane activity
Florence County (Unincorporated Area)	Moderate
Coward Town	Moderate
Florence City	Moderate
Johnsonville City	Moderate
Lake City City	Moderate
Olanta Town	Moderate
Pamplico Town	Moderate
Quinby Town	Moderate
Scranton Town	Moderate
Timmonsville Town	Low-moderate

Table 4 - 9

SAFFIR-SIMPSON SCALE

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 kt 119-153 km/h	**Very dangerous winds will produce some damage:** Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 kt 154-177 km/h	**Extremely dangerous winds will cause extensive damage:** Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111-129 mph 96-112 kt 178-208 km/h	**Devastating damage will occur:** Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 kt 209-251 km/h	**Catastrophic damage will occur:** Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	**Catastrophic damage will occur:** A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Vulnerability

The following section provides information on hazard vulnerability across Florence County. Specifically, this section information and maps to summarize historical and recent hurricane events and their associated losses (annualized losses, fatalities, and injuries). The totals for these losses were calculated from the National Climatic Data Center (NCDC) Storm Events database, and the Spatial Hazard Events and Losses Database for the US (SHELDUS). Hazus is also used to model impact from hurricane winds. Historical hurricane track data came from NOAA's International Best Track Archive for Climate Stewardship (IBTrACS).

Florence County building inventory is reportedly $5,013,948 for residential; $1,636,444 for commercial; $778,206 listed as other for a total of $7,428,598. These values are used in later calculations for building exposure to specific hazard types. Hazus uses this data to estimate loss and damage to buildings. Florence County has a future probability of 43 with a frequency interval of 2.33. The historical impact between 1960 to 2014 shows an annualized loss of $ 3,428,494 with no deaths or injuries. The recent impacts between 2015 and 2018 shows an annualized loss of $1.5 million with 2 deaths or multiple injuries reported.

Figure 4 - 15

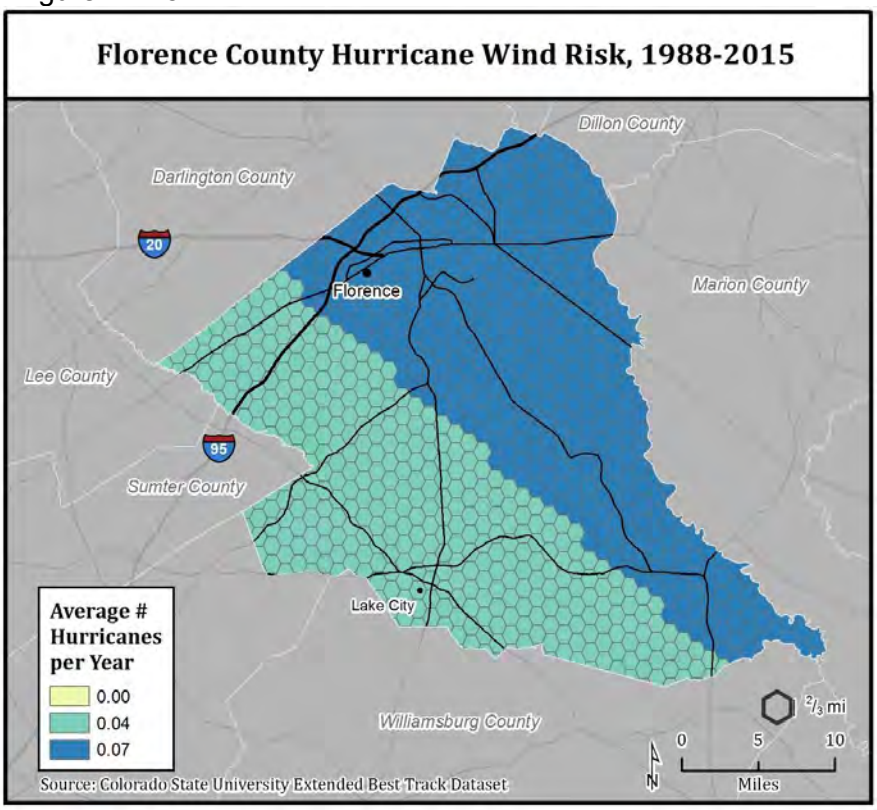
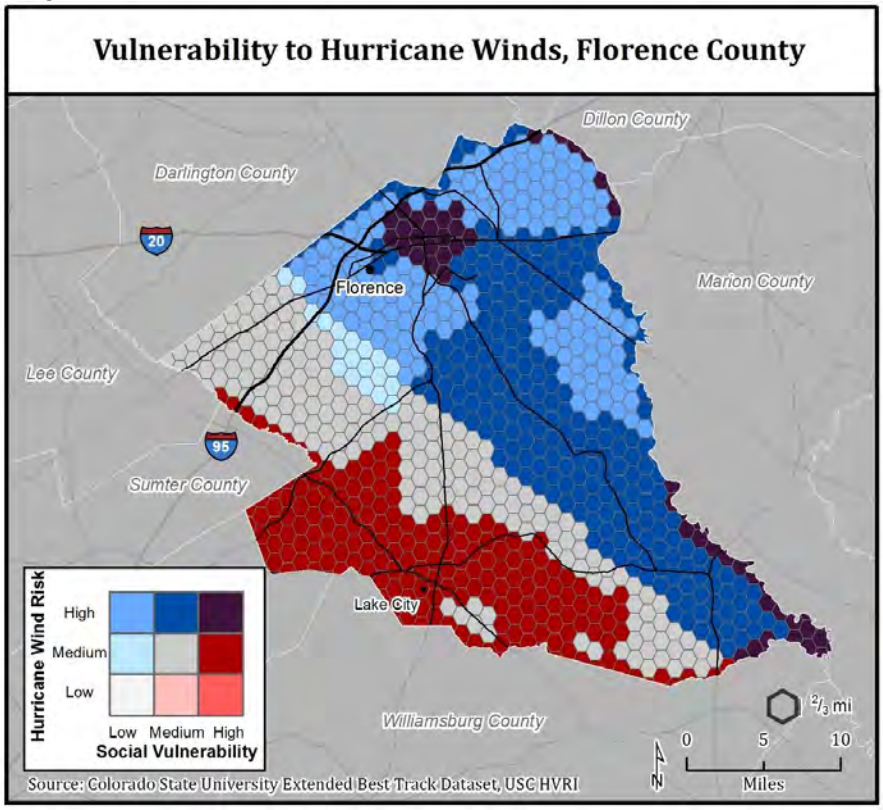


Figure 4 - 16



Tornadoes:

These violently rotating columns of air extend from thunderstorms to the ground and are among the more violent and deadly natural phenomena. Tornadoes can occur anywhere the conditions are favorable. All of Florence County and its municipalities are equally susceptible to tornadoes. Historically Florence County has experienced an EF2 tornado giving Florence County a range of potential from EF0 to EF2. Data was collected from 1950 through 2018, with the below summarizing the events.

January 8, 1953: Two people were injured when an F2 tornado touched down in Florence County near Effingham, SC.

July 28, 1963: An F2 tornado killed 3 people and injured 12 when it touched down in Dillon, SC and moved northeast into Robeson County near Lumberton, NC. The tornado continued for 85 miles before finally lifting. This same system produced an F1 tornado that touched down in Effingham, SC.

September 29, 1963: An F2 tornado touched down in Effingham S.C.

March 26, 1965: An F2 tornado touched down in Lake City, S.C.

March12, 1967: Two F2 tornadoes touched down in Florence County, S.C.

June 8, 1980: An F1 tornado injured two people when it touched down southeast of Lake City, SC.

May 27, 1981: Six people were injured when an F2 tornado touched down northwest of Pamplico.

September 24, 1994: An F1 tornado touched down and caused 11 injuries.

November 7, 1995: A severe weather outbreak across the Southeast produced numerous tornadoes in the eastern Carolinas. The strongest tornado of the day was an F4 that injured 1 person in Marion County northwest of Galivants Ferry, SC. An F2 tornado injured 122 people in Columbus County near Brunswick, NC. F2 tornadoes also touched down in Conway, SC and Florence, SC (4 injuries). An F1 tornado injured 11 people in Kingstree, SC. Another F1 tornado injured 1 person in Georgetown County between Andrews and Georgetown, SC. Still another F1 tornado was confirmed in rural Darlington County. F0 tornadoes touched down near Dillon, SC and near Lumberton, NC.

March 22, 1997: An F1 tornado injured two people west of Lake City, SC. Another F1 tornado injured one person when it touched down in Conway, SC.

September 7, 2004: The remnants of Hurricane Frances resulted in a tornado outbreak across the Carolinas. 6 F1 tornadoes and 6 F0 tornadoes were confirmed within our forecast area. Tornado (F0)At 5:45 pm, a tornado began in Florence County 2.6 miles N of Quinby. The tornado continued 0.4 miles across Florence County and reached 3.0 miles N of Quinby before exiting the county. The tornado then entered Darlington County 7.9 miles ESE of Darlington, and continued 0.6 miles before ending 7.5 miles ESE of Darlington at 5:47 pm. The total path length was 1.0 mile and the total path width was 30 yards.

May 14, 2006: Tornado (F1) This Mother's Day severe weather event brought tornadoes, hail, and damaging winds to the Carolinas. Our office confirmed three tornadoes touched down in the Pee Dee region. An F2 tornado in the Glendale community near Florence, SC damaged about 60 homes and uprooted/snapped many trees. An F1 tornado in Florence, SC downed trees and damaged an

industrial area, while another F1 tornado southwest of Darlington, SC injured one person. Elsewhere, baseball size hail was reported near Mullins, SC, and golf ball size hail fell in Quinby, SC.

March 15, 2008: A severe weather outbreak across the Carolinas resulted in seven confirmed tornadoes within our forecast area. Three people were injured in an EF1 tornado near Timmonsville, SC. EF1 tornadoes near Greeleyville, SC and Trio, SC destroyed five homes and damaged over 40 more homes. Another EF1 tornado damaged numerous homes and businesses in Hampstead, NC. EF0 tornadoes were confirmed near Latta, SC, Aynor, SC, and Fair Bluff, NC.

July 2, 2013: An EF-1 tornado (estimated maximum winds: 105 mph) touched down near Quinby, SC, injuring 8 people. The tornado snapped trees and destroyed 10 mobile homes while damaging 8 others.

Table 4 - 10

Enhanced Fujita Scale		
Category	Wind Speed	Potential Damage
EF0	105–137 km/h 65–85 mph	Light damage. Peels surface off roofs; some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; mobile homes pushed off foundations or overturned; sign boards damaged.
EF1	138–179 km/h 86–110 mph	Moderate damage. Roofs torn off frame houses; windows and glass doors broken; moving autos blown off roads; mobile homes demolished; boxcars overturned.
EF2	180–217 km/h 111–135 mph	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	218–266 km/h 136–165 mph	Severe damage. Some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	267–324 km/h 166–200 mph	Devastating damage. Well-constructed houses and whole frame houses completely leveled; structures with weak foundations blown away some distance; trees debarked; cars thrown and small missiles generated.
EF5	>324 km/h >200 mph	Incredible damage. Strong frame houses leveled off foundations and swept away; with strongest winds, brick houses completely wiped off foundations; automobile-sized missiles fly through the air in excess of 100 m (109 yd); cars thrown and large missiles generated; incredible phenomena will occur.

Table 4 - 11

Jurisdiction/Community	Probability of tornado activity
Florence County (Unincorporated Area)	Moderate-high
Coward Town	High
Florence City	Moderate-high
Johnsonville City	Low
Lake City City	Moderate-high
Olanta Town	Low-moderate
Pamplico Town	Low
Quinby Town	High
Scranton Town	High
Timmonsville Town	Moderate

Vulnerability

The following section provides information on hazard vulnerability across Florence County. Specifically, this section provides information and maps to summarize historical and recent tornado events and their associated losses (property damage, crop damage, fatalities, and injuries). The totals for these losses were calculated using NCDC and SHELDUS data.

Florence County has a future probability of 53 with a frequency interval of 1.88. The historical impact between 1960 to 2015 shows an annualized loss of $ 67,821 with no deaths and 35 injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $22,383 with no deaths and 9 injuries reported.

Figure 4 – 17

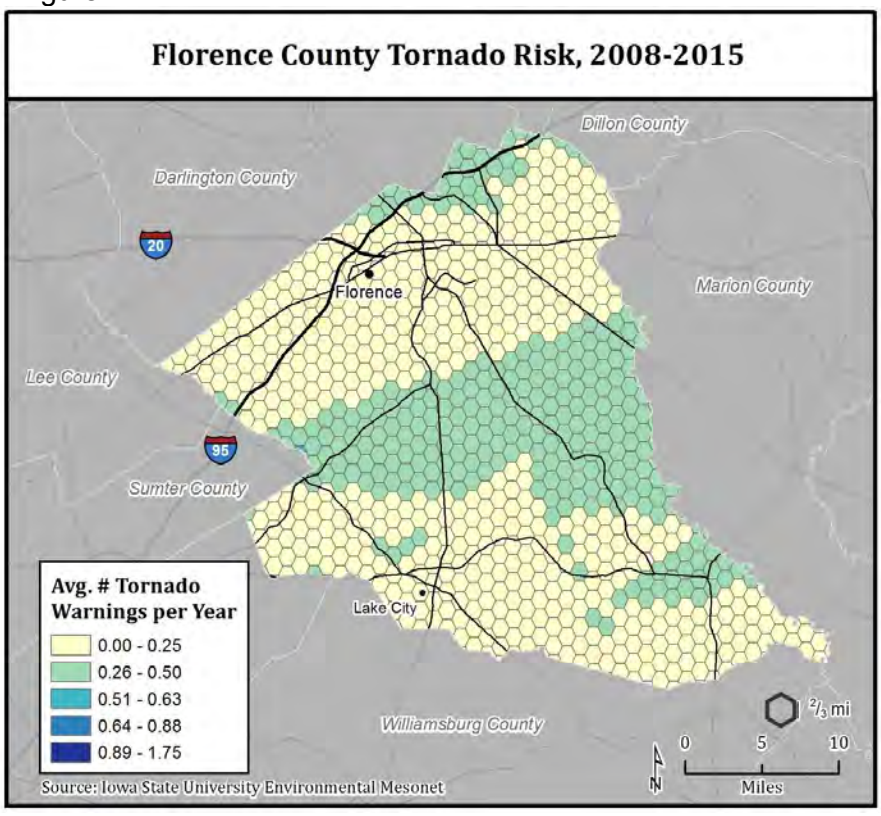


Figure 4 - 18

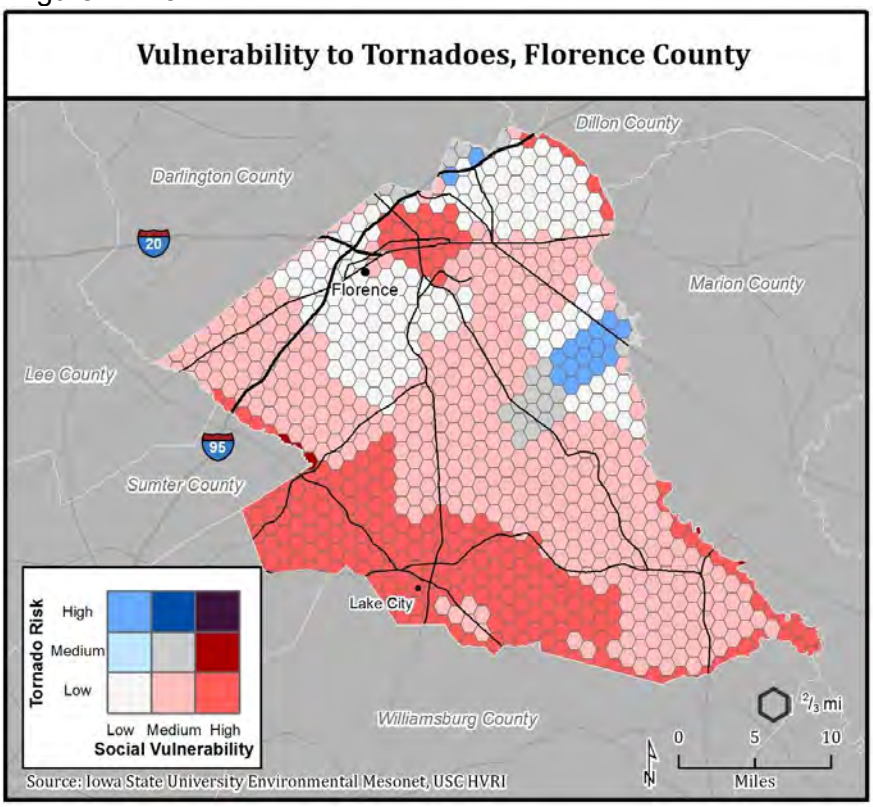
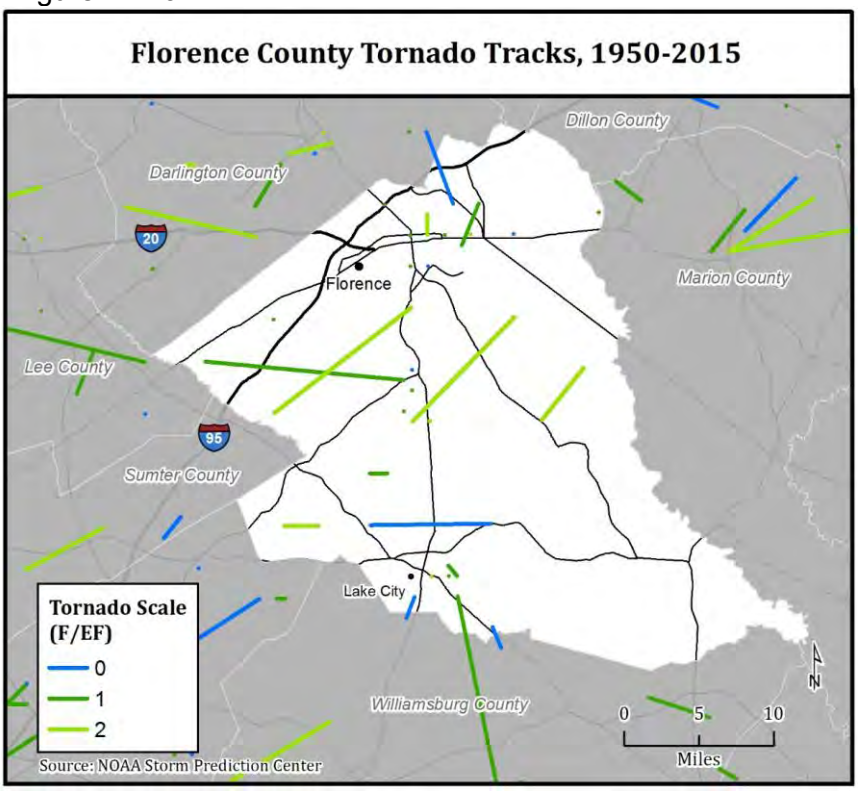


Figure 4 - 19



Wildfires:

The South Carolina Forestry Commission is responsible for protecting 13.6 million acres from wildland fire; this includes 12.2 million acres of commercial forestland.

The Forestry Commission has a statewide wildland fire prevention, detection and control network in place. Personnel are assigned throughout the state in a series of unit, regional, and headquarters offices. The largest single group of employees -wildland firefighters -report directly from their residences in responding to wildland fires. Forestry Commission dispatch is by closest available resource, regardless of political or administrative boundaries.

There are approximately 439 county, municipal, and volunteer fire departments operating 1,122 fires stations in South Carolina. Most of these fire departments respond to wildland fires and control a large number of the wildland fires before they become destructive. The fire departments and the Forestry Commission work together to control wildland fires. Most of the fire departments are not equipped to control wildland fires that have burned beyond areas that can be reached from roads.

Forestry Commission firefighters respond to more than 3,000 wildland fires burning about 20,000 acres per year; 98% of the wildland fires are caused by human activities. Fire departments respond to more than 20,000 grass, brush, woods, or rubbish fires per year.

With over 3,000 wildfires each year in South Carolina, this is a common hazard. Wildfires can result from natural causes, but most result from man-made action, most commonly arson and debris-burning. Other causes are less than 5 percent of occurrences. Florence County can expect between 57 and 537 fires a year, burning up to 4,864 acres. A wildfire is any outdoor fire (i.e. grassland, forest, brush land) that is not under control, supervised, or prescribed and can occur in the majority of Florence County.

Table 4 - 12

Jurisdiction/Community	Probability of wildfire activity
Florence County (Unincorporated Area)	Moderate-high
Coward Town	High
Florence City	Moderate
Johnsonville City	Low
Lake City City	Moderate-high
Olanta Town	Low-moderate
Pamplico Town	Low
Quinby Town	Low-moderate
Scranton Town	High
Timmonsville Town	Moderate

The following table provides an indication of the mean number of wildfires per year, the mean acres destroyed and overall probability:

Table 4 - 13

Year	Fires	Acres Burned
1996	120	687
1997	85	460
1998	57	184
1999	375	2423
2000	248	895
2001	277	1186
2002	437	4864
2003	58	121
2004	173	870
2005	100	496
2006	140	618
2007	120	370
2008	229	723
2009	107	647
2010	74	225
2011	158	483
2012	153	802
2013	60	250
2014	60	213
2015	69	274
2016	27	74
2017	75	549
2018	73	463
Total	3275	17877

Vulnerability

The following section provides information on hazard vulnerability across Florence County. Specifically, this section provides tables and maps to summarize historical and recent wildfire events and their associated losses (property damage, crop damage, fatalities, and injuries). The totals for these losses were calculated from the National Climatic Data Center (NCDC) Storm Events database, and the Spatial Hazard Events and Losses Database for the US (SHELDUS). The large quantity of points is best represented as a raster point density map for display in Figure 4 – 20b.

Historically, in April of 2002 Florence County experienced a 513 acre wildfire in the Lake City area. The damage was contained to woodland and farm fields, which had no crops planted at the time. Figure 4-21 shows the area affected.

Florence County has a future probability of 16,433 with a frequency interval of 0.01. The historical impact between 1960 to 2015 shows an annualized loss of $ 6,555 with no deaths or injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $0 with no deaths or injuries reported. The data used for the analysis here come from a variety of sources.

Historical loss and damage information comes from SHELDUS, while the number of events and acreage burned comes from the South Carolina Forestry Commission. The probability of acreage burned is analysis performed by the Hazards and Vulnerability Research Institute.

Figure 4 – 20a

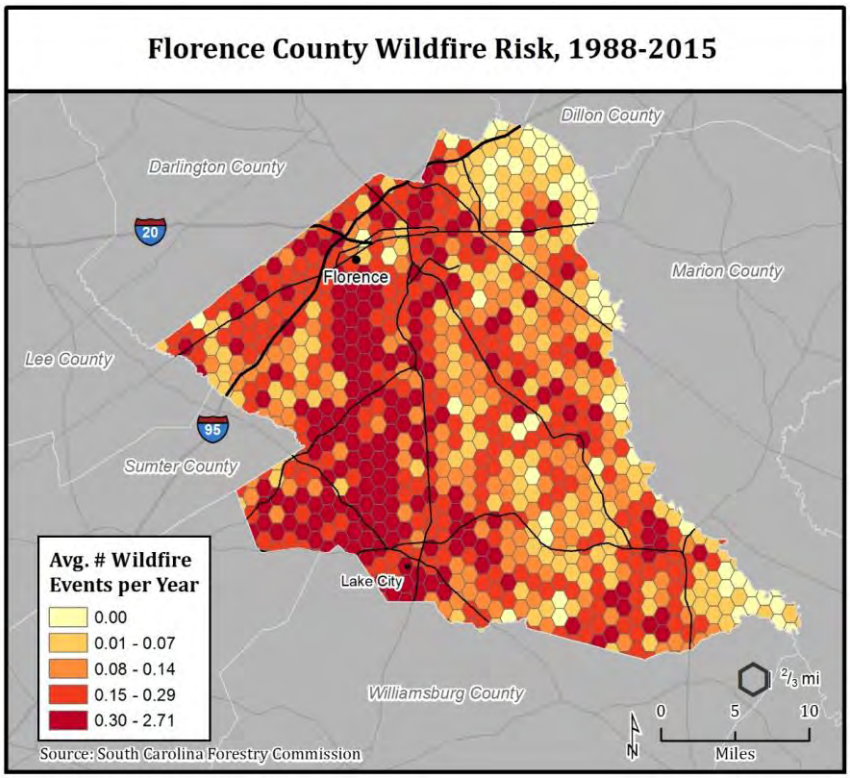


Figure 4 – 20b

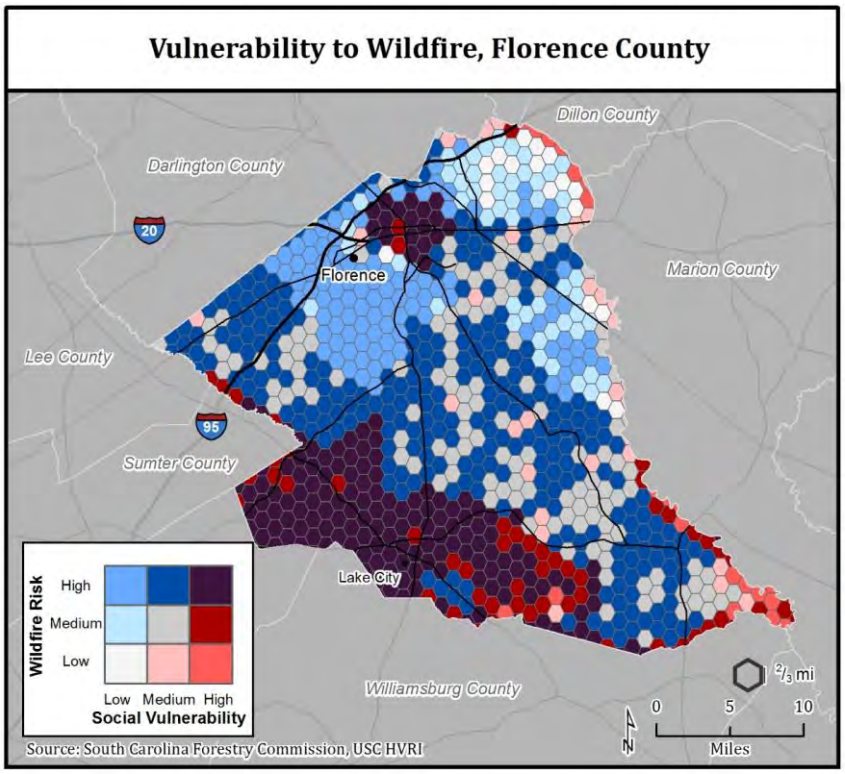
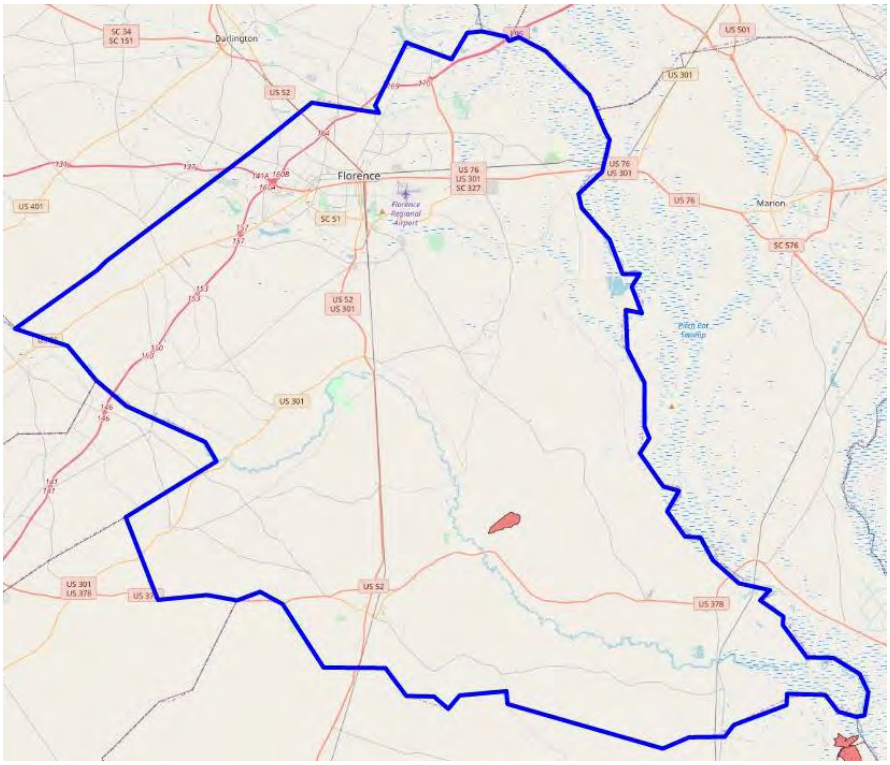


Figure 4-21



Thunderstorms and Lightning:

Strong winds are a common ingredient to most thunderstorms, tornados, hurricanes and other severe storm activity. The region is in FEMA Wind Zone Category III, which indicates winds up to 200 mph could be felt.

Lightning is an electrical discharge resulting from the buildup of positive and negative charges within a thunderstorm, being manifest by a "bolt" between clouds or the clouds and the ground. The rapid heating and cooling of air near a bolt of lightning often creates thunder. Thunderstorms and lightning events can occur anywhere the conditions are favorable. All of Florence County and its municipalities are susceptible to thunderstorms and lightning events. Thunderstorms and lightning are the most familiar and dangerous of all natural hazards to most people in the Pee Dee region.

Historical data indicate the following thunderstorms and lightning events and damage from 1950 to 2018. Historically there have been over 400 instances and probabilities are illustrated in the graphics:

Historical and Notable Events

9/5/61 High winds and excessive lightning caused damage in Florence, S.C.

3/17/65 Damaging winds and hail caused significant damages in Florence County in excess of $50,000.00

6/15/71 Severe thunderstorms and hail caused damage across Florence County in excess of $20,000.00

1/25/78 Damaging winds and heavy rains caused damage in Florence, S.C.

4/27/80 Severe thunderstorm in Timmonsville, S.C. which caused wind and hail damage of $50,000.00.

6/10/82 Severe thunderstorms, lightning and hail caused approximately $120,000.00 in damages in the Florence and Timmonsville areas.

7/14/84 Lightning reportedly caused in excess of $40,000 in damage in Lake City, S.C.

6/2/85 Severe thunderstorms caused $71,000.00 in damage.

5/25/2000 Severe thunderstorms producing large hail and damaging winds across the eastern Carolinas led our office to issue over 20 severe thunderstorm warnings and 3 tornado warnings. The strongest storm impacted Florence, SC, where there were several reports of golf ball to softball size hail! In addition, trees were downed, homes were damaged, and a roof was blown off a building.

6/12/06 Reports of several lightning strikes causing damage near $100,000.00

7/12/2010 A line of severe thunderstorms ahead of a cold front produced widespread damaging winds across our forecast area. Trees were downed across highways and on top of homes and

cars. One person was injured near Yauhannah, SC when a tree limb fell on a car. The worst damage was in Florence County; numerous wind damage reports were relayed from Scranton, SC and Quinby, SC

5/10/2011 A warm front moving northward across the Carolinas combined with upper level support resulted in severe thunderstorms that produced damaging hail across our forecast area. Softball size hail (4.5 inches in diameter) in Conway, SC damaged vehicles and homes near Highway 501. Softball size hail also broke a car window in Florence County near Hannah, SC. Dozens of cars were damaged by baseball size hail in the Woodcreek community near Conway, SC. Baseball size hail covered the ground near Evergreen, SC. In Columbus County, golf ball size hail covered the ground near Clarkton, NC. Golf ball size hail even made it to Carolina and Kure Beach in New Hanover County. In total, our office received over 40 reports of at least quarter size hail during this severe event.

Vulnerability

The following section provides information on hazard vulnerability across Florence County. For severe thunderstorms Florence County has a future probability of 3,094 with a frequency interval of 0.03. The historical impact between 1960 to 2015 shows an annualized loss of $ 343,365 with no deaths and 6 injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $34,592 with no deaths or injuries reported. For lightning Florence County has a future probability of 1,113,648 with a frequency interval of 0. The historical impact between 1960 to 2015 shows an annualized loss of $ 49,125 with one death and 6 injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $3,871 with no deaths and one injury reported. The data used for the analysis here come from a variety of sources. Historical loss and damage information comes from SHELDUS and The National Climatic Data Center (NCDC) Storm Events database.

Figure 4 - 22

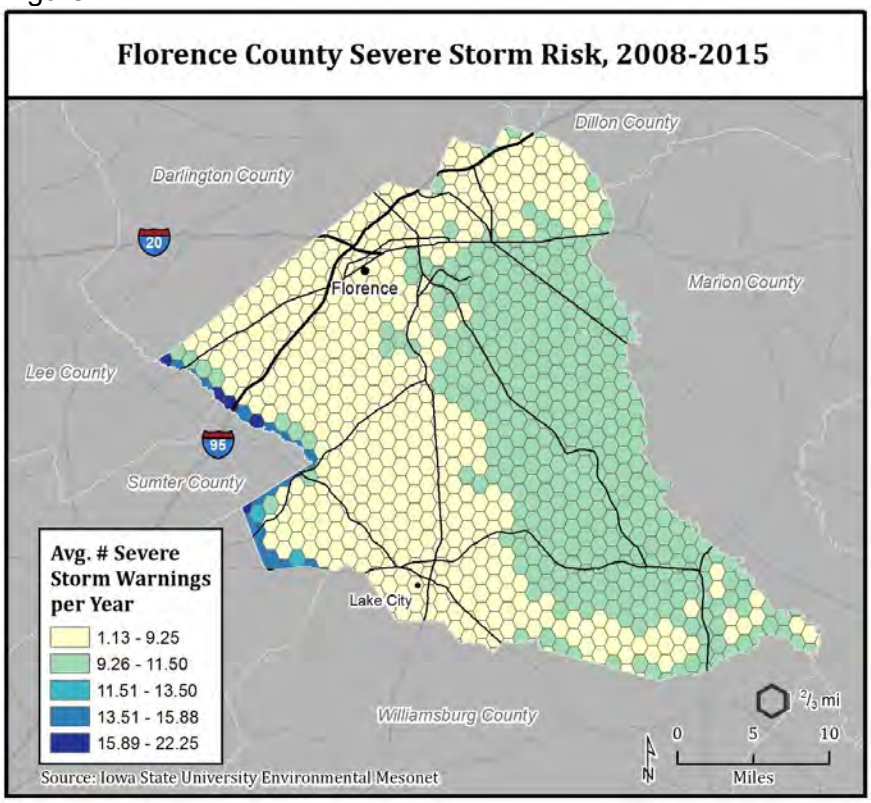


Figure 4 - 23

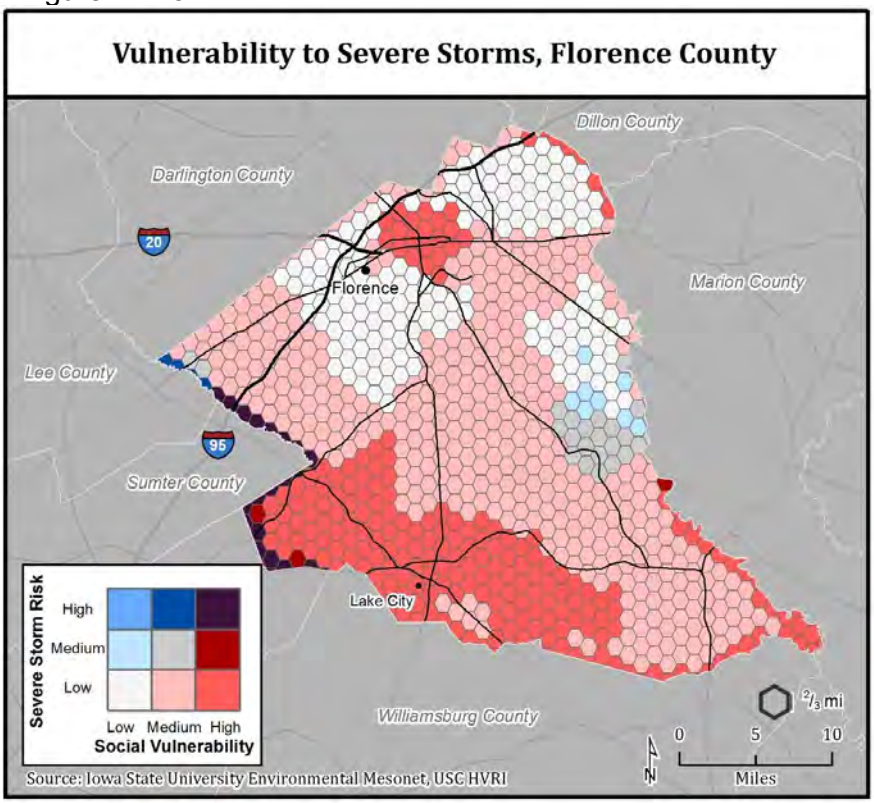


Figure 4 - 24

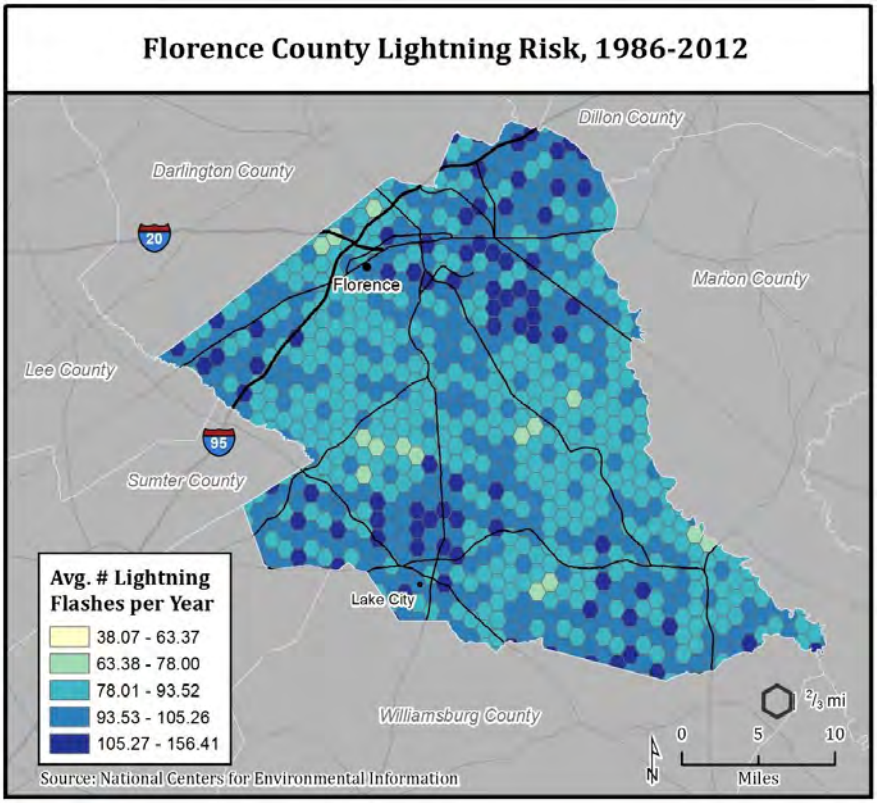
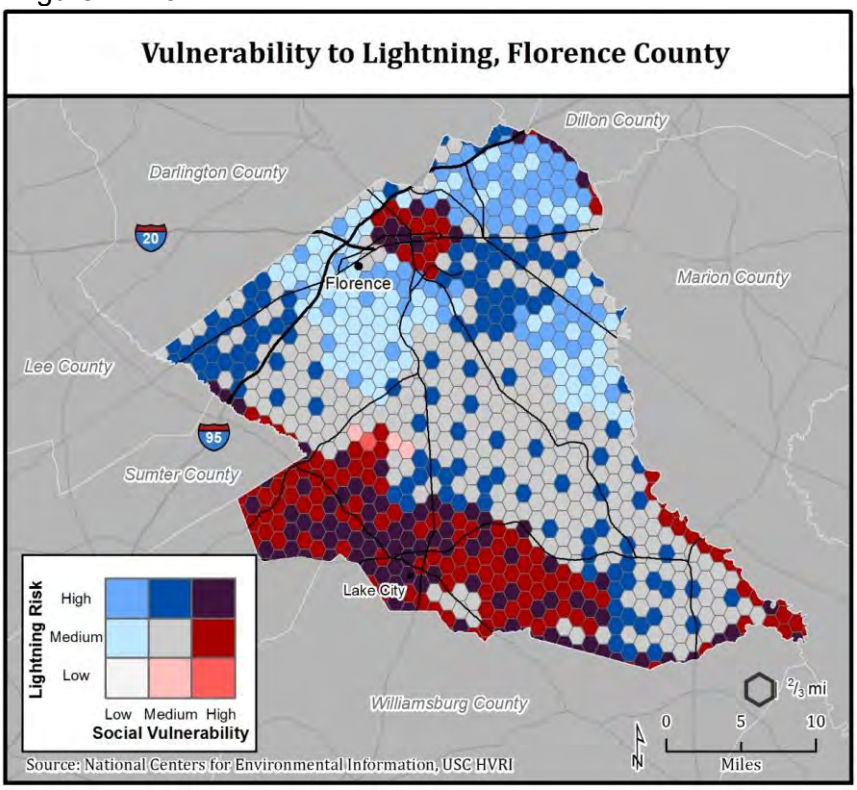


Figure 4 - 25



Severe Winter Storm/Ice Storm:

Winter ice storms consist of snow and sleet and freezing rain events and can be particularly damaging. Impacts of such storms are generally widespread. Winter weather is a widespread event and can equally affect all of Florence County and its municipalities. Florence County has a potential snow fall amount of 0" to 24" and an ice accumulation of 0" to 2". From 1950 through 2018 the following data is available.

Historical and Notable Events

February 1973: A snowstorm of historic proportions impacted the state, leaving behind a record 24 inches of snow in some areas. Approximately 30,000 motorists were stranded on the state's highways—many rescued by helicopter. Eight exposure-related fatalities were reported. Over 200 buildings, in addition to thousands of awnings and carports, collapsed under the weight of the snow. Property and road damages as well as the cost of snow removal and rescue operations were estimated to total approximately $30 million.

March 1993: This winter storm, which possessed an extremely low atmospheric pressure, passed across South Carolina bringing damaging winds, recorded snowfalls of as much as 11.5 feet in portions of the mountains, and snow flurries on the southeast tip of the coast. Preliminary damage assessments at the time were estimated at over $22 million. Two fatalities in South Carolina resulted from this event that is also known as the "Superstorm of the Century". This historic storm impacted 26 states and broke many historical weather records in the affected areas.

January 2000: Low pressure rapidly deepened near the Carolina coast, wrapping abundant moisture back across the Piedmont of the Carolinas. By the time snow ended, accumulations ranged from 12 to 20 inches. Due to the heavy wet snow, numerous power outages occurred and buildings collapsed. Precipitation, which briefly began as a light mixture of sleet and snow, quickly turned to freezing rain, resulting in a glaze 1/4 to 1/2 inch thick on exposed surfaces.

January 2014: A rare and significant winter storm impacted southeast North Carolina and northeast South Carolina on January 28-29, 2014. This storm brought a combination of sleet, snow, and even some freezing rain to our area - resulting in significant accumulations and impacts that were felt for several days after the event. Snow and sleet accumulations of 2 to 4 inches were reported in Florence County.

February 2014: Although substantial amounts of snow and sleet fell across interior portions of eastern North and South Carolina, damage from this storm was primarily attributed to a heavy accumulation of freezing rain that fell across the Pee Dee region of South Carolina into coastal North Carolina. A swath of ice accretion in excess of one inch occurred from northern Horry County through Marion County, southern Florence County, and into western Williamsburg County. Widespread damage occurred to trees and power lines, with electric service not fully restored in some areas for a week. South Carolina forestry officials compared the damage across parts of South Carolina to that of Hurricane Hugo back in September 1989. South Carolina Emergency Management declared a state of emergency during the storm; they and the American Red Cross opened emergency shelters. At one point nearly 350,000 South Carolina residents were without power. The severity of the damage led to 21 counties in South Carolina

being declared a federal "major disaster area" including Dillon, Florence, Georgetown, Horry, Marion, and Williamsburg counties.

Recent Activity

February 17, 2015: Arctic high pressure on February 16th brought a cold and very dry airmass into the Carolinas with reports of .05" of ice in Florence, S.C.

February 24, 2015: Low pressure moved northeast along a front well offshore, spreading moisture over cold dry air that covered the Carolinas. Precipitation began as snow before sunrise on February 24, 2015, but transitioned over to sleet and finally to freezing rain during the late morning hours. Florence County received a trace of snow and .21" of freezing rain.

March 2, 2017: Between a trace to 1" of snow fell across Florence County, S.C.

January 2018: On the morning of January 7th the temperature in Florence fell to 8 degrees. This is tied for the third coldest temperature in Florence's history and was the coldest recorded since January 21, 1985. Temperature records began in Florence in 1948. This was the coldest start to a year ever in Florence's history. The first seven days of 2018 had an average temperature of 24.2 degrees, beating the previous coldest start in 2010 by over eight degrees. High temperatures for eight straight days (December 31, 2017 through January 7, 2018) failed to reach 40 degrees, becoming the longest streak of cold days in Florence's history. Eight straight nights of low temperatures of 20 or colder also broke the record for consecutive very cold nights. Snowfall of 2.5 inches in Florence was the largest storm recorded since 3.0 inches fell January 10-11, 2011.

Vulnerability

The following section provides information on hazard vulnerability across Florence County. For winter weather Florence County has a future probability of 313 with a frequency interval of 0.32. The historical impact between 1960 to 2015 shows an annualized loss of $ 375,461 with 4 deaths and 1 injury. The recent impacts between 2016 and 2018 shows an annualized loss of $0 with no deaths or injuries reported. The data used for the analysis here come from a variety of sources. Historical loss and damage information comes from SHELDUS and The National Climatic Data Center (NCDC) Storm Events database.

Figure 4 - 26

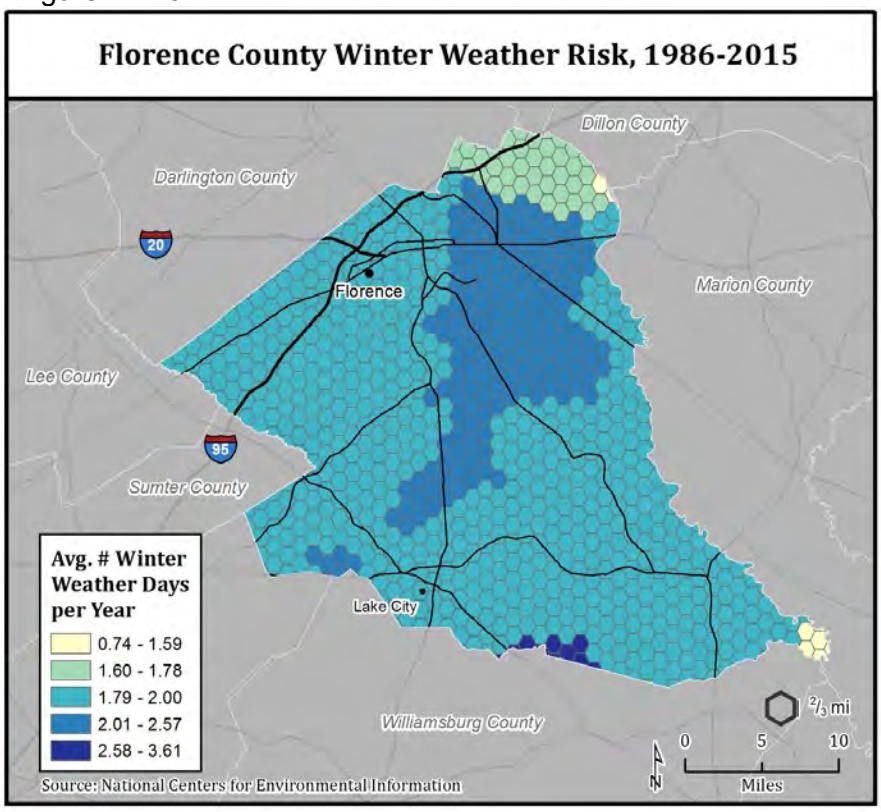
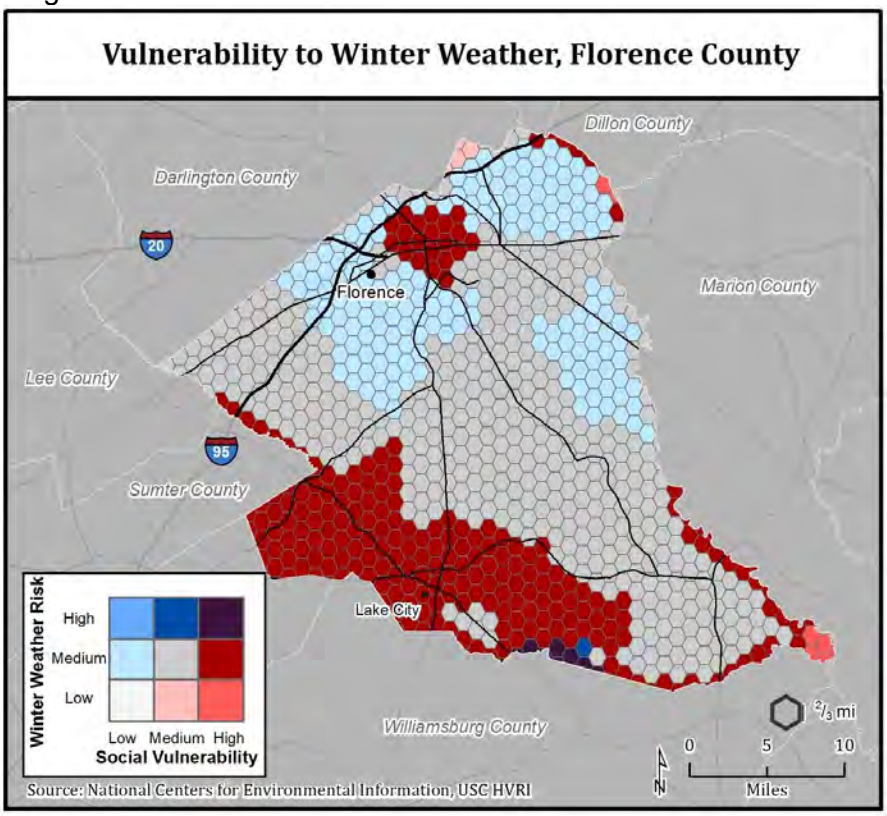
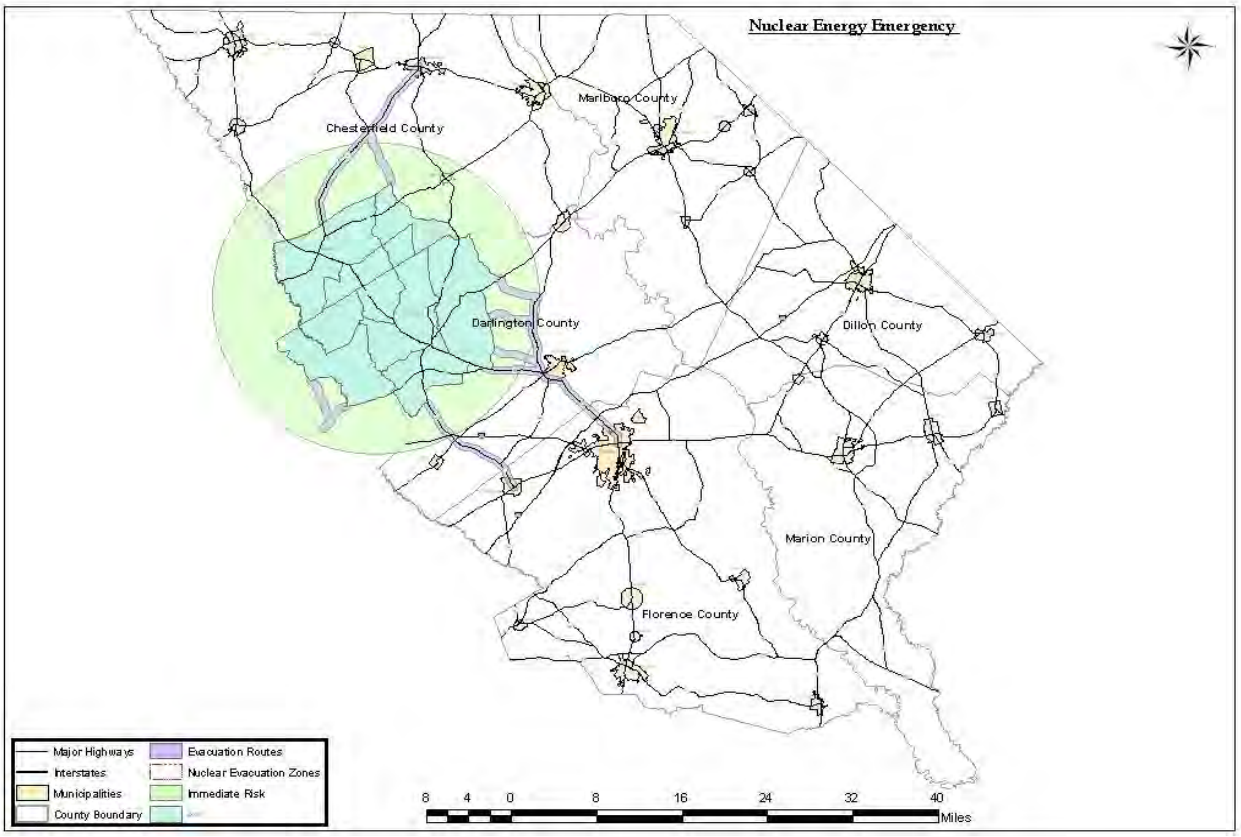


Figure 4 - 27



Nuclear Energy Emergency:

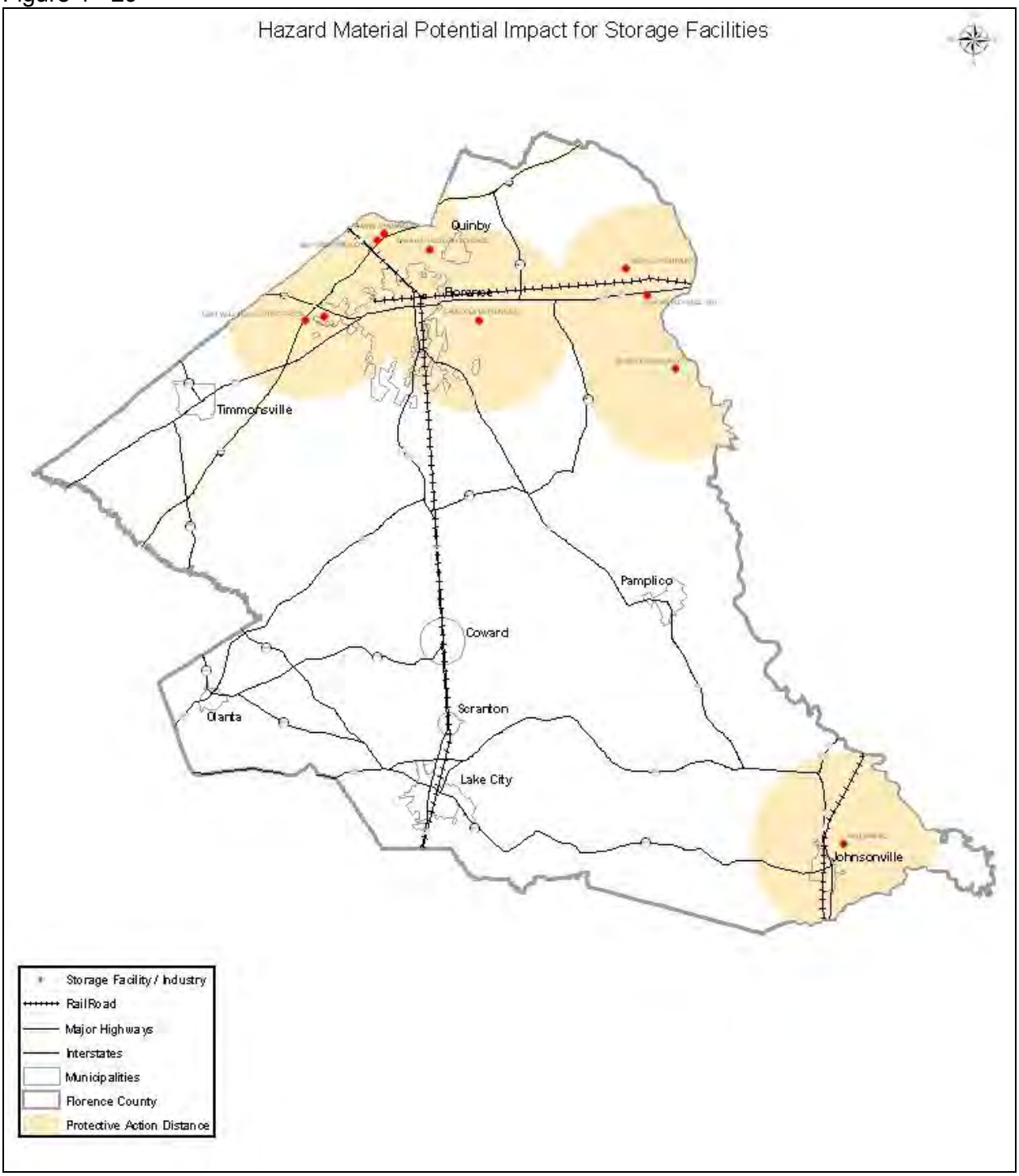
The region contains a nuclear-powered electric generating station, the Lake Robinson facility of Progress Energy, located North of the City of Hartsville. While it is a well-operated facility with an excellent safety record, the facility has some risk. The attached graphic illustrates a 15-mile safety zone and somewhat smaller evacuation area and evacuation routes, covering portions of three counties. Based on these immediate risk and evacuation areas, the estimated risks are location within the 50 MPZ and the Ingestion Exposure Pathway.
Figure 4 - 28



Hazardous Material Storage:

First, the types of hazardous materials stored at (mostly) industrial facilities are illustrated. The illustration shows materials storage sites and the “protective action distance”, or potential impact area of a spill or release.

Figure 4 - 29

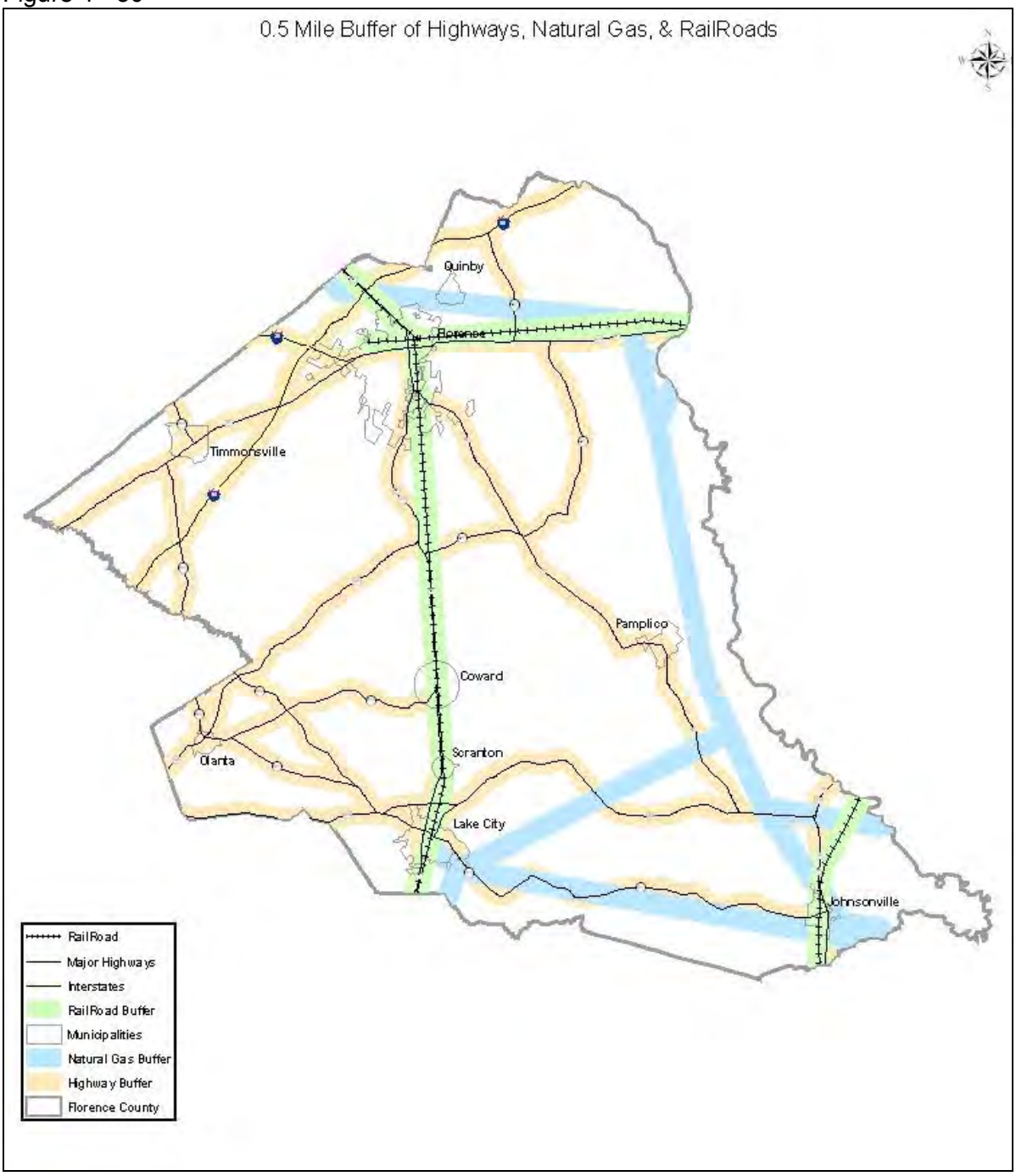


Hazardous Materials Transportation:

Secondly, major highways, rail lines and natural gas transmission lines represent potential spill or release points or corridors for hazardous materials. On the accompanying pages are maps showing these transportation and transmission corridors.

Following the transportation corridors graphic, a composite map of the first two factors is provided, showing vulnerability points. This graphic completes the hazardous materials risk picture.

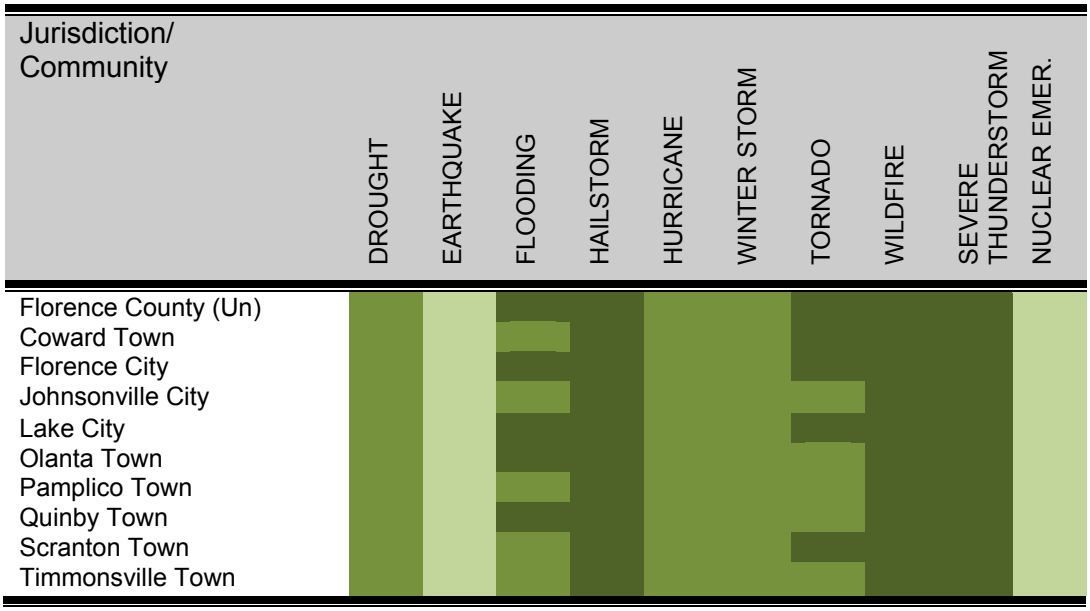
Figure 4 - 30



Composite Assessment of Risks:

The following chart graphically displays the probabilities of occurrence discussed in the proceeding narratives, using a scale of none, low, medium and high. Low probability means that the likelihood of an event occurring is minimal and occurring not more than every five years. Medium probability means that the likelihood of an event occurring is moderate and probability of an event occurring every is every one to five years. And high probability means that you will likely have an event occur and a probability of it occurring at least once a year.
Table 4 - 14

OVERALL RISK: None Low Medium High



To supplement the understanding of overall jurisdictional vulnerability to hazards, the following brief narratives are provided by community:

Florence County (unincorporated area): The unincorporated portions of the County have mostly moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Coward Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards. .

Florence City: The City is the largest municipality in the region and County and has moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards

Johnsonville Town: The Town has moderate to high vulnerability to most hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

City of Lake City: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Olanta Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards..

Pamplico Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Quinby Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential,

commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Scranton Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Timmonsville Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Critical Facilities Assessment

Some facilities and systems in the community are very important to the health, safety and welfare of the community. Therefore, high priority is given to assessing their vulnerabilities to future disasters and proposing mitigation initiatives to address identified vulnerabilities. For purposes of this plan, these facilities are considered to be “critical facilities,” and, as a part of the planning process, the participating jurisdictions have identified selected facilities to warrant this designation as “critical.

Critical facilities have been defined in this plan as those facilities that (1) should not lose operational status during a disaster, (2) should return to operational status within 24 hours following a disaster, or (3) should return to operational status within 72 hours following a disaster. Other definitions exist, including that of the State Hazard Mitigation Plan: (1) the facility should continue to operate during a hazard event or (2) the facility should return to operational status within forty-eight [48] hours if it loses operational status during a hazard event. From this critical facilities database, tables are attached that describe facilities and indicate the vulnerability for these critical facilities to natural and man-made hazards. The tables that follow at the end of this chapter include:

1 Critical Facility Inventory
2 Critical Facility Assessment

The participating jurisdictions have conducted vulnerability assessments for designated critical facilities. These vulnerability assessments are being utilized to evaluate the need for proposing mitigation initiatives to address the defined vulnerabilities, if any, and include any proposed initiatives in the Florence County plan. The participating jurisdictions have attempted to identify and assess those of most concern. As the planning process continues, the participating jurisdictions will continue to add more facility vulnerability assessments to the database, and to consider those with highest vulnerabilities as warranting proposing of mitigation initiatives.

Individual Vulnerability Assessment Results

Within the planning concept, vulnerability assessments are conducted by personnel from the department, agency or neighborhood whose property is being evaluated or, when necessary, by the committee. While the reports attached to this section are basically summaries of the efforts by participants from throughout the county, specific and detailed results of the vulnerability assessments are presented later in this document. These specific vulnerability assessments provide the detailed basis for identifying the needs for mitigation initiatives, which can then be formulated and proposed for incorporation into the plan.

Jurisdiction Policies for Control of Vulnerabilities

An important aspect of the vulnerability assessment process is to determine if the local jurisdictions have policies, plans, codes or requirements in place that are intended to avoid or minimize the vulnerability of the community to the hazards that threaten it. These policies and programs can take many forms, such as building and land use codes, hazard mitigation and emergency response plans, requirements for facility operations and maintenance, etc. If local government's policies, plans and requirements effectively address the hazards posing the greatest risk to the community, then the vulnerability to future disasters can be reduced.

Just like the vulnerability assessment process being undertaken by the committee, for facilities, systems and neighborhoods, the assessment of the extent to which the policy framework responds to the hazards of concern is another vehicle to identify the need for mitigation initiatives. In this case, however, the mitigation initiatives proposed would be non-structural in concept, i.e., the development of new plans, codes or policies to address the identified hazards and to reduce the presence of future vulnerabilities of the community. The first map demonstrates the overall hazard vulnerability.

Social Vulnerability: With preceding analyses pinpointing natural and man-made hazards risk by geographic area, another graphic analysis has mapped population vulnerability, illustrating the extent of population groups and property that is at risk from these natural and man-made hazards. For this GIS analysis, populations that are most vulnerable from impact of especially natural hazards included:

- Concentrations of women
- Concentrations of children: <18 years
- Concentrations of elderly: > 65 years
- Concentrations of minorities.
- Concentrations of the poor (low income areas)

In like fashion, vulnerable places and property have been mapped, included:

- High density areas
- Total housing units
- Total mobile homes
- Median housing value

It should be noted that the places and property vulnerability takes a different philosophical approach that the population factors. The population groups mapped are those that would have greater difficulty preparing for, coping with and recovering from natural disasters. Women, children, the elderly, the poor and other listed populations do not have as much ability or the resources to survive or recover as well as other population groups.

Overall Social and Place Vulnerability.

The committee has also analyzed three aspects of "place" vulnerability to demonstrate the types of issues related to critical facilities and overall population susceptibility to impacts from natural and man-made disasters. Maps are provided that summarize such vulnerability.

Figure 4 - 31

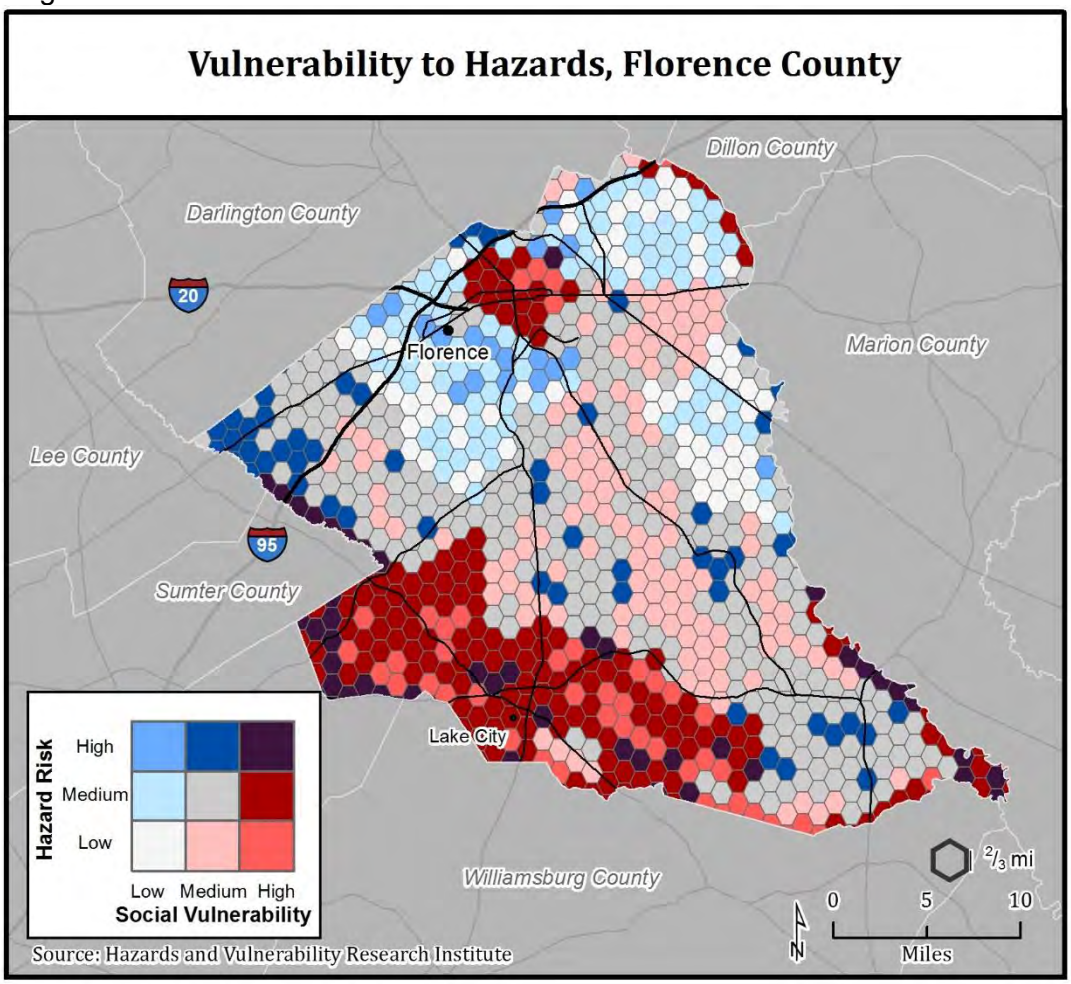


Figure 4 - 32

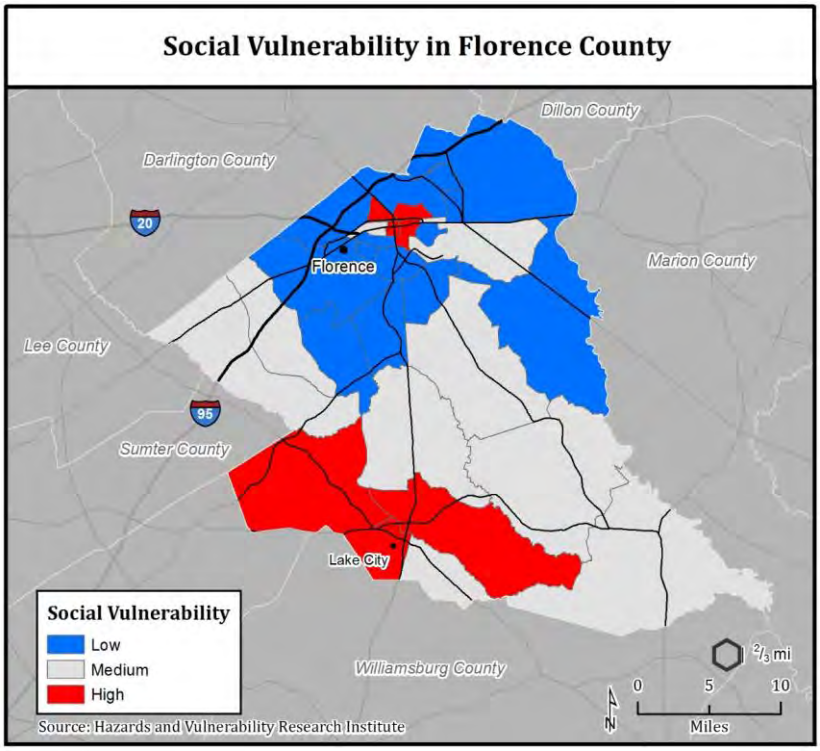
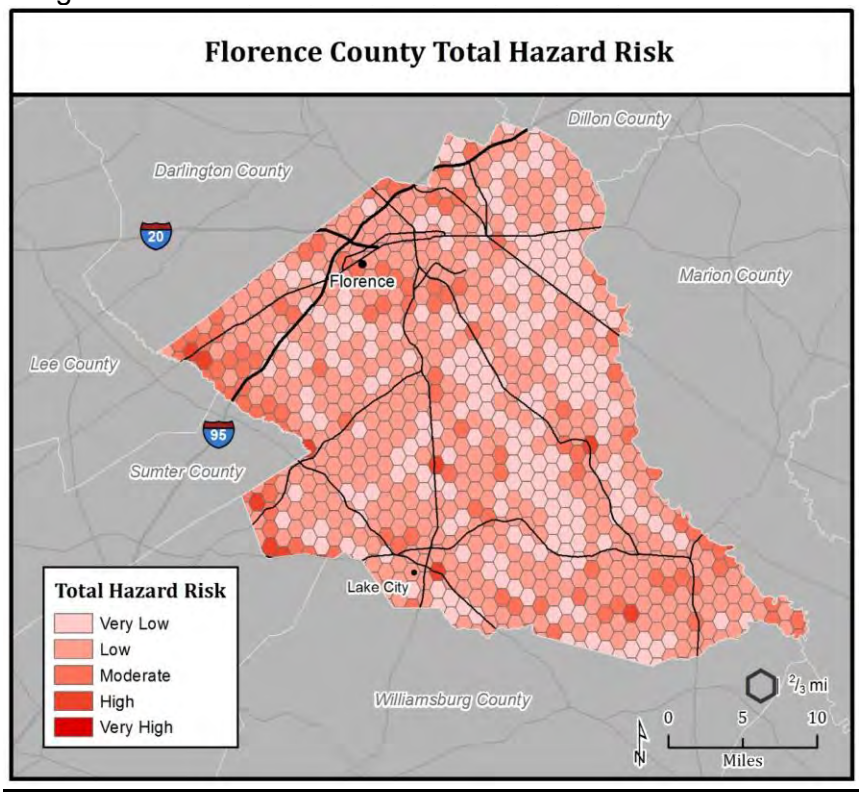

Social Vulnerability in Florence County
Dillon County
Darlington County
20
Florence
Marion County
Lee County
95
Sumter County
Lake City
Social Vulnerability
Low
Medium
High
Williamsburg County
2/3 mi
0
5
10
N
Miles
Source: Hazards and Vulnerability Research Institute

Figure 4 – 33


Florence County Total Hazard Risk
Dillon County
Darlington County
20
Florence
Marion County
Lee County
95
Sumter County
Lake City
Total Hazard Risk
Very Low
Low
Moderate
High
Very High
Williamsburg County
2/3 mi
0
5
10
N
Miles

Summary

It must be emphasized that the fundamental reason for undertaking the hazard identification and vulnerability assessment process is to highlight vulnerabilities that need to be addressed by the development of proposed mitigation initiatives for incorporation into the mitigation plan. Because of the numerous locations, facilities, and systems in Florence County that need to be assessed for their vulnerability to disasters, this component of the mitigation planning process can be expected to be continued in future updates of the plan.

FACILITY NAME	FACILITY TYPE	Drought	Earthquake	Flooding	Hailstorm	Hurricane	Tornado	Wildfire	Thunderstorm Lightning	Winter Weather	Nuclear Emergency
FIRE STATIONS											
City of Florence Station 1	Fire Station	X	X	X	X	X	X		X	X	X
City of Florence Station 2	Fire Station	X	X	X	X	X	X		X	X	X
City of Florence Station 3	Fire Station	X	X	X	X	X	X		X	X	X
City of Florence Station 4	Fire Station	X	X	X	X	X	X		X	X	X
City of Florence Station 5	Fire Station	X	X	X	X	X	X		X	X	X
Hannah-Salem Friendfield Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
Hannah-Salem Friendfield Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Hannah-Salem Friendfield Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Hannah-Salem Friendfield Station 4	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 4	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 5	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 6	Fire Station	X	X	X	X	X	X	X	X	X	X
Johnsonville Station 1	Fire Station	X	X	X	X	X	X		X	X	X
Johnsonville Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Lake City Fire Station 1	Fire Station	X	X	X	X	X	X		X	X	X
Olanta Station 1	Fire Station	X	X	X	X	X	X		X	X	X
Olanta Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Olanta Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Sardis-Timmonsville Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
Sardis-Timmonsville Station 2	Fire Station	X	X	X	X	X	X		X	X	X
Sardis-Timmonsville Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
South Lynches Station 1	Fire Station	X	X	X	X	X	X		X	X	X
South Lynches Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
South Lynches Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X

South Lynches Station 5	Fire Station	X	X	X	X	X	X	X	X	X	X
South Lynches Station 6	Fire Station	X	X	X	X	X	X	X	X	X	X
Timmonsville Station 1	Fire Station	X	X	X	X	X	X		X	X	X
West Florence Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
West Florence Station 2	Fire Station	X	X	X	X	X	X		X	X	X
West Florence Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 4	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 5	Fire Station	X	X	X	X	X	X	X	X	X	X
LAW ENFORCEMENT											
City of Florence Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Coward Police Department	Law Enforcement	X	X	X	X	X	X	X	X	X	X
Florence County LEC	Law Enforcement	X	X	X	X	X	X	X	X	X	X
Johnsonville Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Lake City Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Olanta Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Pamplico Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Quinby Police Department	Law Enforcement	X	X	X	X	X	X	X	X	X	X
Scranton Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
EMS/RESCUE											
Florence County EMS Station 1	EMS/Rescue	X	X	X	X	X	X		X	X	X
Florence County EMS Station 2	EMS/Rescue	X	X	X	X	X	X		X	X	X
Florence County EMS Station 3	EMS/Rescue	X	X	X	X	X	X	X	X	X	X
Florence County EMS Station 4	EMS/Rescue	X	X	X	X	X	X		X	X	X
Florence County EMS Station 5	EMS/Rescue	X	X	X	X	X	X	X	X	X	X
Florence County EMS Station 6	EMS/Rescue	X	X	X	X	X	X	X	X	X	X
Florence County EMS Station 7	EMS/Rescue	X	X	X	X	X	X	X	X	X	X
Johnsonville Rescue Station 1	EMS/Rescue	X	X	X	X	X	X		X	X	X

Pamplico Rescue Station 1	EMS/Rescue	X	X	X	X	X	X		X	X	X
Timmonsville Rescue Station 1	EMS/Rescue	X	X	X	X	X	X		X	X	X
HOSPITALS											
MUSC Florence	Hospital	X	X	X	X	X	X		X	X	X
Lake City Community Hospital	Hospital	X	X	X	X	X	X		X	X	X
McLeod Regional Medical Center	Hospital	X	X	X	X	X	X		X	X	X
EMERGENCY OPERATIONS CENTER											
City of Florence EOC	EOC	X	X	X	X	X	X		X	X	X
Florence County EOC	EOC	X	X	X	X	X	X	X	X	X	X
COMMUNICATIONS			X								
Florence County E-911	Communications	X	X	X	X	X	X	X	X	X	X
Effingham Tower Site	Communications	X	X	X	X	X	X		X	X	X
Lake City Tower Site	Communications	X	X	X	X	X	X		X	X	X
Pamplico Tower Site	Communications	X	X	X	X	X	X	X	X	X	X
E. Florence Tower Site	Communications	X	X	X	X	X	X	X	X	X	X
Florence Tower Site	Communications	X	X	X	X	X	X		X	X	X
Olanta Tower Site	Communications	X	X	X	X	X	X	X	X	X	X
PUBLIC WORKS											
Florence County Public Works	Public Works	X	X	X	X	X	X	X	X	X	X
City of Florence	Public Works	X	X	X	X	X	X	X	X	X	X
City of Lake City	Public Works	X	X	X	X	X	X		X	X	X
Town of Coward Water Department	Public Works	X	X	X	X	X	X		X	X	X
Town of Pamplico Public Works	Public Works	X	X	X	X	X	X		X	X	X
Town of Olanta Water Department	Public Works	X	X	X	X	X	X		X	X	X
GOVERNMENT											
Florence County Complex	Government	X	X	X	X	X	X		X	X	X
City of Florence	Government	X	X	X	X	X	X		X	X	X
City of Lake City	Government	X	X	X	X	X	X		X	X	X
Lower Florence Co. Public Services Bldg	Government	X	X	X	X	X	X		X	X	X
Town of Coward	Government	X	X	X	X	X	X		X	X	X
Town of Johnsonville	Government	X	X	X	X	X	X		X	X	X
Town of Olanta	Government	X	X	X	X	X	X		X	X	X
Town of Pamplico	Government	X	X	X	X	X	X		X	X	X

Town of Quinby	Government	X	X	X	X	X	X	X	X	X	X
Town of Scranton	Government	X	X	X	X	X	X		X	X	X
Town of Timmonsville	Government	X	X	X	X	X	X		X	X	X

Florence County
Hazard Mitigation Plan

Section Five

PROGRESS IN PLAN IMPLEMENTATION

Introduction

This section discusses the current status of implementation of the Florence County Hazard Mitigation Plan. There are several aspects of plan implementation that need to be addressed:

- The status of promulgation or formal adoption of the plan by the participating jurisdictions,
- The previously proposed mitigation initiatives that have been implemented,
- The activities of the FCHMPC to engage the public and the community at large in the mitigation planning process
- The FCHMPC priorities for implementation of approved mitigation initiatives now incorporated into the plan, and
- How recent disaster experience has illustrated the need for and success of the Florence County Hazard Mitigation Plan.

Status of Plan Promulgation and Approval

Promulgation and approval of the plan is a very important step in assuring its implementation. It is the expectation of the FCHMPC that the governing body of each participating jurisdiction or organization will review, consider and act on their section of this plan. If the governing body acts in a positive manner, this is basically an approval or endorsement of the proposed mitigation initiatives contained in the corresponding individual section of the plan. This approval or endorsement, with or without modification by the governing body, represents both consent and commitment by the representatives of that organization or jurisdiction to seek the resources needed to implement the priority initiatives contained therein. Only through actual implementation of the proposed mitigation initiatives contained in this plan can it actually help to make Florence County a disaster resistant area.

As the FCHMPC continues the planning efforts in the future, it is intended that additional updates of the mitigation plan will be published to provide both the participating organizations and the public current information regarding the mitigation planning process. Further, approximately every five years, the FCHMPC will again seek the review and updating of the individual jurisdictional plans. This interval has been selected to provide a sufficient period for the FCHMPC to have made significant progress in further technical analysis, implementation of currently proposed initiatives, and development of new proposals, prior to again seeking formal local approval of the plan. In this way, the plan can be kept up-to-date on a continuing basis by FCHMPC, while nevertheless assuring that the jurisdictions' governing bodies routinely review the plan and approve its implementation.

Public Information and Participation

The FCHMPC, as well as individual participating agencies and organizations, have been active in attempting to engage the general public in the planning process. Public information activities have been undertaken to explain the mitigation planning process to the community and to solicit their input and involvement in the planning process, as well as to provide mitigation awareness and educational information. The FCHMPC welcomes public input to the planning process, and fosters public participation through the issuance of media releases, holding public meetings and hearings, etc.

Public information activities by the FCHMPC have included: conducting an orientation meeting for all jurisdictions in the planning area; encouraging officials, community leaders and emergency service providers including representatives from local governments, business and industry, law enforcement, fire and rescue, health care, and others to be involved in the planning effort. A more direct involvement of the general public was addressed with a public hearing on the draft plan prior to formal adoption of the plan by the local county and municipal governments held on April 22, 2019 and May 15, 2019 at the Florence County Emergency Management Division. Appendix B "Notice of Public Meeting" is attached at the end of this plan. Public input was considered but not included.

Public information activities by the FCHMPC include: inviting the participation of all municipalities, and ensuring that there was broad representation and participation by emergency service provider organizations in the committee proceedings. Every year the FCHMPC will hold one public meeting and any feedback from the meeting will be incorporated in future mitigation plans.

FCHMPC will continue efforts to develop and implement a year-round program to engage the community in the mitigation planning process and to provide them with mitigation-related information and education. These efforts will be to continually invite public comments and recommendations regarding the mitigation goals for the community, the priorities for the planning, and the unique needs of each community for mitigation-related public information.

Completed Mitigation Initiatives

The implementation of the mitigation initiatives proposed as a result of the planning process followed by the FCHMPC is an important measure of the progress in implementation of the plan. As the participants in the planning are able to implement more and more of the proposed initiatives that have been incorporated into the plan, the facilities, systems and neighborhoods of the county can become more and more resistant to the impacts of future disasters.

The Priority for Initiative Implementation

As a part of its future planning process, the FCHMPC also will periodically review the proposed mitigation initiatives approved for incorporation into the plan to determine their priority for implementation during the next planning period. This assessment will provide guidance to the individual jurisdictions and organizations proposing the initiatives to encourage them to focus on those designated as priority. However, because each participating jurisdiction or organization has independent authority and responsibility for implementation of their proposed mitigation initiatives under the mitigation planning approach used by the FCHMPC the jurisdictions and organizations retain the prerogative to act in their own interests, using their own priorities for mitigation initiative implementation.

In many ways, the priority for implementation assigned to proposed mitigation initiatives could be considered a suggestion or recommendation to the proposal sponsors to seek the resources for implementation. These resources may range from the normal budgeting process for the jurisdiction or organization to seeking state or federal financial or technical support for implementation of the initiative.

The designation "priority for implementation" means that the FCHMPC recommends that sponsors of those initiatives so classified focus on their implementation as soon as feasible. As such, this recommendation for priority represents input from the jurisdictions and organizations throughout the county to individual sponsors of proposed mitigation initiatives and therefore the recommendation should be given appropriate weight in the jurisdiction's decision process regarding implementation.

The designation "On Going" for implementation status means that the sponsoring organization or agency is currently working toward securing funding or actual work on this initiative. The designation "No Change" means that the subject mitigation initiative should continue to be included in the plan. FCHMPC believes that a continuing effort should be made to secure the funding for, or create the opportunity for, implementation of the proposed mitigation initiative within the normal business activities of the sponsoring organization or agency. The designation "deleted" means that re-review of the proposed initiative has resulted in the conclusion that the initiative should be removed from the mitigation plan, because it is no longer desirable or necessary. Of course, when a mitigation initiative is actually completed, it is so indicated as within the program. The designation "New" indicates an initiative that the FCHMPC has identified as a new initiative to be added to the plan.

A report entitled "Initiatives By Priority" is provided in an attachment to Section 7, which identifies the implementation priority desired. The operating procedure also calls for the FCHMPC planning staff to recommend an implementation schedule for any proposed mitigation initiative considered to be "On Going" or "priority for implementation." This schedule, which represents the FCHMPC suggestion to the sponsoring organization, gives a recommended date for initiation of implementation as well as a recommended date for completion of the initiative.

Effectiveness of Mitigation Initiatives

Of course, the true measure of progress in the implementation of mitigation initiatives is their success in saving lives, avoiding property damage and protecting valuable or irreplaceable resources in the community. As the mitigation initiatives that have been incorporated into the plan are implemented, there will be more opportunities to measure the "success" of the mitigation efforts.

The best opportunity for measuring this success is to evaluate the community's experience with actual disasters and to attempt to estimate the number of lives that were saved by the implemented initiatives or the value of the property protected from disaster-related damage.

In addition, however, recent disaster events can be very helpful in highlighting the mitigation needs of the community based on the type, location or magnitude of the impacts experienced. In turn, this can be a major factor in the future progress of implementation of the plan, as the FCHMPC considers and acts on actual disaster experience by the community. Such recommendations can be referred to a "lead" agency with the intention that that organization will use the information to propose additional mitigation initiatives for incorporation into the plan.

Compiling data on the "success" of existing and/or completed mitigation initiatives is an activity undertaken by the FCHMPC members on an ongoing basis and is an integral component of the process used to implement and maintain the plan.

To date, the participating organizations have not had an opportunity to conduct extensive analysis of the effectiveness of the previously implemented mitigation initiatives. This is a planning activity, however, to be included in the process to continue to expand and maintain this plan.

Plan Implementation and Plan Maintenance Procedures

This portion of the plan discusses the manner in which the plan will continue to be implemented and maintained over time. "Plan implementation" is considered as the implementation of the proposed mitigation initiatives now included in the plan. "Plan maintenance" is considered to be the process by which the FCHMPC will continue to update, improve and expand the mitigation planning process. It also includes the technical analyses needed for the process to propose more mitigation initiatives for incorporation into the plan. "Plan maintenance" further includes the group's activities to monitor implementation of the plan, to evaluate the effectiveness of implemented mitigation initiatives, and to continually strive to engage the community in the planning process. The basic elements of the FCHMPC actions to implement and maintain the plan are also described in the operating procedures.

Planning and regulatory capability is based on the implementation of plans, ordinances and programs that demonstrate a local jurisdiction's commitment to guiding and managing growth, development and redevelopment in a responsible manner, while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning and transportation planning, in addition to the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built, as well as protecting environmental, historic and cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate hazard mitigation principles and practices into the local decision making process. This mitigation plan will be integrated into the following plans Florence County Comprehensive Land Use Plan, Florence County Emergency Operations Plan, Florence County Zoning and Planning, and Florence County Building Codes as appropriate. As each municipality is covered in a comprehensive planning process under the above listed plans, Florence County will ensure the updated hazard mitigation plan is integrated.

Implementation of these actions is dependent on financial resources and the fiscal capabilities of each jurisdiction. Each will pursue outside funding from outside sources from Federal and State agencies.

Florence County will distribute one copy of the plan in the community or jurisdiction. Each of the jurisdictions in Florence County utilizes a variety of ordinances, policies and plans to guide and control development. These ordinances, policies and plans as identified in this plan in Section 2 vary from jurisdiction to jurisdiction. After each jurisdiction officially adopts the Hazard Mitigation Plan, these existing mechanisms will have hazard mitigation strategies integrated into them, as they are applicable to the ordinance, policy and plan. The Florence County Hazard Mitigation Plan will be available on the Florence County Emergency Management website. www.fcemd.org and also at the Florence County Emergency Management office at 1221 Justice Way, Effingham, S.C. 29541.

Plan Implementation Responsibility and Schedules

As noted above, implementation of the plan is basically through implementation of the approved mitigation initiatives incorporated into the plan. As these initiatives are implemented over the years, the facilities, systems and neighborhoods of the participating jurisdictions will become less vulnerable to the impacts of future disasters, and the communities of the county will become increasingly more disaster resistant.

Upon adoption of this plan, local jurisdictions accept the responsibility to implement the strategies and actions of this plan in concert with all other community development plans and activities where applicable.

As a part of the planning process, on a periodic basis, (after each disaster event or annually, whichever occurs first) approved mitigation initiatives included in the plan are re-evaluated as to their continuing value and the need for their implementation. The purpose of this re-evaluation is to assure that a proposed mitigation initiative remains a valuable component of the plan, and whether any unique or unanticipated conditions warrant extra efforts to implement the initiative.

Plan Maintenance and Monitoring of Plan Implementation

Mitigation planning is a dynamic process that must be continually adjusted to account for changes in the community and to further refine the information, judgments and proposals documented in the local mitigation plan. The process used by the FCHMPC to maintain the plan consists primarily of four functions.

The first is to continue to expand and improve the mitigation plan by accomplishing additional technical analyses, such as vulnerability assessments, evaluation of the policy framework of the participating jurisdictions, and post-event analysis of disasters, etc. The second is to continue to expand participation in the planning process by soliciting the involvement of additional agencies from the participating jurisdictions, by implementing public information programs, and by inviting expanded participation by the private sector. The third is to routinely monitor implementation of the initiatives in the plan until each is completed and in-place, and to assess their actual effectiveness following the next relevant disaster event. The fourth is to issue an updated plan document for use by the participating jurisdictions, to inform the community, and when appropriate for submittal to state and federal agencies for approval pursuant to the Disaster Mitigation Act of 2000. This portion of the plan describes these four activities to maintain the plan.

The technical analyses conducted by the participating jurisdictions will be an ongoing effort to continually assess the hazards threatening the community, the vulnerabilities to those hazards, and the adequacy of the participating jurisdictions' policy and program framework to control those vulnerabilities. When indicated, the technical analysis also includes formulating proposed mitigation initiatives to eliminate or minimize the identified vulnerabilities. Therefore, the extent to which all of the vulnerabilities of the important facilities and neighborhoods in the planning area have been identified is a direct indicator of the mitigation planning remaining to be done.

Another technical analysis important to maintenance of the plan is the expanded and refined evaluation of the policy and program framework of the participating jurisdictions and the

adequacy of this framework to control the vulnerabilities of the community. The emphasis of this plan maintenance activity during the upcoming planning cycle will be to evaluate the effectiveness of hazard specific local ordinances and the adequacy of their enforcement.

The next type of activity to continue to maintain the plan will be to continue to expand participation in the FCHMPC and the mitigation planning process. The current participants in the planning are listed at the end of Section 2. Gaining additional participation in the planning is also part of the public information and community outreach component of the approach to plan development. The planned public information activities are attached as Appendix B entitled "Notice of Public Meeting."

As part of the plan maintenance process, the FCHMPC intends to encourage expanded participation in the planning through active recruitment and involvement of additional local agencies, community groups, and private sector interests in the planning. Also, public hearings will be encouraged at the beginning of future editions of the plan.

The third category of plan maintenance activities that will be undertaken by the FCHMPC will be to monitor the implementation of mitigation initiatives by the participating jurisdictions and their agencies. The FCHMPC will document the efforts to fund the initiative, to conduct required studies, and to obtain any needed permits, as well as to estimate the time remaining to complete design, needed studies and purchasing or construction. When an initiative is completed, this fact is noted in the program as well. The current status of initiative implementation has been discussed in Section 7 of this plan, and this section will again be updated for the next publication of the plan.

As a part of monitoring the implementation of mitigation initiatives, following a disaster and as a part of the post-event analysis that the FCHMPC will conduct the effectiveness of completed mitigation initiatives, or any pre-existing mitigation initiatives, in reducing the human and economic impacts of the event can be estimated. As time passes and disaster events occur, this will enable the FCHMPC to accumulate a database of "mitigation success stories" with regard to the value of the property losses avoided and the number of fatalities, injuries or illnesses prevented.

Monitoring of the effectiveness of plan implementation and maintenance also involves assessing the effectiveness of the mitigation goals and objectives established for the planning process. As noted above, the FCHMPC proposed general goals and a number of specific objectives to guide the participants in the mitigation planning process, and these are given in Section 6. The committee's attempts to address the established objectives, with the intent of achieving the associated mitigation goals for the community, is a key measure of the effectiveness of the continuing plan maintenance and plan implementation. In future planning cycles, these goals will be reviewed and re-evaluated to ensure they are still relevant to the unique needs of the community and continue to address current and expected conditions.

The fourth category of plan maintenance activities is to actually incorporate the results of all technical analyses, including the development of new mitigation initiatives, and to publish another, updated edition of the plan. In addition to documenting additional technical analysis, the FCHMPC will document the efforts to continue to engage the public in the planning process, to expand direct participation in the planning, and to increase representation on the FCHMPC.

Plan Updating, Review and Approval

This plan will be reviewed, updated and approved at least every 5 years beginning with the date of the initial plan approval by FEMA**.** In addition to the start date for the planning cycle, this planning timeline also documents the intended deadlines for completion of key activities in the planning approach. When determined necessary, the FCHMPC shall meet yearly to evaluate the progress attained and to revise, where needed, the activities set forth in the plan. The findings and recommendations of the FCHMPC shall be documented in the form of a report that can be shared with interested City and County Council members. The FCHMPC will also meet following any disaster events warranting a re-examination of the mitigation actions being implemented or proposed for future implementation. This will ensure that the plan is continuously updated to reflect changing conditions and needs within the county which includes the participating jurisdictions.

At the conclusion of the planning cycle, a draft of the updated mitigation plan will be prepared and distributed for public comment and input. Several public hearings will be advertised and conducted on the draft update. Copies of the draft will be placed at Florence County's Emergency Management office for review by interested persons, and its availability for review will be advertised in the local media.

The Next Planning Cycles

As given in this section, the FCHMPC has established a schedule and procedure for both plan implementation and plan maintenance that is expected to be very helpful in improving and expanding the mitigation planning process. Initially, the planning efforts will seek to build on the analyses and proposals included in this edition of the mitigation plan, primarily by completing more vulnerability assessments, evaluations of plans and programs, and proposing additional mitigation initiatives. During these continuing efforts, the FCHMPC will prioritize their efforts towards focusing on facilities and neighborhoods in known hazard areas, assessing all critical facilities, etc.

In addition to these activities for plan maintenance, the FCHMPC has established recommended schedules for implementation of the proposed priority initiatives included in this edition of the plan. It is expected that the agencies and organizations that sponsored these initiatives for the plan will, during the next planning cycles, take advantage of timely opportunities and available resources to implement them on the desired schedule, if it is possible to do so.

The plan is a dynamic document, reflecting a continuing and expanding planning process. The efforts of the FCHMPC will continue into the future, striving to make all of the jurisdictions of county truly disaster resistant communities.

Summary

The FCHMPC recognizes that it will take a long period of time and implementation of many if not all of the proposed initiatives approved for this plan, to make the county a truly disaster-resistant community. However, the continuing dedication to the safety and welfare of the community shown by the participants in this planning process will make this ambitious goal possible.

Florence County

Hazard Mitigation Plan

Section Six

MITIGATION GOALS AND OBJECTIVES

Introduction

This section of the Florence County Hazard Mitigation Plan describes the goals and objectives established by the FCHMPC, and the completed and anticipated actions for implementation and maintenance of this plan in an ongoing effort to achieve these goals.

Goals and Objectives for the Mitigation Plan

The FCHMPC has established a number of goals and objectives to guide their work in the development of this plan. The goals and objectives help to focus the efforts of the groups in the mitigation planning effort to achieve an end result that matches the unique needs, capabilities and desires of the participating jurisdictions.

The goals and objectives selected for the planning process are those listed in an attachment of this section, in a report entitled “Goals and Objectives”. In this planning approach, the goals are established for both the entire planning area and all of the participating jurisdictions. FCHMPC has reviewed the current goals and objectives. The committee feels these goals and objectives reflect the current needs for Florence County.

Using a “Goal-based” Planning Process

The goals established and adopted by the FCHMPC are considered to be broad, general guidance that define the long-term direction of the planning. As indicated in the list of goals and objectives attached to this section, each goal statement has one or more objectives that provide a more specific framework for actions to be taken. The objectives define actions or results that can be placed into measurable and translated into specific assignments for implementation by the associated agencies and organizations.

The objectives selected by the FCHMPC are intended to create a specific framework for guiding the development of proposed mitigation initiatives for incorporation into the plan. Whenever feasible, the planning participants have attempted to associate each proposed mitigation initiative with the objective statement the initiative is intended to achieve. By associating a mitigation initiative with a specific objective, the proposed initiative is also, of course, intended to help achieve the broader goal statement to which the objective corresponds. Proposing mitigation initiatives that are consistent with the selected objectives is a principal mechanism for the participants to achieve the stated goals of the mitigation planning program.

As the plan is reviewed and updated by the FCHMPC, the goals and objectives are also reviewed to ensure they are still applicable to meeting the unique needs, interests and desires of the community.

Addressing Known Risks and Vulnerabilities

In addition to developing proposed mitigation initiatives to achieve the established goals and objectives, an important emphasis of the FCHMPC is to also include proposed mitigation initiatives in this plan that will address known vulnerabilities of important facilities and neighborhoods to the impacts of future disasters. Basically, because the goals and objectives have been established to make the communities of the planning area more "disaster resistant" by reducing known vulnerabilities to future disasters, it is important in the plan to document those initiatives that are intended to address identified vulnerabilities of facilities, systems and neighborhoods, as well as to strengthen the mitigation-related policy framework of the participating jurisdictions.

Mitigation Planning for Critical Facilities

Another indication of this approach to goal-based mitigation planning in the county is that critical facilities in the participating jurisdictions have been identified and, when applicable, their vulnerabilities to future disasters assessed, as explained in Section 6. To date, a number of mitigation initiatives have been proposed that are intended to benefit these designated critical facilities.

Goals and Objectives for the Local Mitigation Planning

OBJECTIVE	GOAL	
GOAL 1	**Local government will have the capability to develop, implement and maintain effective mitigation programs.**	**Unchanged**
Objective 1	Data and information needed for defining hazards, risk areas and vulnerabilities in the community will be obtained.	Unchanged
Objective 2	The capability to effectively utilize available data and information related to mitigation planning and program development will be available.	Unchanged
Objective 3	The effectiveness of mitigation initiatives implemented in the community will be measured and documented.	Unchanged
Objective 4	There will be a program to derive mitigation "lessons learned" from each significant disaster event occurring in or near the community.	Unchanged
Objective 5	Up to date technical skills in mitigation planning and programming will be available for the community.	Unchanged
GOAL 2	**All sectors of the community will work together to create a disaster resistant community by the year 2020.**	**Unchanged**
Objective 1	A business continuity and recovery program will be established and implemented in the community.	Unchanged
Objective 2	Local agencies and organizations will establish specific interagency agreements for the development and implementation of mitigation related projects and programs	Unchanged
Objective 3	Local elected governing bodies will promulgate the local mitigation plan and support community mitigation programming.	Unchanged
Objective 4	Outreach programs to gain participation in mitigation programs by business, industry, institutions and community groups will be developed and implemented.	Unchanged
Objective 5	The community will be periodically updated regarding local efforts in mitigation planning and programming.	Unchanged
Objective 6	The community's public and private sector organizations will partner to promote hazard mitigation programming throughout the community.	Unchanged
GOAL 3	**The community will have the capability to initiate and sustain emergency response operations during and after a disaster.**	**Unchanged**
Objective 1	Designated evacuation routes will be relocated, retrofitted or modified to remain open before, during and after disaster.	Unchanged
Objective 2	Designated evacuation shelters will be retrofitted or relocated to ensure their operability during and after disaster events.	Unchanged
Objective 3	Emergency services organizations will have the capability to detect emergency situations and promptly initiate emergency response operations.	Unchanged
Objective 4	Local emergency services facilities will be retrofitted or relocated to withstand the structural impacts of disasters.	Unchanged
Objective 5	Response capabilities will be available to protect visitors, special needs individuals, and the homeless from a disaster's health and safety impacts.	Unchanged

Objective 6	Shelters or structures for vehicles and equipment needed for emergency services operation will be retrofitted or relocated to withstand disaster impacts.	Unchanged
Objective 7	Utility and communications systems supporting emergency services operations will be retrofitted or relocated to withstand the impacts of disasters.	Unchanged
Objective 8	Vehicle access routes to key health care facilities will be protected from blockage as a result of a disaster.	Unchanged
GOAL 4	**The continuity of local government operations will not be significantly disrupted by disasters.**	**Unchanged**
Objective 1	Buildings and facilities used for the routine operations of government will be retrofitted or relocated to withstand the impacts of disasters.	Unchanged
Objective 2	Community redevelopment plans will be prepared to guide decision-making and resource allocation by local government in the aftermath of a disaster.	Unchanged
Objective 3	Important local government records and documents will be protected from the impacts of disasters.	Unchanged
Objective 4	Plans and programs will be available to assist local government employees in retrofitting or relocating their homes to ensure their availability during a disaster.	Unchanged
Objective 5	Plans will be developed, and resources identified, to facilitate reestablishing local government operations after a disaster.	Unchanged
Objective 6	Redundant equipment, facilities, and/or supplies will be obtained to facilitate reestablishing local government operations after a disaster.	Unchanged
GOAL 5	**The health, safety and welfare of the community's residents and visitors will not be threatened by disasters.**	**Unchanged**
Objective 1	Adequate systems for notifying the public at risk and providing emergency instruction during a disaster will be available in all identified hazard areas.	Unchanged
Objective 2	Effective structural measures will be developed to protect residential areas from the physical impacts of disasters.	Unchanged
Objective 3	Facilities in the community posing an extra health or safety risk when damaged or disrupted will be made less vulnerable to the impacts of a disaster.	Unchanged
Objective 4	Public and private medical and health care facilities in the community will be retrofitted or relocated to withstand the impacts of disasters.	Unchanged
Objective 5	Residential structures will be removed or relocated from defined hazard areas.	Unchanged
Objective 6	Residential structures will be retrofitted to withstand the physical impacts of disasters.	Unchanged
Objective 7	Safety devices on transportation networks will not fail because of a disaster.	Unchanged
Objective 8	Structures, facilities and systems serving visitors to the community will be prepared to meet their immediate health and safety needs.	Unchanged
Objective 9	There will be adequate resources, equipment and supplies to meet victims' health and safety needs after a disaster.	Unchanged

GOAL 6	**The policies and regulations of local government will support effective hazard mitigation programming throughout the community.**	**Unchanged**
Objective 1	All reconstruction or rehabilitation of local government facilities will incorporate techniques to minimize the physical or operational vulnerability to disasters.	Unchanged
Objective 2	Land use policies, plans and regulations will discourage or prohibit inappropriate location of structures or infrastructure components in areas of higher risk.	Unchanged
Objective 3	Local government will ensure that hazard mitigation needs and programs are given appropriate emphasis in resource allocation and decision-making.	Unchanged
Objective 4	Local governments will establish and enforce building and land development codes that are effective in addressing the hazards threatening the community.	Unchanged
Objective 5	Local governments will protect high hazard natural areas from new or continuing development.	Unchanged
Objective 6	Local jurisdictions will participate fully in the National Flood Insurance Program and the associated Community Rating.	Unchanged
Objective 7	New local government facilities will be located outside of hazard areas and/or will be designed to not be vulnerable to the impacts of such hazards.	Unchanged
Objective 8	Reconstruction and rehabilitation of structures and utilities in the community will incorporate appropriate hazard mitigation techniques.	Unchanged
Objective 9	Regulations will be established and enforced to ensure that public and private property maintenance is consistent with minimizing vulnerabilities to disaster.	Unchanged
GOAL 7	**Residents of the community will have homes, institutions and places of employment that are not vulnerable to disasters.**	**Unchanged**
Objective 1	Economic incentive programs for the general public, businesses and industry to implement structural and non-structural mitigation measures will be established.	Unchanged
Objective 2	Local government will support key employers in the community in the implementation of mitigation measures for their facilities and systems.	Unchanged
Objective 3	Programs for removal, relocation or retrofitting of vulnerable structures and utilities in hazard areas will be established and implemented.	Unchanged
Objective 4	The vulnerability to disasters of schools, libraries, museums, and other institutions important to the daily lives of the community will be minimized.	Unchanged
GOAL 8	**The economic vitality of the community will not be threatened by a disaster.**	**Unchanged**
Objective 1	Components of the infrastructure needed by the community's businesses and industries will be protected from the impacts of disaster.	Unchanged
Objective 2	Local government emergency response and disaster recovery plans will appropriately consider the needs of key employers in the community.	Unchanged
Objective 3	Local government will encourage community businesses and industries to make their facilities and operations disaster.	Unchanged
Objective 4	Local government will establish programs, facilities and resources to support business resumption activities by impacted local businesses and industry.	Unchanged

Objective 5	Local government will implement programs to address public perceptions of community condition and functioning in the aftermath of a disaster.	Unchanged
Objective 6	Local government will strive to diversify the employment base of the community.	Unchanged
GOAL 9	**The availability and functioning of the community's infrastructure will not be significantly disrupted by a disaster here.**	**Unchanged**
Objective 1	Local governments will encourage hazard mitigation programming by private sector organizations owning or operating key community utilities.	Unchanged
Objective 2	Routine maintenance of the community's infrastructure will be done to minimize the potential for system failure because of or during a disaster.	Unchanged
Objective 3	Sources of energy normally used by the community will not be unwarrantedly vulnerable to the impacts of a disaster.	Unchanged
Objective 4	The telecommunications systems and facilities serving the community will not be unwarrantedly vulnerable to the impacts of a disaster.	Unchanged
Objective 5	Transportation facilities and systems serving the community will be constructed and/or retrofitted to minimize the potential for disruption during a disaster.	Unchanged
Objective 6	Water and sewer services in the community will not fail because of a disaster.	Unchanged
GOAL 10	**All members of the community will understand the hazards threatening local areas and the techniques to minimize vulnerability to those hazards**	**Unchanged**
Objective 1	All interested individuals will be encouraged to participate in hazard mitigation planning and training activities.	Unchanged
Objective 2	Education programs in risk communication and hazard mitigation will be established and implemented.	Unchanged
Objective 3	Managers of public facilities will be knowledgeable in hazard mitigation techniques and the components of the community's mitigation plan.	Unchanged
Objective 4	Technical training in mitigation planning and programming will be given to appropriate local government employees.	Unchanged
Objective 5	The owners and operators of businesses and industries in the community will be knowledgeable in appropriate hazard mitigation techniques.	Unchanged
Objective 6	The public living or working in defined hazard areas will be aware of that fact, understand their vulnerability and know appropriate mitigation techniques.	Unchanged
Objective 7	The public will have facilitated access to information needed to understand their vulnerability to disasters and effective mitigation techniques.	Unchanged

Florence County

Hazard Mitigation Plan

Section Seven

COMPILATION OF PROPOSED MITIGATION INITIATIVES

This section of the plan contains the compilation of the proposed mitigation initiatives that have been formulated as the result of the planning efforts by the FCHMPC and the planning staff of the FCHMPC. These mitigation initiatives form the fundamental mechanism for the implementation of the local mitigation plan. That is, when the resources and opportunity to do so become available, the sponsoring organization implements an initiative to address the vulnerabilities of the facilities, systems and neighborhoods that have been identified through the mitigation planning process. After each successful implementation of an initiative, the benefited community will become that much more resistant to the impacts of future disasters.

Initiatives Incorporated into the Mitigation Plan

The compilation is given in the tables included in this section of the plan. This list is the complete compendium of proposed, specific mitigation actions and projects being considered to reduce the effects of each hazard addressed by the county planning committees. The first tables are listed by location.

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

When the FCHMPC reaches a favorable judgment regarding the proposal, it is considered adopted for incorporation into the Plan. The FCHMPC can then review the proposal for any other concerns, such as its consistency with other community-based plans, programs and political policies, and if appropriate, formally approve the proposal and its incorporation into the plan. In this way, each mitigation initiative is only incorporated into the plan after satisfactorily undergoing a "peer review" process considering both technical validity and policy compliance.

Priority Ranking for Proposed Mitigation Initiatives

For the Florence County Hazard Mitigation Plan, the FCHMPC members were tasked with establishing a priority for each action. Prioritization of the proposed mitigation actions was based on the following six (6) factors:

- Effect on overall risk to life and property
- Ease of implementation
- Political and community support
- A general economic cost/benefit review
- Funding availability
- Continued compliance with the NFIP (if applicable)

Using these criteria, actions were classified as high, moderate, or low priority by the participating jurisdiction officials. All of the initiatives listed, are as a result of the common process to characterize and prioritize mitigation initiatives that is used by all participants in the planning process. This priority is a long-term characterization value directly associated with each specific initiative based on its own merits at the time it was first proposed by the individual participant. The priority score is intended to serve as a guideline for the FCHMPC regarding the relative desirability of implementation of a specific mitigation initiative in relation to the other proposed initiatives incorporated into the plan. This also provides the estimated cost to implement each initiative, based on the calculations provided by the organization that would be responsible for this action. This cost can be used to assess funding opportunities as they arise to determine which of the higher priority initiatives could be implemented with the amount of financial support likely to be available.

Benefit-to-Cost Ratio

Only a general economic cost/benefit review was considered by the FCHMPC through the process of selecting and prioritizing mitigation actions. Mitigation actions with "high" priority were determined to be the most cost effective and most compatible with the participating jurisdictions' unique needs. A more detailed cost/benefit analysis will be applied to particular projects prior to the application for or obligation of funding, as appropriate. The format for listing the proposed mitigation initiatives included in the plan is given in the report entitled, "Initiatives by Priority" included as an attachment to this section. This report presents all mitigation initiatives by both priority and benefit-to-cost ratio estimated by the FCHMPC. For an initiative to be considered "cost effective," the dollar value of the benefits derived needs to exceed the costs to implement and maintain the initiative. A more sophisticated methodology for calculating a benefit to cost ratio will be necessary at the time of actual implementation, applying to state or federal agencies for funding, or for the design and construction stage of development. The objective of this analysis is to quickly and easily derive a simple annual economic benefit value that will be useful in the mitigation planning process to differentiate among the economic benefit value of different proposals.

Initiatives by Hazard

The second report attached to this section describe the proposed initiatives included in the plan to address the hazards that have been identified as threatening the participating jurisdictions. These reports are entitled "Initiatives by Hazard," and present the mitigation initiatives that have been proposed to address the identified hazards posing the most risk to the county and its jurisdictions. The reports reflect the attention that the participating jurisdictions have given to the highest risk hazards in formulating mitigation initiatives for incorporation into the plan and for implementation when the resources and opportunities to do so become available. This report is also another example of how the planning approach used by the FCHMPC has effectively used the hazard identification and risk estimation process to guide formulation of proposed initiatives.

Table 7-1describes the key elements of the Mitigation Initiatives

Key Elements of Mitigation Initiatives

Florence County Mitigation Action	Title of Action
Hazard Addressed	Hazard which the action addresses
Goal/Objective Addressed	Goal and objective addressed
Priority(High, Moderate and Low)	In preparing their own individual Mitigation Actions Place, each jurisdiction considered their overall hazard risk and capability to mitigate natural hazards as recorded through the risk and capability assessment process, in addition to meeting the adopted countywide mitigation goals and the unique needs of the unique needs of their community. Prioritizing mitigation actions for each jurisdiction was based on the following five (5) factors: (1) effect on overall risk to life and property; (2) ease of implementation; (3) political and community support; (4) a general economic cost/benefit review; and (5) funding availability. This process is also described on page 8:2, Section 8: Mitigation Strategy.
Lead Agency/Department Responsible	Department responsible for undertaking the action.
Estimated Cost	Anticipated cost of the action.
Potential Funding Source	Local, state or federal sources of funds are noted if applicable.
Implementation Schedule	Date by which the action should be completed.
Implementation Status	Completed, progress, deferment, deleted or no change since the previous plan. If the action is new that will also be noted.
Comments	

Initiatives by Location

City of Florence Initiatives

Florence County Mitigation Action 40	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 50	Retrofit critical facilities as identified for the City of Florence Project Impact study "Natural Hazard Evaluation of Public Facilities, June 2001.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	City of Florence Emergency Management
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal.
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 72	Make provisions for emergency power supply to water and sewer facilities in the event of power failure.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 84	The City of Florence continues to participate in the Community Rating System of the National Flood Insurance Program. The current rating is a Class 8; an improved rating would lower flood insurance premiums as well as help to minimize flood risks.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority	High
Lead Agency/Department Responsible	City of Florence Planning Department
Estimated Cost	$50,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 190	Involve business in community hazard mitigation planning.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 191	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 192	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 207	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and FC Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

City of Lake City Initiatives

Florence County Mitigation Action 3	Develop a reduced water usage plan for continuing operations of city facilities and services during a drought.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Lake City Public Works and utilities
Estimated Cost	Unknown
Potential Funding Source	Local funds
Implementation Schedule	3-5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 4	Install safe rooms in city facilities for the protection of city employees and visitors.
Hazard Addressed	Tornado and thunderstorms and lightning
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	City of Lake City
Estimated Cost	Unknown
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 8	Alter/remove previously damaged structures or components of city facilities to avoid future damage.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 5/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	City of Lake City
Estimated Cost	$100,000.00
Potential Funding Source	Unknown
Implementation Schedule	Unknown
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 12	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	City of Lake City
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds.
Implementation Schedule	2 to 3 years.
Implementation Status	No change
Comments	

Florence County Mitigation Action 15	Develop plan for city operations at alternate location(s) until access restored to city facilities.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	City of Lake City and Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 18	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Low
Lead Agency/Department Responsible	City of Lake City
Estimated Cost	$10,000.00
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	On Going
Comments	

Florence County Mitigation Action 20	Negotiate mutual aid agreements/contracts for substitute services to agriculture.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	Unknown
Potential Funding Source	Unknown
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 21	Identify alternative markets for use of salvage or damaged crops.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 8/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local, state and federal.
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 22	Plan for the rapid condemnation of contaminated food and animal feed products.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Environmental Services
Estimated Cost	$10,000.00
Potential Funding Source	Local and state
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 23	Develop approaches to rapid financial compensation of farmers impacted by disaster events.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 9
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 38	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	On Going
Comments	

Florence County Mitigation Action 44	Conduct a detailed engineering study of historical structures and sites to define vulnerabilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Low
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$25,000.00
Potential Funding Source	Local funds
Implementation Schedule	3 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 45	Ground all electrically-operated equipment at all city facilities.
Hazard Addressed	Lightning
Goal/Objective Addressed	Goal 3/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works and Lake City
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 47	Develop plans for prompt, careful restoration of disaster-caused damages to historical structures and sites.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local, state and federal.
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 52	Develop and implement contracts and agreements with backup suppliers for emergency delivery of critical materials and supplies.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Procurement
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 53	Develop a community wide plan to assist businesses to recover after an event.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	2 to 4 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 54	Involve business in community hazard mitigation planning.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 81	Develop plans to provide temporary pre-event protection for historical structures/contents.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 86	Insure city facilities and/or contents under the National Flood Insurance Program.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds.
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 87	Redesign/reconstruction for less wind resistance; stronger roof covering; strengthen sheathing; install hurricane clips/straps; reduce length of unsupported roof spans; and other roof strengthening techniques as needed for City facilities.
Hazard Addressed	Hurricanes
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 89	Educate community on structure/component vulnerability and actions taken.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 10/Objective 6
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 90	Develop a post-flood clean up, decontamination and recovery plan/procedure.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 92	Promote employee actions for flood protection of their homes and property.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 4/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 93	Inform employees of flood risks for city facilities and sites, and train employees in flood plans/procedures for the protection of city facilities.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$20,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 95	Conduct engineering plan of city structures to determine vulnerability to flooding.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$10,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 97	Enhance the standing of the jurisdiction in the NFIP Community Rating System to lower flooding insurance premiums.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Planning Department
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 99	Develop/apply criteria to future city buildings, sites, landscaping, etc for wind protection.
Hazard Addressed	Hurricane and tornado
Goal/Objective Addressed	Goal 4/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$5,000.00
Potential Funding Source	Local, state and federal
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 101	Train employees in pre-hurricane/storm plans/procedures for facility protection.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 104	Develop plan/procedure for pre-hurricane preparation of city facilities and systems to include removal/storage of exterior features; installing shutters on wall openings; and bracing large doors.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 105	Removal of unnecessary/unused outbuildings, sheds, decks, etc.; install tie-downs for portable outbuildings, sheds, etc.,; strengthen/brace/anchor external features, e.g. decks, etc.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 108	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; make temporary storm shutters and install placement fixtures; install laminated glass in windows/doors; install bracing for larger doors, e.g., garage doors.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$50,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 109	Determine/confirm the elevation of city structures and sites, and or flood height.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Planning Department
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 111	Install surge protection device(s) on the city facilities electrical systems or electronic devices.
Hazard Addressed	Lightning
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$1,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 year
Implementation Status	On Going
Comments	

Florence County Mitigation Action 117	Install standby electric power for city facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$50,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 3 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 118	Develop plans or procedures for modification or control of wastewater treatment facilities upon indication or warning that an infection or disease outbreak could occur.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 122	Construct improved drainage systems and other projects to modify the environmental conditions on city properties conducive to disease outbreak and/or spread.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 126	Relocate historical structures out of the area likely to be impacted where feasible.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 129	Develop Community Emergency Response Teams to provide immediate services following a disaster event.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 9
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 130	Implement a program of routine vegetation control to reduce wildfire risk in and around city properties and facilities.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 6/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 132	Conduct engineering/hydrologic studies to determine the extent of drought vulnerability of the city.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 1/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$25,000.00
Potential Funding Source	Local, state and federal funds.
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 135	Demolish and replace or relocate city structures subject to damage from high winds.
Hazard Addressed	Hurricane, tornado and Thunderstorms
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 136	Install or provide high wind warning equipment in all city facilities.
Hazard Addressed	Hurricane, tornado and thunderstorms
Goal/Objective Addressed	Goal 5/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500.00
Potential Funding Source	Local funds
Implementation Schedule	1 year
Implementation Status	No change
Comments	

Florence County Mitigation Action 139	Install standby water well and equip with generator.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 143	Prepare plan/procedure for relocation/restart of city operations after power loss.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 152	Develop a plan for emergency response to the consequences of a terrorist event at city facilities.
Hazard Addressed	Terrorism
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 156	Develop an emergency response plan/procedure to use in the event of a hazardous materials release.
Hazard Addressed	Hazardous Materials
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 162	Plan for damage assessment and restoration of city services after a lightning strike.
Hazard Addressed	Thunderstorms and lightning
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500.00
Potential Funding Source	Local funds
Implementation Schedule	1 year
Implementation Status	On Going
Comments	

Florence County Mitigation Action 164	Purchase and install fire/smoke alarms and/or sprinkler systems at all city facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$25,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 166	Retrofit city structures for current fire code compliance.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Low
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 170	Alter existing operational procedures at city facilities as appropriate to reduce fire risk.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 170	Ensure adequate/enhanced fire code enforcement at all city facilities and throughout the community.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 171	Install and wire city facilities with permanent generators with fuel storage.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 173	Provide a separate, uninterruptible monitoring and alarms for hazardous processes at city facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 174	Use prior damage experience to city facilities to prohibit similar construction after a disaster event.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 175	Use damage experience to design and implement city employees and community educational/awareness program.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds.
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 176	Take action on the most likely causes of access blockage for City facilities, including: Elevate roadways or improve drainage for flooding; reconstruct/protect roadway for erosion vulnerability; remove vegetation for mitigation of wildfire and/or wind damage to trees; and strengthen bridges and/or overpasses for flood and/or erosion vulnerability.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 3/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$50,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 208	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Florence County Initiatives

Florence County Mitigation Action 20	Negotiate mutual aid agreements/contracts for substitute services to agriculture.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	Unknown
Potential Funding Source	Unknown
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 21	Identify alternative markets for use of salvage or damaged crops.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 8/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local, state and federal.
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 22	Plan for the rapid condemnation of contaminated food and animal feed products.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Environmental Services
Estimated Cost	$10,000.00
Potential Funding Source	Local and state
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 23	Develop approaches to rapid financial compensation of farmers impacted by disaster events.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 9
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 34	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 54	Involve business in community hazard mitigation planning.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 57	Develop a plan for emergency response to the consequences of a terrorist event.
Hazard Addressed	Terrorism
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 59	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 60	Relocate critical facilities or system components to a less vulnerable area.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 6/Objective 8
Priority	Low
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 89	Educate community on structure/component vulnerability and actions taken.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 10/Objective 6
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 90	Develop a post-flood clean up, decontamination and recovery plan/procedure.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 178	Buyout and/or acquire homes, businesses and property in the floodplain to prevent future losses.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 179	Perform channel improvements. Examples include: Straighten undesirable bend ways; Deepen and widen stream beds to increase size of waterways; Remove brush, trees and other obstructions; etc.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 180	Utilize GIS to determine which homes in your community are in the floodplain or at risk to flooding. Alert residents and provide information about how they can mitigate their property and homes.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$20,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 181	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 182	Ensure individuals are aware of hurricane potential and review their homeowners or renters insurance policy to ensure they have coverage for wind and/or hurricane damage.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 183	Create a Water Supply Plan for the management of water conservation for rain water catchments and storage.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 184	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 185	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 186	Ensure citizens are aware of safe landscaping techniques such as using fire-resistant plants and non-flammable design features.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 187	Coordinate with local utility organizations to increase homeowner and community education about potential storm effects and possible mitigation activities.
Hazard Addressed	Severe Winter Weather
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 188	Bury electrical lines where possible to resist damage from heavy snow, ice, sleet, and other hazards.
Hazard Addressed	Severe Winter Weather
Goal/Objective Addressed	Goal 2/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	Unknown
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 189	Ensure public and private buildings are designed, when possible, with structural bracing, shutters, laminated glass in window panes, and hail resistant roof shingles or flashing to minimize damage.
Hazard Addressed	Hail
Goal/Objective Addressed	Goal 6/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	Unknown
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 209	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Coward Initiatives

Florence County Mitigation Action 1	Establish a plan for activating a "Business Recovery Center" after an event.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 8/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500
Potential Funding Source	Local funds
Implementation Schedule	3-5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 9	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Low
Lead Agency/Department Responsible	Town of Coward
Estimated Cost	$25,000.00
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 13	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Town of Coward
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds.
Implementation Schedule	2 to 3 years.
Implementation Status	No change
Comments	

Florence County Mitigation Action 14	Develop a plan for alternate means for employees to receive information.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Town of Coward and Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local and state funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 16	Develop plan for city operations at alternate location(s) until access restored to city facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Town of Coward and Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 19	Protect or relocate essential utility and communications equipment serving town facilities from hailstone damage.
Hazard Addressed	Hail storms
Goal/Objective Addressed	Goal 3/Objective 7
Priority	Low
Lead Agency/Department Responsible	Florence County Public works and utilities
Estimated Cost	$10,000.00
Potential Funding Source	Local, state or federal.
Implementation Schedule	3 to 5 years.
Implementation Status	No change.
Comments	

Florence County Mitigation Action 25	Develop a reduced water usage plan for continuing facility operations during a drought.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 27	Conduct landscaping/vegetation control program at all town facilities to reduce wildfire risk.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 3/Objective 4
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$10,000.00
Potential Funding Source	Local
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 28	Promote employees taking action to protect their homes and property from flood damage.
Hazard Addressed	Flood
Goal/Objective Addressed	Goal 10/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 29	Develop a plan/procedure for flood damage control for town facilities.
Hazard Addressed	Flood
Goal/Objective Addressed	Goal 1/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 31	Train employees in pre-hurricane/storm plans/procedures for protection of town facilities.
Hazard Addressed	Flood
Goal/Objective Addressed	Goal 6/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 32	Develop plans/procedures for pre-hurricane preparation of town facilities.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 57	Develop a plan for emergency response to the consequences of a terrorist event.
Hazard Addressed	Terrorism
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 59	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 60	Relocate critical facilities or system components to a less vulnerable area.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 6/Objective 8
Priority	Low
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 61	Protect computers and telecommunications capabilities against power loss.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 4
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 64	Install and wire Town facilities with permanent generator with fuel storage. (Alternatives to this initiative include relocating critical operations to another facility equipped with generator, or negotiating contracts for rental of portable generators. Purchase of permanent generators is preferred.)
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 3/Objective 7
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$80,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 65	Ensure adequate/enhanced fire code enforcement at town facilities.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 9/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Fire Department and Codes Enforcement
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 66	Purchase and install fire/smoke alarm and/or sprinkler system.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Fire Department
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds.
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 69	Prepare a plan for sheltering/evacuation of town facilities personnel.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Town of Johnsonville Initiatives

Florence County Mitigation Action 36	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 201	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 202	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 203	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 210	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Olanta Initiatives

Florence County Mitigation Action 33	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 198	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 199	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 200	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Town of Pamplico Initiatives

Florence County Mitigation Action 37	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 204	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 205	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 206	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 211	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Quinby Initiatives

Florence County Mitigation Action 38	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 196	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 197	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 208	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Scranton Initiatives

Florence County Mitigation Action 2	Harden utility services to town facilities by replacing/burying above-grade utility services and by strengthening utility poles/conductor fixtures.
Hazard Addressed	All hazards except drought.
Goal/Objective Addressed	Goal 3/Objective 7
Priority	High
Lead Agency/Department Responsible	Florence County Public Works and utilities
Estimated Cost	Unknown
Potential Funding Source	Unknown
Implementation Schedule	Planning stage
Implementation Status	No change
Comments	

Florence County Mitigation Action 39	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	No Change
Comments	

Florence County Mitigation Action 74	Negotiate contract with alternate water supplier for emergency services.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 3/Objective 7
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 75	Install portable generator with wiring for water system and police department operations.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$40,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 76	Maintain the reduced water usage plan (Drought Ordinance) for continuing facility operations during a drought.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Town of Scranton
Estimated Cost	Unknown
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 77	Install equipment or modify processes to reduce the water dependency of town facilities.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$1,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 80	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; install laminated glass in windows/doors; and install bracing for larger doors at town facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works and Florence County Emergency Management
Estimated Cost	$5,500.00
Potential Funding Source	Local funds
Implementation Schedule	2 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 85	Protect town facilities from flood damage by improving drainage in proximity to the facilities.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 212	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Timmonsville Initiatives

Florence County Mitigation Action 177	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	No Change
Comments	

Florence County Mitigation Action 193	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 194	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 195	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 213	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Initiatives By Priority

Priority	Initiative	Location
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Lake City
High	Develop a community wide plan to assist businesses to recover after an event.	Lake City
High	Educate community on structure/component vulnerability and actions taken.	Lake City
High	Develop/apply criteria to future city buildings, sites, landscaping, etc for wind protection.	Lake City
High	Removal of unnecessary/unused outbuildings, sheds, decks, etc.; install tie-downs for portable outbuildings, sheds, etc.,; strengthen/brace/anchor external features, e.g. decks, etc.	Lake City
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	City of Florence
High	The City of Florence continues to participate in the Community Rating System of the National Flood Insurance Program. The current rating is a Class 8; an improved rating would lower flood insurance premiums as well as help to minimize flood risks.	City of Florence
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Florence County
High	Educate community on structure/component vulnerability and actions taken.	Florence County
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Johnsonville
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Olanta
High	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Pamplico
High	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Quinby
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Timmonsville
High	Harden utility services to town facilities by replacing/burying above-grade utility services and by strengthening utility poles/conductor fixtures.	Town of Scranton
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Scranton
Moderate	Develop a reduced water usage plan for continuing operations of city facilities and services during a drought.	Lake City
Moderate	Install safe rooms in city facilities for the protection of city employees and visitors.	Lake City

Moderate	Alter/remove previously damaged structures or components of city facilities to avoid future damage.	Lake City
Moderate	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.	Lake City
Moderate	Develop plan for city operations at alternate location(s) until access restored to city facilities.	Lake City
Moderate	Negotiate mutual aid agreements/contracts for substitute services to agriculture.	Lake City
Moderate	Identify alternative markets for use of salvage or damaged crops.	Lake City
Moderate	Plan for the rapid condemnation of contaminated food and animal feed products.	Lake City
Moderate	Develop approaches to rapid financial compensation of farmers impacted by disaster events.	Lake City
Moderate	Ground all electrically-operated equipment at all city facilities.	Lake City
Moderate	Develop plans for prompt, careful restoration of disaster-caused damages to historical structures and sites.	Lake City
Moderate	Develop and implement contracts and agreements with backup suppliers for emergency delivery of critical materials and supplies.	Lake City
Moderate	Involve business in community hazard mitigation planning.	Lake City
Moderate	Develop plans to provide temporary pre-event protection for historical structures/contents.	Lake City
Moderate	Insure city facilities and/or contents under the National Flood Insurance Program.	Lake City
Moderate	Redesign/reconstruction for less wind resistance; stronger roof covering; strengthen sheathing; install hurricane clips/straps; reduce length of unsupported roof spans; and other roof strengthening techniques as needed for City facilities.	Lake City
Moderate	Develop a post-flood clean up, decontamination and recovery plan/procedure.	Lake City
Moderate	Promote employee actions for flood protection of their homes and property.	Lake City
Moderate	Inform employees of flood risks for city facilities and sites, and train employees in flood plans/procedures for the protection of city facilities.	Lake City
Moderate	Conduct engineering plan of city structures to determine vulnerability to flooding.	Lake City
Moderate	Enhance the standing of the jurisdiction in the NFIP Community Rating System to lower flooding insurance premiums.	Lake City
Moderate	Train employees in pre-hurricane/storm plans/procedures for facility protection.	Lake City
Moderate	Develop plan for pre-hurricane preparation of city facilities and systems to include removal/storage of exterior features; installing shutters on wall openings; and bracing large doors.	Lake City

Moderate	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; make temporary storm shutters and install placement fixtures; install laminated glass in windows/doors; install bracing for larger doors, e.g., garage doors.	Lake City
Moderate	Determine/confirm the elevation of city structures and sites, and or flood height.	Lake City
Moderate	Install surge protection device(s) on the city facilities electrical systems or electronic devices.	Lake City
Moderate	Install standby electric power for city facilities.	Lake City
Moderate	Develop plans or procedures for modification or control of wastewater treatment facilities upon indication or warning that an infection or disease outbreak could occur.	Lake City
Moderate	Relocate historical structures out of the area likely to be impacted where feasible.	Lake City
Moderate	Develop Community Emergency Response Teams to provide immediate services following a disaster event.	Lake City
Moderate	Implement a program of routine vegetation control to reduce wildfire risk in and around city properties and facilities.	Lake City
Moderate	Conduct engineering/hydrologic studies to determine the extent of drought vulnerability of the city.	Lake City
Moderate	Demolish and replace or relocate city structures subject to damage from high winds.	Lake City
Moderate	Install or provide high wind warning equipment in all city facilities.	Lake City
Moderate	Prepare plan/procedure for relocation/restart of city operations after power loss.	Lake City
Moderate	Develop a plan for emergency response to the consequences of a terrorist event at city facilities.	Lake City
Moderate	Develop an emergency response plan/procedure to use in the event of a hazardous materials release.	Lake City
Moderate	Plan for damage assessment and restoration of city services after a lightning strike.	Lake City
Moderate	Purchase and install fire/smoke alarms and/or sprinkler systems at all city facilities.	Lake City
Moderate	Alter existing operational procedures at city facilities as appropriate to reduce fire risk.	Lake City
Moderate	Ensure adequate/enhanced fire code enforcement at all city facilities and throughout the community.	Lake City
Moderate	Provide a separate, uninterruptible monitoring and alarms for hazardous processes at city facilities.	Lake City
Moderate	Use prior damage experience to city facilities to prohibit similar construction after a disaster event.	Lake City
Moderate	Use damage experience to design and implement city employees and community educational/awareness program.	Lake City

Moderate	Take action on the most likely causes of access blockage for City facilities, including: Elevate roadways or improve drainage for flooding; reconstruct/protect roadway for erosion vulnerability; remove vegetation for mitigation of wildfire and/or wind damage to trees; and strengthen bridges and/or overpasses for flood and/or erosion vulnerability.	Lake City
Moderate	Retrofit critical facilities as identified for the City of Florence Project Impact study "Natural Hazard Evaluation of Public Facilities, June 2001.	City of Florence
Moderate	Make provisions for emergency power supply to water and sewer facilities in the event of power failure.	City of Florence
Moderate	Involve business in community hazard mitigation planning.	City of Florence
Moderate	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.	City of Florence
Moderate	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.	City of Florence
Moderate	Negotiate mutual aid agreements/contracts for substitute services to agriculture.	Florence County
Moderate	Identify alternative markets for use of salvage or damaged crops.	Florence County
Moderate	Plan for the rapid condemnation of contaminated food and animal feed products.	Florence County
Moderate	Develop approaches to rapid financial compensation of farmers impacted by disaster events.	Florence County
Moderate	Involve business in community hazard mitigation planning.	Florence County
Moderate	Develop a plan for emergency response to the consequences of a terrorist event.	Florence County
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Florence County
Moderate	Develop a post-flood clean up, decontamination and recovery plan/procedure.	Florence County
Moderate	Buyout and/or acquire homes, businesses and property in the floodplain to prevent future losses.	Florence County
Moderate	Perform channel improvements. Examples include: Straighten undesirable bend ways; Deepen and widen stream beds to increase size of waterways; Remove brush, trees and other obstructions; etc.	Florence County
Moderate	Utilize GIS to determine which homes in your community are in the floodplain or at risk to flooding. Alert residents and provide information about how they can mitigate their property and homes.	Florence County
Moderate	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.	Florence County

Moderate	Ensure individuals are aware of hurricane potential and review their homeowners or renters insurance policy to ensure they have coverage for wind and/or hurricane damage.	Florence County
Moderate	Create a Water Supply Plan for the management of water conservation for rain water catchments and storage.	Florence County
Moderate	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.	Florence County
Moderate	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Florence County
Moderate	Ensure citizens are aware of safe landscaping techniques such as using fire-resistant plants and non-flammable design features.	Florence County
Moderate	Coordinate with local utility organizations to increase homeowner and community education about potential storm effects and possible mitigation activities.	Florence County
Moderate	Bury electrical lines where possible to resist damage from heavy snow, ice, sleet, and other hazards.	Florence County
Moderate	Ensure public and private buildings are designed, when possible, with structural bracing, shutters, laminated glass in window panes, and hail resistant roof shingles or flashing to minimize damage.	Florence County
Moderate	Establish a plan for activating a “Business Recovery Center” after an event.	Town of Coward
Moderate	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.	Town of Coward
Moderate	Develop a plan for alternate means for employees to receive information.	Town of Coward
Moderate	Develop plan for city operations at alternate location(s) until access restored to city facilities.	Town of Coward
Moderate	Develop a reduced water usage plan for continuing facility operations during a drought.	Town of Coward
Moderate	Promote employees taking action to protect their homes and property from flood damage.	Town of Coward
Moderate	Develop a plan/procedure for flood damage control for town facilities.	Town of Coward
Moderate	Train employees in pre-hurricane/storm plans/procedures for protection of town facilities.	Town of Coward
Moderate	Develop plans/procedures for pre-hurricane preparation of town facilities.	Town of Coward
Moderate	Develop a plan for emergency response to the consequences of a terrorist event.	Town of Coward
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Coward
Moderate	Ensure adequate/enhanced fire code enforcement at town facilities.	Town of Coward

Moderate	Purchase and install fire/smoke alarm and/or sprinkler system.	Town of Coward
Moderate	Prepare a plan for sheltering/evacuation of town facilities personnel.	Town of Coward
Moderate	Involve business in community hazard mitigation planning.	Town of Johnsonville
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Johnsonville
Moderate	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Johnsonville
Moderate	Involve business in community hazard mitigation planning.	Town of Olanta
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Olanta
Moderate	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Olanta
Moderate	Involve business in community hazard mitigation planning.	Town of Pamplico
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Pamplico
Moderate	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Pamplico
Moderate	Involve business in community hazard mitigation planning.	Town of Quinby
Moderate	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Quinby
Moderate	Involve business in community hazard mitigation planning.	Town of Timmonsville
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Timmonsville
Moderate	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Timmonsville
Moderate	Negotiate contract with alternate water supplier for emergency services.	Town of Scranton
Moderate	Install portable generator with wiring for water system and police department operations.	Town of Scranton
Moderate	Maintain the reduced water usage plan (Drought Ordinance) for continuing facility operations during a drought.	Town of Scranton
Moderate	Install equipment or modify processes to reduce the water dependency of town facilities.	Town of Scranton
Moderate	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; install laminated glass in windows/doors; and install bracing for larger doors at town facilities.	Town of Scranton
Moderate	Protect town facilities from flood damage by improving drainage in proximity to the facilities.	Town of Scranton

Low	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.	Lake City
Low	Conduct a detailed engineering study of historical structures and sites to define vulnerabilities.	Lake City
Low	Construct improved drainage systems and other projects to modify the environmental conditions on city properties conducive to disease outbreak and/or spread.	Lake City
Low	Install standby water well and equip with generator.	Lake City
Low	Retrofit city structures for current fire code compliance.	Lake City
Low	Install and wire city facilities with permanent generators with fuel storage.	Lake City
Low	Relocate critical facilities or system components to a less vulnerable area.	Florence County
Low	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.	Town of Coward
Low	Protect or relocate essential utility and communications equipment serving town facilities from hailstone damage.	Town of Coward
Low	Conduct landscaping/vegetation control program at all town facilities to reduce wildfire risk.	Town of Coward
Low	Relocate critical facilities or system components to a less vulnerable area.	Town of Coward
Low	Protect computers and telecommunications capabilities against power loss.	Town of Coward
Low	Install and wire Town facilities with permanent generator with fuel storage. (Alternatives to this initiative include relocating critical operations to another facility equipped with generator, or negotiating contracts for rental of portable generators. Purchase of permanent generats is preferred.)	Town of Coward

Initiatives By Hazard

Hazard	Initiative	Location
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	City of Florence
All Hazards	Retrofit critical facilities as identified for the City of Florence Project Impact study "Natural Hazard Evaluation of Public Facilities, June 2001.	City of Florence
All Hazards	Make provisions for emergency power supply to water and sewer facilities in the event of power failure.	City of Florence
All Hazards	Involve business in community hazard mitigation planning.	City of Florence
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Florence County
All Hazards	Negotiate mutual aid agreements/contracts for substitute services to agriculture.	Florence County
All Hazards	Identify alternative markets for use of salvage or damaged crops.	Florence County
All Hazards	Plan for the rapid condemnation of contaminated food and animal feed products.	Florence County
All Hazards	Develop approaches to rapid financial compensation of farmers impacted by disaster events.	Florence County
All Hazards	Involve business in community hazard mitigation planning.	Florence County
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Florence County
All Hazards	Relocate critical facilities or system components to a less vulnerable area.	Florence County
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Lake City
All Hazards	Develop a community wide plan to assist businesses to recover after an event.	Lake City
All Hazards	Alter/remove previously damaged structures or components of city facilities to avoid future damage.	Lake City
All Hazards	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.	Lake City
All Hazards	Develop plan for city operations at alternate location(s) until access restored to city facilities.	Lake City
All Hazards	Negotiate mutual aid agreements/contracts for substitute services to agriculture.	Lake City
All Hazards	Identify alternative markets for use of salvage or damaged crops.	Lake City
All Hazards	Plan for the rapid condemnation of contaminated food and animal feed products.	Lake City
All Hazards	Develop approaches to rapid financial compensation of farmers impacted by disaster events.	Lake City

All Hazards	Develop plans for prompt, careful restoration of disaster-caused damages to historical structures and sites.	Lake City
All Hazards	Develop and implement contracts and agreements with backup suppliers for emergency delivery of critical materials and supplies.	Lake City
All Hazards	Involve business in community hazard mitigation planning.	Lake City
All Hazards	Develop plans to provide temporary pre-event protection for historical structures/contents.	Lake City
All Hazards	Install standby electric power for city facilities.	Lake City
All Hazards	Develop plans or procedures for modification or control of wastewater treatment facilities upon indication or warning that an infection or disease outbreak could occur.	Lake City
All Hazards	Relocate historical structures out of the area likely to be impacted where feasible.	Lake City
All Hazards	Develop Community Emergency Response Teams to provide immediate services following a disaster event.	Lake City
All Hazards	Prepare plan/procedure for relocation/restart of city operations after power loss.	Lake City
All Hazards	Purchase and install fire/smoke alarms and/or sprinkler systems at all city facilities.	Lake City
All Hazards	Alter existing operational procedures at city facilities as appropriate to reduce fire risk.	Lake City
All Hazards	Ensure adequate/enhanced fire code enforcement at all city facilities and throughout the community.	Lake City
All Hazards	Use prior damage experience to city facilities to prohibit similar construction after a disaster event.	Lake City
All Hazards	Use damage experience to design and implement city employees and community educational/awareness program.	Lake City
All Hazards	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.	Lake City
All Hazards	Conduct a detailed engineering study of historical structures and sites to define vulnerabilities.	Lake City
All Hazards	Construct improved drainage systems and other projects to modify the environmental conditions on city properties conducive to disease outbreak and/or spread.	Lake City
All Hazards	Retrofit city structures for current fire code compliance.	Lake City
All Hazards	Install and wire city facilities with permanent generators with fuel storage.	Lake City
All Hazards	Establish a plan for activating a “Business Recovery Center” after an event.	Town of Coward
All Hazards	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.	Town of Coward

All Hazards	Develop a plan for alternate means for employees to receive information.	Town of Coward
All Hazards	Develop plan for city operations at alternate location(s) until access restored to city facilities.	Town of Coward
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Coward
All Hazards	Ensure adequate/enhanced fire code enforcement at town facilities.	Town of Coward
All Hazards	Purchase and install fire/smoke alarm and/or sprinkler system.	Town of Coward
All Hazards	Prepare a plan for sheltering/evacuation of town facilities personnel.	Town of Coward
All Hazards	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.	Town of Coward
All Hazards	Relocate critical facilities or system components to a less vulnerable area.	Town of Coward
All Hazards	Protect computers and telecommunications capabilities against power loss.	Town of Coward
All Hazards	Install and wire Town facilities with permanent generator with fuel storage. (Alternatives to this initiative include relocating critical operations to another facility equipped with generator, or negotiating contracts for rental of portable generators. Purchase of permanent generator is preferred.)	Town of Coward
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Johnsonville
All Hazards	Involve business in community hazard mitigation planning.	Town of Johnsonville
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Johnsonville
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Olanta
All Hazards	Involve business in community hazard mitigation planning.	Town of Olanta
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Olanta
All Hazards	Involve business in community hazard mitigation planning.	Town of Pamplico
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Pamplico
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Pamplico
All Hazards	Involve business in community hazard mitigation planning.	Town of Quinby
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Quinby

All Hazards	Harden utility services to town facilities by replacing/burying above-grade utility services and by strengthening utility poles/conductor fixtures.	Town of Scranton
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Scranton
All Hazards	Negotiate contract with alternate water supplier for emergency services.	Town of Scranton
All Hazards	Install portable generator with wiring for water system and police department operations.	Town of Scranton
All Hazards	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; install laminated glass in windows/doors; and install bracing for larger doors at town facilities.	Town of Scranton
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Timmonsville
All Hazards	Involve business in community hazard mitigation planning.	Town of Timmonsville
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Timmonsville
Drought	Create a Water Supply Plan for the management of water conservation for rain water catchments and storage.	Florence County
Drought	Develop a reduced water usage plan for continuing operations of city facilities and services during a drought.	Lake City
Drought	Conduct engineering/hydrologic studies to determine the extent of drought vulnerability of the city.	Lake City
Drought	Install standby water well and equip with generator.	Lake City
Drought	Develop a reduced water usage plan for continuing facility operations during a drought.	Town of Coward
Drought	Maintain the reduced water usage plan (Drought Ordinance) for continuing facility operations during a drought.	Town of Scranton
Drought	Install equipment or modify processes to reduce the water dependency of town facilities.	Town of Scranton
Earthquake	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.	City of Florence
Earthquake	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.	Florence County
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Florence County
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Johnsonville
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Olanta

Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Pamplico
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Quinby
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Timmonsville
Flooding	The City of Florence continues to participate in the Community Rating System of the National Flood Insurance Program. The current rating is a Class 8; an improved rating would lower flood insurance premiums as well as help to minimize flood risks.	City of Florence
Flooding	Educate community on structure/component vulnerability and actions taken.	Florence County
Flooding	Develop a post-flood clean up, decontamination and recovery plan/procedure.	Florence County
Flooding	Buyout and/or acquire homes, businesses and property in the floodplain to prevent future losses.	Florence County
Flooding	Perform channel improvements. Examples include: Straighten undesirable bend ways; Deepen and widen stream beds to increase size of waterways; Remove brush, trees and other obstructions; etc.	Florence County
Flooding	Utilize GIS to determine which homes in your community are in the floodplain or at risk to flooding. Alert residents and provide information about how they can mitigate their property and homes.	Florence County
Flooding	Educate community on structure/component vulnerability and actions taken.	Lake City
Flooding	Insure city facilities and/or contents under the National Flood Insurance Program.	Lake City
Flooding	Develop a post-flood clean up, decontamination and recovery plan/procedure.	Lake City
Flooding	Promote employee actions for flood protection of their homes and property.	Lake City
Flooding	Inform employees of flood risks for city facilities and sites, and train employees in flood plans/procedures for the protection of city facilities.	Lake City
Flooding	Conduct engineering plan of city structures to determine vulnerability to flooding.	Lake City
Flooding	Enhance the standing of the jurisdiction in the NFIP Community Rating System to lower flooding insurance premiums.	Lake City
Flooding	Determine/confirm the elevation of city structures and sites, and or flood height.	Lake City

Flooding	Take action on the most likely causes of access blockage for City facilities, including: Elevate roadways or improve drainage for flooding; reconstruct/protect roadway for erosion vulnerability; remove vegetation for mitigation of wildfire and/or wind damage to trees; and strengthen bridges and/or overpasses for flood and/or erosion vulnerability.	Lake City
Flooding	Promote employees taking action to protect their homes and property from flood damage.	Town of Coward
Flooding	Develop a plan/procedure for flood damage control for town facilities.	Town of Coward
Flooding	Protect town facilities from flood damage by improving drainage in proximity to the facilities.	Town of Scranton
Hail	Ensure public and private buildings are designed, when possible, with structural bracing, shutters, laminated glass in window panes, and hail resistant roof shingles or flashing to minimize damage.	Florence County
Hail	Protect or relocate essential utility and communications equipment serving town facilities from hailstone damage.	Town of Coward
Hazardous Materials	Develop an emergency response plan/procedure to use in the event of a hazardous materials release.	Lake City
Hazardous Materials	Provide a separate, uninterruptible monitoring and alarms for hazardous processes at city facilities.	Lake City
Hurricane	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.	City of Florence
Hurricane	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.	Florence County
Hurricane	Ensure individuals are aware of hurricane potential and review their homeowners or renters insurance policy to ensure they have coverage for wind and/or hurricane damage.	Florence County
Hurricane	Removal of unnecessary/unused outbuildings, sheds, decks, etc.; install tie-downs for portable outbuildings, sheds, etc.,; strengthen/brace/anchor external features, e.g. decks, etc.	Lake City
Hurricane	Train employees in pre-hurricane/storm plans/procedures for facility protection.	Lake City
Hurricane	Develop plan/procedure for pre-hurricane preparation of city facilities and systems to include removal/storage of exterior features; installing shutters on wall openings; and bracing large doors.	Lake City
Hurricane	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; make temporary storm shutters and install placement fixtures; install laminated glass in windows/doors; install bracing for larger doors, e.g., garage doors.	Lake City

Hurricane	Train employees in pre-hurricane/storm plans/procedures for protection of town facilities.	Town of Coward
Hurricane	Develop plans/procedures for pre-hurricane preparation of town facilities.	Town of Coward
Hurricane Tornado	Develop/apply criteria to future city buildings, sites, landscaping, etc for wind protection.	Lake City
Hurricane Tornado	Demolish and replace or relocate city structures subject to damage from high winds.	Lake City
Hurricanes	Redesign/reconstruction for less wind resistance; stronger roof covering; strengthen sheathing; install hurricane clips/straps; reduce length of unsupported roof spans; and other roof strengthening techniques as needed for City facilities.	Lake City
Lightning	Ground all electrically-operated equipment at all city facilities.	Lake City
Lightning	Install surge protection device(s) on the city facilities electrical systems or electronic devices.	Lake City
Lightning	Plan for damage assessment and restoration of city services after a lightning strike.	Lake City
Terrorism	Develop a plan for emergency response to the consequences of a terrorist event.	Florence County
Terrorism	Develop a plan for emergency response to the consequences of a terrorist event at city facilities.	Lake City
Terrorism	Develop a plan for emergency response to the consequences of a terrorist event.	Town of Coward
Tornado Thunderstorms	Install safe rooms in city facilities for the protection of city employees and visitors.	Lake City
Tornado Thunderstorms	Install or provide high wind warning equipment in all city facilities.	Lake City
Wildfires	Ensure citizens are aware of safe landscaping techniques such as using fire-resistant plants and non-flammable design features.	Florence County
Wildfires	Implement a program of routine vegetation control to reduce wildfire risk in and around city properties and facilities.	Lake City
Wildfires	Conduct landscaping/vegetation control program at all town facilities to reduce wildfire risk.	Town of Coward
Winter Weather	Coordinate with local utility organizations to increase homeowner and community education about potential storm effects and possible mitigation activities.	Florence County
Winter Weather	Bury electrical lines where possible to resist damage from heavy snow, ice, sleet, and other hazards.	Florence County

Appendix A
Florence County Stakeholders

Marion Joyner, Florence County Public Works
Dianne Thomas, Mayor, Town of Coward
Terry Knotts, Mayor, Town of Scranton
Steve Dukes, Town of Johnsonville
Ashby Greg, Mayor, Town of Quinby
Michael Welch, Mayor, Town of Olanta
Darrick Jackson, Mayor, Town of Timmonsville
Gene Gainey, Mayor, Town of Pamplico
Lovith Anderson, Mayor, City of Lake City
Drew Griffin, City of Florence Manager
Aubrey Carroll, Florence County Library System
Scott Tanner, City of Johnsonville
Ryon Watkins, Florence County EMS
Herbie Christmas, Florence County Environmental Services
Ronnie Pridgen, Florence County Parks and Recreation
Shawn Brashear, Florence County Building and Planning
Crys Hoge, Florence County GIS Department
Robbie Ervin, Florence County GIS Department
Mike Puckett, McLeod Regional Medical Center
Chief Michael King, Coward Police Department
Chief Donald Tarbell, Francis Marion University Public
Safety Capt. George Mack, Florence Police Department
Johnathan Atkinson, Florence County Floodplain Manager
Curt Whaley, Florence County Building and Planning
Doug Nunnaly, FSD1
Chief Howard Worrell, West Florence Fire Department Jeff
DeLung, City of Florence Fire Department
Adam Swindler, City of Florence
Neal Vincent, FSD2
Ryan Guerry, SCEMD
Chief John DeLung, Windy Hill Fire Department
Chief Ron Douglas, Johnsonville Police Department
Mike Patterson, Salvation Army
Emmanuel Igwe, Hope Network
Cliff Satterwhite, SC Baptist Disaster Relief
Michael Murphy, Harvest Hope
Wendy Byrd, United Way of Florence County
Chris Collins, ARC
Greg Haseldon, SCEMD
RJ Bean, SCDOT
CH Coleman, SCDOT
James Grant, SCEMD
Elizabeth Faulk, SC DSS
Charlotte Krugler, Clemson Extension
Orbree Friday, SC DSS
Harrison Ford, FDTC
Randy Smiley, FSD5
Pam Little-McDaniel, FSD1
Chad Reel, Maranatha School
Ed Hoffman, Trinity Byrnes School
Joan Pennstrom, All Saints School

Don Wilson, Kings Academy
Charles Hyman, FSD2
Jay Alexander, FSD3
Ken Hyman, FSD4
Dr Richard O'Malley, FSD1
Chief Donnie Windham, Timmonsville Rescue
Celeste Johnson, Hope Health
Alisha Jeff, Regency Hospital
Brandon Hooks, MUSC Florence
Chief Randy Osterman, City of Florence Fire
Chief Randy Driggers, Lake City FD
Chief Jimmy Coker, Olanta FD
Chief John DeLung, Windy Hill FD
Chief M. Tedder, Hanna-Salem FD
Chief Jeff Dennis, Sardis-Timmonsville FD
Sunny Collins, SCHP
Chief Coker, Lake City PD
Glenn Kirby, FCSO
Chief Kenney Coxe, Quinby PD
Chief Ron Douglas, Johnsonville PD
Nathan Emery, Otis Elevator
Deandre Stallworth, GE
Henry Swink, McCall Farms
Jim Anderson, Ingram Lumber
Chad Hensley, Honda of SC
Dustin Harcrow, IFH
Brian Kelley, Pee Dee Electric
Kim Davis, PFGC
Beth O'Shields, Duke Energy
Ronald McVoy, QVC
Benny Mullins, PDRTA
Rick Wilder, IFH
Nick Jacobs, Vulcraft
R Cooper, Santee Electric
Carl Smith, Monster
AJ Shortall, Pepsi of Florence
David Morris, CSX
Ignacio Albarran, Ruiz Foods
John Northup, Irix Pharmaceuticals
Ken Acker, Rock Tenn
Ryan Owens, Koppers

ACADEMIA

1. Name of your Academic Institution (school, district, higher education institution):

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your academic institution been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

6. Do your facilities provide sheltering services during hazard events?

7. Do you believe that your facilities and associated infrastructure are disaster-resistant, or capable of withstanding a natural disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?

8. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

9. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your academic functions during and after hazard events?

10. If your facilities are American Red Cross designated shelters, do you believe they are adequately designed and equipped to support sheltering during and after hazard events? Do your facilities have generator capabilities to support the American Red Cross shelter?

11. Do you think that weather forecasts and announcements of road closures and pending road closures are sufficiently accurate and available to support your institution's operation and student transportation decisions in the event of hazard events?

12. Do you believe that emergency response planning, services, and equipment are capable of managing and responding properly to disasters in your community?

13. Do you believe that local government understands, supports, and possesses adequate resources for hazard risk reduction efforts in the community?

14. Is your institution covered by a Continuity of Operations (COOP) Plan? COOP plans examine an institution’s ability to perform minimum essential functions during any situation, and support the continuance of institution functions.

15. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service to hazard events?

16. Do you have any other comments, questions, or concerns?

Business and Industry

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects businesses and commercial interests within Florence County. Provide as much detail as possible to support your choice in the Comments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your Business:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Unincorporated County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your business been impacted by disaster events (damaged, closed for extended periods, etc.)?

6. Do you believe that your facilities are disaster-resistant, or capable of withstanding a disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?

8. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to disaster events, and thus provides long term support for your business and commercial needs?

9. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your business and commercial needs?

10. Do you believe that hazard risks (e.g. flood zones, wildfire risk zones) are considered when developing or expanding commercial or industrial areas?

11. Do you believe that business organizations/associations, chambers of commerce, etc., are a valuable resource in helping business owners protect themselves pre-disaster, and/or recover post-disaster?

12. Do you believe that emergency planning, services, and equipment are adequate to manage and respond properly to disasters that may impact your business or commercial interests?

13. Do you believe that local government understands, supports, and possesses adequate resources for hazard risk reduction efforts in the community?

14. Is your business covered by a Continuity of Operations / Continuity of Government (COOP / COG) plan? COOP / COG plans examine a business's ability to perform minimum essential functions during any situation. COOP activities support the continuance of business functions, while COG activities support the continuance of business governance.

15. Do you test or drill your COOP?

16. If you have a COOP, how often is the plan updated, reviewed and/or revised?

○ Monthly ○ Quarterly ○ Bi-annual ○ Annually ○ Never

17. Based upon past experiences with disasters, what do you believe is needed to assist you in continuing your business/organization operations during disasters? Please be as specific as possible.

18. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

19. Do you have any other comments, questions, or concerns?

Emergency Services

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects businesses and commercial interests within Florence County. Provide as much detail as possible to support your choice in the comments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your Agency:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your facility(ies) been impacted by disaster events (damaged, closed for extended periods, etc.)?

6. Do you think that critical and essential facilities (incl. EMS facilities, fire, law enforcement, hospitals and medical centers) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

7. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to hazards?

8. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support EMS functions during and after hazard events?

9. Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to disasters, so as not to increase the need for EMS during hazard events?

10. Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support emergency functions during hazard events?

11. Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services,)?

12. Do you think that your agency works to inform your constituents of how they can better manage their risk to hazards?

13. Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to disasters in your community?

14. Do you think that local government understands, supports, and possess the resources for hazard risk reduction efforts in the community?

15. Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.

16. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

17. Do you have any other comments, questions, or concerns?

Social Services

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects social service interests within Florence County. Provide as much detail as possible to support your choice in the cvomments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your facility:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your facilities been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

6. Do you think that your facilities are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

7. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to hazards?

8. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support fire functions during and after hazard events?

9. Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to disasters, so as not to increase the need for health care during hazard events?

10. Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support fire department functions during hazard events?

11. Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services,)?

12. Do you think that your department works to inform your constituents of how they can better manage their risk to hazards?

13. Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to disasters in your community?

14. Do you think that local government understands, supports, and possess the resources for hazard risk reduction efforts in the community?

15. Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.

16. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

17. Do you have any other comments, questions, or concerns?

Appendix B

FLORENCE COUNTY
Emergency Management

December 3, 2018

To Whom It May Concern:

Florence County Emergency Management requests your participation in a Hazard Mitigation Planning meeting on December 17, 2018 at 10:00 a.m. It will be held at the Drs. Bruce and Lee Library Meeting Room located at 509 S. Dargan Street, Florence, SC 29501. This meeting will begin the planning for the required five-year update to the Florence County Hazard Mitigation Plan.

Through a series of meetings over the next few months we will address issues related to any natural or man-made hazards that Florence County is susceptible to. By examining critical infrastructure and key resources, as well as past hazards, we will establish priorities for future mitigation projects as steps that can be taken to increase public awareness of these hazards in general.

As Mandated by the Disaster Mitigation Act of 2000, all municipalities are required to complete a local Hazard Mitigation Plan in order to qualify for Federal Emergency Management Administration funding should a disaster occur.

If you have any questions in regards to this matter, please do not hesitate to contact me directly.

Sincerely,

Kristy D. Burch
Senior Coordinator

6719 Friendfield Road • P.O. Box 278 • Effingham, South Carolina 29541 • (843) 665-7255 • Fax (843) 662-9939

HAZARD MITIGATION PLAN STAKEHOLDERS MEETING

December 17, 2018

Please print (legibly) your name, agency and contact information

	Name & agency		E-mail
1.	CHIEF MICHAEL KING,	COWARD POLICE DEPT	MKING@TOWNOFCOWARD.ORG
2.	CHIEF DONALD TARBELL,	FMU POLICE DEPT.	DTARBELL@FMARION.EDU
3.	MAYOR DIANNE THOMAS	TOWN OF COWARD	townofcoward@yahoo.com
4.	CAPT. GEORGE MACK	FLORENCE POLICE DEPT.	GMACK@cityofflorence.com
5.	Crystine Hoge	FloCo GIS	choge@florenceco.org
6.	Jonathan Atkinson	Florence County Building Dept	JAtkinson@Florenceco.org
7.	Curt Whaley	Florence County	cwhaley@florenceco.org
8.	Shawn Brashear	Flo Co	Sbrashear@florenceco.org
9.			
10.			
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HAZARD MITIGATION PLAN STAKEHOLDERS MEETING

December 17, 2018

Please print (legibly) your name, agency and contact information

	Name & agency	E-mail
1.	DOUG NUNNALLY FLORENCE 1 SCHOOLS DIR. OF SECURITY	DNUNNALLY@FSD1.ORG
2.	HOWARD WORRELL WEST FLORENCE FIRE RESCUE	howardw@westflorencefd.com
3.		
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HAZARD MITIGATION PLAN STAKEHOLDERS MEETING

December 17, 2018

Please print (legibly) your name, agency and contact information

	Name & agency	E-mail
1.	Jeff Delong / City of Florence Fire Dept.	jdelong@cityofflorence.com
2.	ADAM SWINDLER / CITY OF FLORENCE PUBLIC WORKS	ASWINDLER@CITYOFFLORENCE.COM
3.		
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HAZARD MITIGATION PLAN STAKEHOLDERS MEETING

December 17, 2018

Please print (legibly) your name, agency and contact information

	Name & agency	E-mail
1.	Ryan Guerry - SCEMD	rguerry@emd.sc.gov
2.	Mike MAYNARD FCEMD	mmaynard@fcemd.org
3.	Neal Vincent FCSD 2	nvincent@fcsd2.org
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HAZARD MITIGATION PLAN STAKEHOLDERS MEETING

December 17, 2018

Please print (legibly) your name, agency and contact information

	Name & agency	E-mail
1.	Michael B. Puckett McLeod Health	mpuckett@mcleodhealth.org
2.	John T DeLong Jr Windy Hill Fire	jDelong@WindyhillFire.com
3.	Ran Douglas Johnsonville PD	johnsonvillepolice@sc.rr.com
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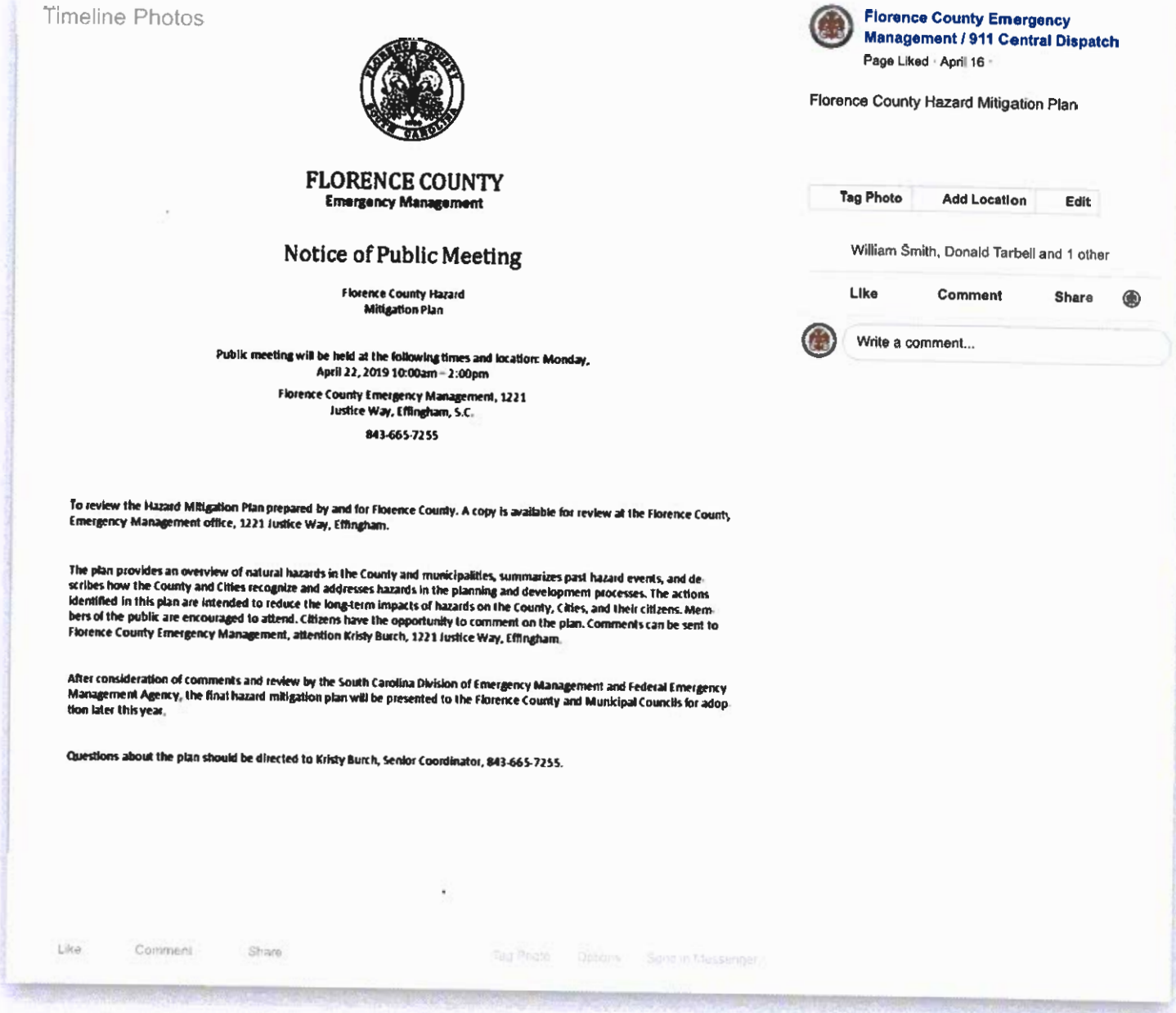
Appendix C



Timeline Photos

Florence County Emergency Management / 911 Central Dispatch
Page Liked · April 16 ·

Florence County Hazard Mitigation Plan

Tag Photo | Add Location | Edit

William Smith, Donald Tarbell and 1 other

Like Comment Share

Write a comment...

FLORENCE COUNTY
Emergency Management

Notice of Public Meeting

Florence County Hazard Mitigation Plan

Public meeting will be held at the following times and location: Monday, April 22, 2019 10:00am – 2:00pm

Florence County Emergency Management, 1221 Justice Way, Effingham, S.C.

843-665-7255

To review the Hazard Mitigation Plan prepared by and for Florence County. A copy is available for review at the Florence County Emergency Management office, 1221 Justice Way, Effingham.

The plan provides an overview of natural hazards in the County and municipalities, summarizes past hazard events, and describes how the County and Cities recognize and addresses hazards in the planning and development processes. The actions identified in this plan are intended to reduce the long-term impacts of hazards on the County, Cities, and their citizens. Members of the public are encouraged to attend. Citizens have the opportunity to comment on the plan. Comments can be sent to Florence County Emergency Management, attention Kristy Burch, 1221 Justice Way, Effingham.

After consideration of comments and review by the South Carolina Division of Emergency Management and Federal Emergency Management Agency, the final hazard mitigation plan will be presented to the Florence County and Municipal Councils for adoption later this year.

Questions about the plan should be directed to Kristy Burch, Senior Coordinator, 843-665-7255.

Like Comment Share Tag Photo Options Send in Messenger

FLORENCE COUNTY
Emergency Management

Notice of Public Meeting

Florence County
Hazard Mitigation Plan

Public meeting will be held at the following times and location:
Monday, April 22, 2019 10:00am – 2:00pm
Florence County Emergency Management,
1221 Justice Way, Effingham, S.C.
843-665-7255

To review the Hazard Mitigation Plan prepared by and for Florence County. A copy is available for review at the Florence County Emergency Management office, 1221 Justice Way, Effingham.

The plan provides an overview of natural hazards in the County and municipalities, summarizes past hazard events, and describes how the County and Cities recognize and addresses hazards in the planning and development processes. The actions identified in this plan are intended to reduce the long-term impacts of hazards on the County, Cities, and their citizens. Members of the public are encouraged to attend. Citizens have the opportunity to comment on the plan. Comments can be sent to Florence County Emergency Management, attention Kristy Burch, 1221 Justice Way, Effingham.

After consideration of comments and review by the South Carolina Division of Emergency Management and Federal Emergency Management Agency, the final hazard mitigation plan will be presented to the Florence County and Municipal Councils for adoption later this year.

Questions about the plan should be directed to Kristy Burch, Senior Coordinator, 843-665-7255.

Appendix D

FLORENCE COUNTY
Emergency Management

Hazard Mitigation Plan
Public Comment Meeting

TO BE HELD:

Wednesday, May 15, 2019

Federal regulations require Florence County to develop an updated, approvable Hazard Mitigation Plan at least every five years. The production of this Plan will not only enable Florence County to be better prepared in the event of a disaster but will also permit us to retain the eligibility to apply for federal grant and disaster funding which we secured when our Plan was last approved by FEMA. The Hazard Mitigation Committee has worked diligently to develop this 2019 update.

A Public Information Meeting will be held on Wednesday, May 15th at 10:00AM at the Florence County Emergency Operations Center. This meeting location is 1221 Justice Way, Effingham, S.C. and will be offering the opportunity for comments on the Plan.

The updated plan is also available for viewing online at:

http://www.fcemd.org/emergency-preparedness/plan-prepare/hazard-mitigation-plan

1221 Justice Way • Effingham, South Carolina 29541 • (843) 665-7255 • Fax (843) 662-9939

HAZARD MITIGATION PLAN REVIEW PUBLIC MEETING

May 15, 2019

Please print (legibly) your name. agency and contact information

	Name & agency	E-mail
1.	Kristy Burch Florence Co EMD	KBurch@flemd.org
2.	S. Snowden Lane cg	S Snowden@cg.co.lane.or.us
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Appendix E

Florence County Hazard Mitigation Plan Questionnaire Distribution List

Marion Joyner, Florence County Public Works
Dianne Thomas, Mayor, Town of Coward
Terry Knotts, Mayor, Town of Scranton
Steve Dukes, Town of Johnsonville
Ashby Greg, Mayor, Town of Quinby
Michael Welch, Mayor, Town of Olanta
Darrick Jackson, Mayor, Town of Timmonsville
Gene Gainey, Mayor, Town of Pamplico
Lovith Anderson, Mayor, City of Lake City
Drew Griffin, City of Florence
Aubrey Carroll, Florence County Library System
Scott Tanner, City of Johnsonville
Ryon Watkins, Florence County EMS
Herbie Christmas, Florence County Environmental Services
Ronnie Pridgen, Florence County Parks and Recreation
Shawn Brashear, Florence County Building and Planning
Crys Hoge, Florence County GIS Department
Robbie Ervin, Florence County GIS Department
Mike Puckett, McLeod Regional Medical Center
Chief Michael King, Coward Police Department
Chief Donald Tarbell, Francis Marion University Public Safety
Capt. George Mack, Florence Police Department
Johnathan Atkinson, Florence County Floodplain Manager
Curt Whaley, Florence County Building and Planning
Doug Nunnaly, FSD1
Chief Howard Worrell, West Florence Fire Department
Jeff DeLung, City of Florence Fire Department
Adam Swindler, City of Florence
Neal Vincent, FSD2
Ryan Guerry, SCEMD
Chief John DeLung, Windy Hill Fire Department
Chief Ron Douglas, Johnsonville Police Department
Mike Patterson, Salvation Army
Emmanuel Igwe, Hope Network
Cliff Satterwhite, SC Baptist Disaster Relief
Michael Murphy, Harvest Hope
Wendy Byrd, United Way of Florence County
Chris Collins, ARC
Greg Haseldon, SCEMD
RJ Bean, SCDOT
CH Coleman, SCDOT
James Grant, SCEMD
Elizabeth Faulk, SC DSS
Charlotte Krugler, Clemson Extension
Orbree Friday, SC DSS
Harrison Ford, FDTC
Randy Smiley, FSD5
Pam Little-McDaniel, FSD1
Chad Reel, Maranatha School
Ed Hoffman, Trinity Byrnes School
Joan Pennstrom, All Saints School

Don Wilson, Kings Academy
Charles Hyman, FSD2
Jay Alexander, FSD3
Ken Hyman, FSD4
Dr Richard O'Malley, FSD1
Chief Donnie Windham, Timmonsville Rescue
Celeste Johnson, Hope Health
Alisha Jeff, Regency Hospital
Brandon Hooks, MUSC Florence
Chief Randy Osterman, City of Florence Fire
Chief Randy Driggers, Lake City FD
Chief Jimmy Coker, Olanta FD
Chief John DeLung, Windy Hill FD
Chief M. Tedder, Hanna-Salem FD
Chief Jeff Dennis, Sardis-Timmonsville FD
Sunny Collins, SCHP
Chief Coker, Lake City PD
Glenn Kirby, FCSO
Chief Kenney Coxe, Quinby PD
Chief Ron Douglas, Johnsonville PD
Nathan Emery, Otis Elevator
Deandre Stallworth, GE
Henry Swink, McCall Farms
Jim Anderson, Ingram Lumber
Chad Hensley, Honda of SC
Dustin Harcrow, IFH
Brian Kelley, Pee Dee Electric
Kim Davis, PFGC
Beth O'Shields, Duke Energy
Ronald McVoy, QVC
Benny Mullins, PDRTA
Rick Wilder, IFH
Nick Jacobs, Vulcraft
R Cooper, Santee Electric
Carl Smith, Monster
AJ Shortall, Pepsi of Florence
David Morris, CSX
Ignacio Albarran, Ruiz Foods
John Northup, Irix Pharmaceuticals
Ken Acker, Rock Tenn
Ryan Owens, Koppers

ACADEMIA

1. Name of your Academic Institution (school, district, higher education institution):

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your academic institution been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

6. Do your facilities provide sheltering services during hazard events?

7. Do you believe that your facilities and associated infrastructure are disaster-resistant, or capable of withstanding a natural disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?

8. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

9. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your academic functions during and after hazard events?

10. If your facilities are American Red Cross designated shelters, do you believe they are adequately designed and equipped to support sheltering during and after hazard events? Do your facilities have generator capabilities to support the American Red Cross shelter?

11. Do you think that weather forecasts and announcements of road closures and pending road closures are sufficiently accurate and available to support your institution's operation and student transportation decisions in the event of hazard events?

12. Do you believe that emergency response planning, services, and equipment are capable of managing and responding properly to disasters in your community?

13. Do you believe that local government understands, supports, and possesses adequate resources for hazard risk reduction efforts in the community?

14. Is your institution covered by a Continuity of Operations (COOP) Plan? COOP plans examine an institution’s ability to perform minimum essential functions during any situation, and support the continuance of institution functions.

15. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service to hazard events?

16. Do you have any other comments, questions, or concerns?

Business and Industry

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects businesses and commercial interests within Florence County. Provide as much detail as possible to support your choice in the Comments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your Business:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Unincorporated County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your business been impacted by disaster events (damaged, closed for extended periods, etc.)?

6. Do you believe that your facilities are disaster-resistant, or capable of withstanding a disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?

8. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to disaster events, and thus provides long term support for your business and commercial needs?

9. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your business and commercial needs?

10. Do you believe that hazard risks (e.g. flood zones, wildfire risk zones) are considered when developing or expanding commercial or industrial areas?

11. Do you believe that business organizations/associations, chambers of commerce, etc., are a valuable resource in helping business owners protect themselves pre-disaster, and/or recover post-disaster?

12. Do you believe that emergency planning, services, and equipment are adequate to manage and respond properly to disasters that may impact your business or commercial interests?

13. Do you believe that local government understands, supports, and possesses adequate resources for hazard risk reduction efforts in the community?

14. Is your business covered by a Continuity of Operations / Continuity of Government (COOP / COG) plan? COOP / COG plans examine a business's ability to perform minimum essential functions during any situation. COOP activities support the continuance of business functions, while COG activities support the continuance of business governance.

15. Do you test or drill your COOP?

16. If you have a COOP, how often is the plan updated, reviewed and/or revised?

○ Monthly ○ Quarterly ○ Bi-annual ○ Annually ○ Never

17. Based upon past experiences with disasters, what do you believe is needed to assist you in continuing your business/organization operations during disasters? Please be as specific as possible.

18. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

19. Do you have any other comments, questions, or concerns?

Emergency Services

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects businesses and commercial interests within Florence County. Provide as much detail as possible to support your choice in the comments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your Agency:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your facility(ies) been impacted by disaster events (damaged, closed for extended periods, etc.)?

6. Do you think that critical and essential facilities (incl. EMS facilities, fire, law enforcement, hospitals and medical centers) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

7. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to hazards?

8. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support EMS functions during and after hazard events?

9. Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to disasters, so as not to increase the need for EMS during hazard events?

10. Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support emergency functions during hazard events?

11. Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services,)?

12. Do you think that your agency works to inform your constituents of how they can better manage their risk to hazards?

13. Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to disasters in your community?

14. Do you think that local government understands, supports, and possess the resources for hazard risk reduction efforts in the community?

15. Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.

16. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

17. Do you have any other comments, questions, or concerns?

Social Services

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects social service interests within Florence County. Provide as much detail as possible to support your choice in the cvomments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your facility:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your facilities been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

6. Do you think that your facilities are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

7. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to hazards?

8. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support fire functions during and after hazard events?

9. Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to disasters, so as not to increase the need for health care during hazard events?

10. Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support fire department functions during hazard events?

11. Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services,)?

12. Do you think that your department works to inform your constituents of how they can better manage their risk to hazards?

13. Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to disasters in your community?

14. Do you think that local government understands, supports, and possess the resources for hazard risk reduction efforts in the community?

15. Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.

16. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

17. Do you have any other comments, questions, or concerns?

U. S. Department of Homeland Security
Region IV
3003 Chamblee Tucker Road
Atlanta, GA 30341

FEMA

January 31, 2020

Ms. Elizabeth Melton
State Hazard Mitigation Officer
South Carolina Emergency Management Division
2779 Fish Hatchery Road
West Columbia, South Carolina 29172

Reference: Multi-jurisdictional Hazard Mitigation Plan: Florence County

Dear Ms. Melton:

This is to confirm that we have completed a Federal review of the draft Florence County Multi-jurisdictional Hazard Mitigation Plan for compliance with the Federal hazard mitigation planning requirements contained in 44 CFR 201.6(b)-(d). We have determined that the Florence County Multi-jurisdictional Hazard Mitigation Plan is now compliant with Federal requirements, subject to formal community adoption.

In order for our office to issue formal approval of the plan, the Florence County must submit adoption documentation. Upon submittal of a copy of documentation of the adoption resolution(s) to our office, we will issue formal approval of the Florence County Multi-jurisdictional Hazard Mitigation Plan. Please have Florence County submit a final copy of their Plan, without draft notations and track changes.

For further information, please do not hesitate to contact Kenya Grant, of the Hazard Mitigation Assistance Branch, at (770) 220-8893 or Marlene Dawkins, of my staff, at (770) 220-8715.

Sincerely,

Kristen M. Martinenza, P.E., CFM
Branch Chief
Risk Analysis
FEMA Region IV

Sponsor(s)/Department	: Emergency Management
Adopted	: February 20, 2020
Committee Referral	: N/A
Committee Consideration Date	: N/A
Committee Recommendation	: N/A

RESOLUTION NO. 21-2019/20

COUNCIL-ADMINISTRATOR FORM OF GOVERNMENT FOR FLORENCE COUNTY

[To Adopt A Hazard Mitigation Plan As Required By The Federal Emergency Management Agency (FEMA).]

WHEREAS:

1. County Council has received notice that the Federal Emergency Management Agency (FEMA) requires Florence County to adopt a Hazard Mitigation Plan; and

2. Attached to this Resolution is the Hazard Mitigation Plan for Florence County; and

3. The attached Hazard Mitigation Plan has been compiled by a working group of County and Municipal staff members and also includes the input of the citizens of Florence County through public meetings held within Florence County; and

4. County Council further finds that the attached Hazard Mitigation Plan was reviewed and approved by the South Carolina Emergency Management Department; and

5. County Council desires to adopt this Hazard Mitigation Plan to comply with the Federal Emergency Management Agency's mandate for a Hazard Mitigation Plan to be in place for Florence County.

NOW, THEREFORE, BE IT RESOLVED BY THE FLORENCE COUNTY COUNCIL DULY ASSEMBLED THAT:

The attached Hazard Mitigation Plan is hereby approved and adopted as the Hazard Mitigation Plan for Florence County.

ATTEST:

Connie Y. Haselden

Connie Y. Haselden, Council Clerk

SIGNED:

Willard Dorriety

Willard Dorriety, Jr., Chairman

COUNCIL VOTE: approved
OPPOSED: 0
ABSENT: 1 - Kent Candle

Florence County

Hazard Mitigation Plan

Section One

INTRODUCTION

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1. Introduction

The Disaster Mitigation Act of 2000, also known as DMA 2000 was signed into law on October 30, 2000 by the President. This established a requirement that to remain eligible for federal funds, local and state governments must develop and adopt an approved hazard mitigation plan. The Federal Emergency Management Agency (FEMA) published an Interim Final Rule (IFR) on February 26, 2002. This set the guidance and regulations under which such plans are to be developed. It includes the planning process as well as the contents of the plan that are required.

Hazard mitigation is often defined as actions taken to reduce the effects of natural hazards on a place and its population. This plan focuses on the countywide hazards with the highest potential for damaging physical assets, people and operations in Florence County. Both the risk assessment and mitigation action plan sections reflect this emphasis, which was the result of careful consideration and a ranking process carried out by the Florence County Hazard Mitigation Planning Committee (FCHMPC). This committee was formed and staffed by the Florence County Emergency Management Department and the Florence County Planning Department. The committee was charged with developing a county component for the plan. Neighboring communities, agencies involved in hazard mitigation and businesses, academia, and other relevant private and non-profit interests were also involved in the planning process. All towns and cities as well as representatives from law enforcement, emergency services, business and industry and others with interest in hazard mitigation planning were invited to participate in the development of the respective county components of the plan.

The FCHMPC reviewed all existing plans listed on Table 2-1, studies, reports and technical information. Documents reviewed included comprehensive plans, zoning ordinances, building codes, historical hazard event records, and emergency operations plans. Recommendations in these documents relative to hazard mitigation issues were addressed in the hazard vulnerability analysis and hazard mitigation initiatives prepared for inclusion in this plan. Additionally, public meetings were scheduled to provide an opportunity for the general public and local government officials to have input. This was accomplished by public meetings conducted in Florence County. The meetings were coordinated by the Florence County Emergency Management Department and the Florence County Planning Department in cooperation with administrative officials from each participating municipality. The public was invited to the meetings through news releases and notices posted at municipal and county offices.

Florence County Emergency Management and Florence County Planning assisted the county planning committee in conducting detailed studies to identify the hazards threatening the jurisdictions of Florence County and to estimate the relative risks posed to the community by those hazards. This information has been used by the committee to prioritize their planning efforts to assess the vulnerabilities of the facilities and neighborhoods of Florence County to the

impacts of future disasters involving those hazards. With these vulnerabilities identified, the committee worked to identify, justify and prioritize specific proposals for projects and programs that will avoid or minimize these vulnerabilities. This document includes a detailed characterization of hazards in Florence County; a risk assessment that describes potential losses to physical assets, people, and operations; a set of goals, objectives, strategies, and initiatives that will guide Florence County mitigation activities; and a detailed plan for implementing and monitoring the plan.

These proposed projects and programs to reduce the impacts of future disasters are called "mitigation initiatives" in this document. Mitigation initiatives have been developed, and will continue to be developed, by the county planning committee for implementation whenever the resources and opportunities to do so become available. Implementation of this plan is essentially through implementation of the mitigation initiatives included in the plan, and with each implementation effort, the county planning committee will continue to help make the participating communities more resistant to the human and economic costs of future disasters.

This document details the work of the Hazard Mitigation Planning Committee over the past several months to develop the planning organization, to undertake the needed technical analyses, and to coordinate the mitigation initiatives that have been proposed by the participating jurisdictions and organizations. The draft plan will be submitted to all participating jurisdictions for adoption by the respective governing bodies.

The Florence County Hazard Mitigation Plan has been established to make the population, neighborhoods, businesses and institutions of the community more resistant to the impacts of future disasters. The county planning committee and staff have been undertaking a comprehensive, detailed evaluation of the vulnerabilities of the towns, cities and unincorporated areas throughout the county to all types of future natural hazards in order to identify ways to make the communities of the planning area more resistant to their impacts. This document reports the results of that planning process for the current planning period.

2. Organization of the Plan

The plan is organized into six sections.

1. Introduction
2. Planning Process
3. Community Profile
4. Hazard Identification and Risk Assessment
5. Progress In Plan Implementation
6. Mitigation Goals and Objectives and Plan Implementation
7. Completion of Proposed Mitigation Initiatives

Appendices

The following sections of the Florence County Hazard Mitigation Plan present the detailed information to support these purposes. The remainder of the plan describes the county planning committee to managing the planning process. The plan then summarizes the results of the hazard identification and vulnerability assessment process, and addresses the adequacy of the current policy basis for hazard management by the participating jurisdictions and organizations. The plan provides a description of the mitigation-related characteristics of each participating jurisdiction, such as its land uses and population growth trends, the mitigation-related policies already in-place, identified critical facilities present in the community, and if there

are properties that have been repeatedly damaged by past disasters. The past and planned efforts of the committee to engage the entire community in the mitigation planning process are documented. The plan further addresses the mitigation goals and objectives established by the committee and the actions to be taken to maintain, expand and refine the Florence County Hazard Mitigation Plan and the planning process. Finally, the plan documents the structural and non-structural mitigation initiatives proposed by the participating jurisdiction to address the identified vulnerabilities.

3. Executive Summary

Florence County as a whole is threatened by a number of different types of hazards. These hazards endanger the health and safety of the population of the community, jeopardize its economic vitality, and imperil the quality of its environment. Because of the importance of avoiding or minimizing the vulnerabilities to these hazards, the public and private sector interests of Florence County have joined together to undertake a comprehensive planning process that has culminated in the publication of this document: "The Florence County Hazard Mitigation Plan." Florence County is comprised of the following nine municipalities in the northeastern portion of the state:

Town of Coward	Town of Pamplico
City of Florence	Town of Quinby
Town of Johnsonville	Town of Scranton
City of Lake City	Town of Timmonsville
Town of Olanta	

Florence County government provides planning and economic development technical assistance services to these municipalities. This is a county wide hazard mitigation plan, and the planning effort has been conducted through the coordinated, cooperative effort of these local governments.

The purpose of a mitigation plan is to rationalize the process of determining appropriate hazard mitigation actions. This document includes a detailed characterization of hazards in Florence County; a risk assessment that describes potential losses to physical assets, people, and operations; a set of goals, objectives, strategies, and initiatives that will guide Florence County mitigation activities; and a detailed plan for implementing and monitoring the plan. This plan will continue to be updated and expanded in the future to ensure it addresses changing conditions in the participating jurisdictions, experiences with disasters that do occur, and any changes in the characteristics of the hazards that threaten the involved communities. This updating process and future editions of the mitigation plan issued will also be used to continue to inform and involve the general public and other interested groups to fully participate in making the community more resistant to the impacts of future disasters.

The Florence County Hazard Mitigation Plan was prepared in accordance with the process established in the State and Local Mitigation Planning guidance produced by the Federal Emergency Management Agency (FEMA), and the requirements of the interim Final Rule. The process established in the guides includes four basic steps; Organize Resources, Assess Risks, Develop a Mitigation Plan and Implement the plan and monitor progress.

Florence County

Hazard Mitigation Plan

Section Two

PLANNING PROCESS

Introduction

The FCHMPC includes representatives from local government agencies, business interests, community organizations, and institutions. The FCHMPC staff solicited the involvement in the mitigation planning by each local jurisdiction in the planning area. In this solicitation, the jurisdictions were encouraged to identify agencies and organizations that should represent the jurisdiction. This solicitation, sent out by the planning staff, stated the many benefits to local governments from participation in the mitigation planning. State and federal agencies, agencies that have the authority to regulate development, as well as regional agencies with facilities or responsibilities in Florence County were also encouraged to be involved in the planning, and were contacted through telecommunications and invited to participate. Those organizations not directly associated with state, regional or local governments, such as neighborhood associations, businesses and industries, and volunteer agencies were solicited to join the planning process. With a positive response to these solicitations, each local jurisdiction and its agencies, any state, federal and regional agencies, and/or any interested community groups, are considered to be participants in the committee planning process and requested to engage in the meetings and planning activities necessary to develop, maintain and implement the plan. The FCHMPC encourages participation in the development of the plan by all interested local jurisdictions, agencies, organizations and individuals, listed as Appendix A named "Florence County Stakeholders". The planning approach is intended to represent a partnership between the public and private sector of the community, working together to create a disaster resistant community. The proposed mitigation initiatives developed by the committee and listed at the end of this section, when implemented, are intended to make the entire county safer from the impacts of future disasters, for the benefit of every individual, neighborhood, business and institution.

The committee represents all of the local municipalities and key organizations participating in the planning process, and is the group that makes the official decisions regarding the planning process. The committee serves as the official liaison of the planning project to the community, and coordinates all planning activities. Most importantly for this document, however, is the committee's role to approve proposed mitigation initiatives for incorporation into the county's hazard mitigation plan, for determining the priorities for implementation of those initiatives, and for removing or terminating initiatives that are no longer desirable for implementation. Due to the lack of participation by the jurisdictions of Scranton and Timmonsville, the committee took as much consideration as possible throughout the planning process.

The planning staff, working closely with the respective committee, coordinates the actual technical analyses and planning activities that are fundamental to development of this plan. These activities include preparing and presenting to the FCHMPC the hazard

identification and vulnerability assessment processes, as well as assisting the committee in receiving and coordinating the mitigation initiatives that are proposed by the committee participants for incorporation into this plan. The coordinating process undertaken constitutes a "peer review" of the proposed mitigation initiatives submitted for incorporation into the plan. Through the peer review, each proposed initiative is to be reviewed for its consistency with the goals and objectives established for the planning process and its relationship to identified hazards and defined vulnerabilities to those hazards. The review process strives to assure the assumptions used by the organization to develop the proposal are reasonable, that the proposal would not conflict with or duplicate other proposed initiatives, that proposals are feasible and consistent with known requirements.

As soon as the committee approves a proposed mitigation initiative in this manner, it is considered to be officially a part of the Florence County Hazard Mitigation Plan, and expected to be implemented by the sponsoring organization as soon as the resources and/or opportunity to do so becomes available.

Planning and Regulatory Capability

Planning and regulatory capability is based on the implementation of plans, ordinances and programs that demonstrate a local jurisdiction's commitment to guiding and managing growth, development and redevelopment in a responsible manner, while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning and transportation planning, in addition to the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built, as well as protecting environmental, historic and cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate hazard mitigation principles and practices into the local decision making process. The assessment is designed to provide a general overview of the key planning and regulatory tools or programs in place or under development for Florence County, along with their potential effect on loss reduction. This information will help identify opportunities to address existing gaps, weaknesses or conflicts with other initiatives in addition to integrating the implementation of this plan with existing planning mechanisms where appropriate.

The attached table, Table 2-1, provides a summary of the relevant local plans, ordinances and programs already in place or under development for Florence County. Each of these local plans, ordinances and programs should be considered available mechanisms for incorporating the requirements of the Florence County Hazard Mitigation Plan Update.

Hazard Identification and Risk Assessment

The committee identifies the hazards that threaten all or portions of the community. Where possible, specific geographic areas, subject to the impacts of the identified hazards, are delineated. The purpose of this analysis is to define those locations, facilities or systems within the county that may be vulnerable to the impacts of those hazards and warrant further assessment. The hazard identification analysis will be accomplished through the following general methodology:

- Identifying all significant hazards that threaten the county.
- Defining or estimating the geographic and/or operational scope of the areas and/or community functions within the county that could be impacted by the hazard,
- Determining or estimating the probability or frequency of occurrence of the hazard event,
- Defining, estimating or predicting the general consequences of the event to human health and safety, to property, to valuable environmental resources and the economic vitality of the community.
- Deriving a measure of risk to reflect the relative significance of hazard being addressed to the jurisdiction being evaluated.

The measure of relative risk may then be used by the committee to guide and prioritize the subsequent mitigation planning process. The hazard identification process is intended to encompass both developed areas as well as those likely to be developed in the future. Hazard identification information and other findings from this analysis will be made available for use by the public and other interested organizations and agencies.

A variety of information resources regarding hazard identification and risk assessment have been available. The planners have attempted to incorporate consideration of hazard specific maps, including flood plain delineation maps, whenever applicable, and have attempted to avail themselves of GIS-based analyses of hazard areas and the locations of critical facilities, infrastructure components and other properties located within the defined hazard areas. The detailed analysis of hazards in the region was prepared in accordance with a methodology originally developed by the University of South Carolina. That methodology depends heavily on data analysis using Geographic Information System (GIS) technology.

Developing Hazard Mitigation Initiatives

This process enables the county planning committee to highlight the most significant vulnerabilities, again to assist in prioritizing subsequent efforts to formulate and characterize specific hazard mitigation initiatives to eliminate or minimize those vulnerabilities. Once the highest priorities are defined, the county planning committee can identify specific mitigation initiatives for the plan that would eliminate or minimize those vulnerabilities.

Each proposed mitigation initiative is “prioritized” for implementation in a consistent manner by each participating organization using a common set of objective criteria. Each mitigation initiative proposed for incorporation into the plan is formulated and submitted to the committee for consideration.

Developing the Local Mitigation Plan

On receipt of a pending initiative, using the “peer review” process incorporated into the operating procedures, the FCHMPC first evaluates the merits of the proposal and the validity of the judgments and assumptions that went into its characterization, as well as considers its potential for conflict with other jurisdiction’s programs or interests. The committee also assures that the proposal is consistent with the goals and objectives

established for the planning period and confirms that it would not duplicate or harm a proposal submitted by another jurisdiction or agency.

During routine updates of the Florence County Hazard Mitigation Plan, each mitigation initiative included in the plan is evaluated to determine if it is still valid or should be removed from the plan, or whether its implementation should be a priority or deferred until a later time. This approach is considered to define the "priority for implementation" of a specific mitigation initiative, in the judgment of the planning group, intentionally to allow for the adjustment of implementation schedules to respond to changes in the community or environmental conditions expected in the near future.

Approval of the Current Edition of the Plan

On a periodic basis, the Florence County Hazard Mitigation Plan is to be submitted to the governing body of each of the participating jurisdictions for review, modification if needed, and approval or adoption. Following adoption or approval of the plan by each jurisdiction's governing body, the respective agencies and organizations will continue to implement the plan, to expand its scope, continue its analyses, and take other such continuing action to maintain the planning process. This includes action by the committee with assistance from the planning staff to routinely incorporate proposed mitigation initiatives into the plan, without the necessity to also continuously solicit the formal approval of the plan by the jurisdictions' governing bodies.

Approximately every five (5) years, a draft plan document such as this will be printed and submitted to the governing bodies for review and formal adoption or approval. The committee will assist the planning staff in preparing the draft plan.

This document is a draft plan that, pending finalization, will be submitted for approval. It is important to emphasize that this document represents a "snapshot" of the planning process and is prepared as a current document for use by the planning group, the community, and state and federal authorities. Upon receiving the "approval pending adoption" status from FEMA, Florence County and all participating jurisdictions will officially adopt the plan in a public meeting.

Implementation of Approved Mitigation Initiatives

Once incorporated into the Florence County Hazard Mitigation Plan, the agency or organization proposing the initiative becomes responsible for its implementation. This may mean developing a budget for the effort, or making application to state and federal agencies for financial support for implementation. The current status of implementation of mitigation initiatives incorporated into the plan is discussed in the next section.

In this plan implementation process, the committee continues to monitor the implementation status of initiatives, to assign priorities for implementation and to take other such actions to support and coordinate implementation of initiative by the involved organizations. In reality, it is the implementation of proposed initiatives, along with other actions by the organizations participating in the planning to maintain, refine and expand the technical analyses used in the planning, that constitutes the process to implement the mitigation plan.

Resolving Conflicts

In the event that a mitigation initiative proposed by a participating agency or organization is determined by the committee to be in conflict with one or more other initiatives in the plan or being submitted by others, the committee will take action to resolve the conflict. This will be done in the following manner:

- The participants proposing the conflicting mitigation initiatives will be notified of the findings of the committee and requested to make any such modifications to the proposals needed to resolve the conflicts,

- Should the participants be initially unwilling or unable to make such modifications to their proposed mitigation initiatives, the committee will schedule and hold a detailed discussion of the matter and involve both participants and any other interested parties,

- In the event that such detailed discussions do not result in voluntary action on the part of the participants making the proposals, the committee will formulate a recommendation to resolve the conflict. In making this recommendation, in its discretion, the committee may give preference to the proposal already incorporated into the strategy, to that first submitted to the committee for review, and/or to the proposal achieving the highest priority score.

Approval of Supplements to the Plan

When indicated, the committee may elect to approve issuance of a supplement to the currently approved mitigation plan. This supplement may contain one or more proposed mitigation initiatives that have been fully processed by the committee in accord with this procedure. Upon its issuance, the supplement and the mitigation initiatives contained therein are considered to be an integral part of the Florence County Hazard Mitigation Plan pending the approval of the supplement by the governing body of the jurisdiction or organization that proposed the initiatives.

Assessment of Recent Disaster Events

Within 60 days following a significant disaster or emergency event impacting the county or any of its municipalities, the committee will conduct an analysis of the event to capture any “lessons learned” for the purpose of continuing development of the mitigation plan. The committee, with the support of the planning staff, will classify the event based on the hazard category and assess the magnitude of the event and the community’s reaction to it. The direct and indirect damage, response and recovery costs will also be gathered or estimated. Any mitigation techniques in place in the impacted areas would be assessed for their apparent effectiveness in decreasing damages. The type and extent of the damages that were experienced would also be evaluated to determine the types of mitigation initiatives that should be incorporated into the plan to avoid similar losses during future hazard events of the same type. Based on this assessment, the committee would recommend to one or more of the participating agencies or organizations that they propose appropriate mitigation initiatives for incorporation into the next edition of the plan. In its discretion, the agency or organization could then propose such an initiative and transmit it to the committee for processing in accord with this procedure.

Florence County Hazard Mitigation Planning Committee

Kristy Burch, Florence County Emergency Management, Senior Coordinator

Shawn Brashear, Florence County Building and Planning, Director

Crys Hoge, Florence County GIS Department, Manager

Robbie Ervin, Florence County GIS Department, GIS Analyst

Mike Puckett, McLeod Regional Medical Center, EM Manager

Chief Michael King, Coward Police Department

Mayor Dianne Thomas, Town of Coward

Chief Donald Tarbell, Francis Marion University Public Safety

Capt. George Mack, Florence Police Department

Johnathan Atkinson, Florence County Planning, Floodplain Manager

Curt Whaley, Florence County Building and Planning, Inspector

Doug Nunnaly, Florence School District One, Safety Manager

Chief Howard Worrell, West Florence Fire Department

Jeff DeLung, City of Florence Fire Department, EM Manager

Jerry Dudley, City of Florence, Planning Director

Neal Vincent, Florence School District Two, Superintendent

Ryan Guerry, SCEMD, Hazard Mitigation Specialist

Chief John DeLung, Windy Hill Fire Department

Chief Ron Douglas, Johnsonville Police Department

Stephany Snowden, City of Lake City, Administrator

Mayor Michael Welch, Town of Olanta

Mayor Gene Gainey, Town of Pamplico

Mayor Terry Knotts, Town of Scranton

Mayor Darrick Jackson, Town of Timmonsville

Table 2-1 Plans, Ordinances and Programs

Planning/Regulatory Tool	Florence County	Coward	Florence	Johnsonville	Lake City	Olanta	Pamplico	Quinby	Scranton	Timmonsville
Hazard Mitigation Plan	X	X	X	X	X	X	X	X	X	X
Comprehensive Land Use Plan	X		X	X	X	X	X	X	X	X
Floodplain Management Plan	X		X	X	X		X	X	X	X
Storm Water Management Plan			X							
Emergency Operations Plan	X	X	X	X	X	X	X	X	X	X
Disaster Recovery Plan	X	X	X	X	X	X	X	X	X	X
Economic Development Plan	X		X	X	X	X	X	X	X	X
Historic Preservation Plan	X		X							
Zoning Ordinance	X		X	X	X	X	X	X	X	X
Building Code	X		X	X	X	X	X	X	X	X
Fire Code	X		X	X	X	X	X	X	X	X
National Flood Insurance Program (NFIP)	X		X	X	X		X	X	X	X
NFIP Community Rating System										

Florence County

Hazard Mitigation Plan

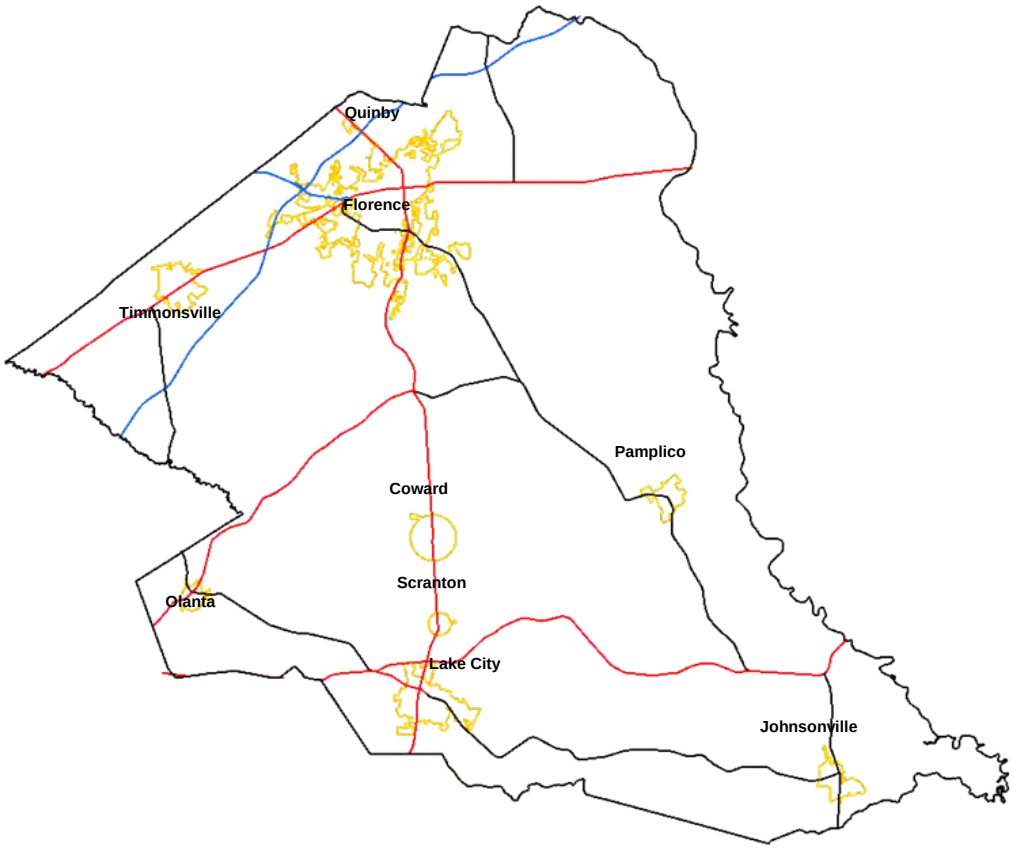
Section Three

COMMUNITY PROFILE

Geography and Topography

Florence County is located in the northeast portion of South Carolina in the Pee Dee Region which is within the coastal plain. The county is bordered on the north by Marlboro and Dillon Counties; on the east by Marion County; on the south by Williamsburg and Clarendon Counties; the west by Sumter, Lee and Darlington Counties. Florence County is approximately 804 square miles, of which 800 square miles is land and 4 square miles is water. This is a large county with generally flat terrain with an average elevation of 140 feet. The western and eastern boundaries of the County are extensive floodplains associated with the Lynches and Great Pee Dee Rivers, respectively. Other floodplains are narrow, except for significant portions of Lynches River, Black Creek and some portions of Jeffries Creek.

Figure 3.1 Orientation Map



Florence County's climate is humid and subtropical, with long, hot summers and short, mild winters. The subtropical climate arises from the combination of the state's relatively low latitude, its generally low elevation, the proximity of the warm Gulf Stream in the Atlantic, and the Appalachian Mountains, which in winter, help to block cold air from the interior of the United States. The average temperature range in Florence is 52.6ºF to 74.6ºF. The record low in Florence County was 0ºF in 1985 and the record high was 108ºF in 1954. Rainfall average is 46.11 inches with most precipitation occurring during the spring and summer. The most rainfall to occur within a 24 hour period was 13.25 inches in 1916. The average yearly snowfall is 0.6 inches with the largest snowfall within a 24 hour period occurring in 1973 with a total of 13.0 inches. This storm also holds the record for the most snowfall in Florence County from a single storm with a total of 17 inches.

Population and Demographics

As of the 2010 Census, Florence County has a population of 136,885. The 2000 Census reported a population of 125,761 which was a growth of 8.8 percent. The 1990 Census reported a population of 114,344 which was a growth of 9.9 percent. This shows a steady growth of 9.4 percent within the past 20 years which is charted on ***Figure 3.2 Population Growth***. ***Table 3.1 Population for Participating Jurisdictions*** shows population from 1990, 2000 as well as 2010. The 2010 Census shows that, of the nine incorporated municipalities in Florence County, Scranton, Quinby, Coward and Olanta have a population of less than 1000. While the municipalities of Timmonsville, Pamplico and Johnsonville show a population from 1000 to 3000, and Lake City's population is between the ranges of 5,000 to 10,000. The largest jurisdiction is the City of Florence with a population level greater than 30,000. ***Figure 3.3 Population Percentages*** shows a visual breakdown of these populations.

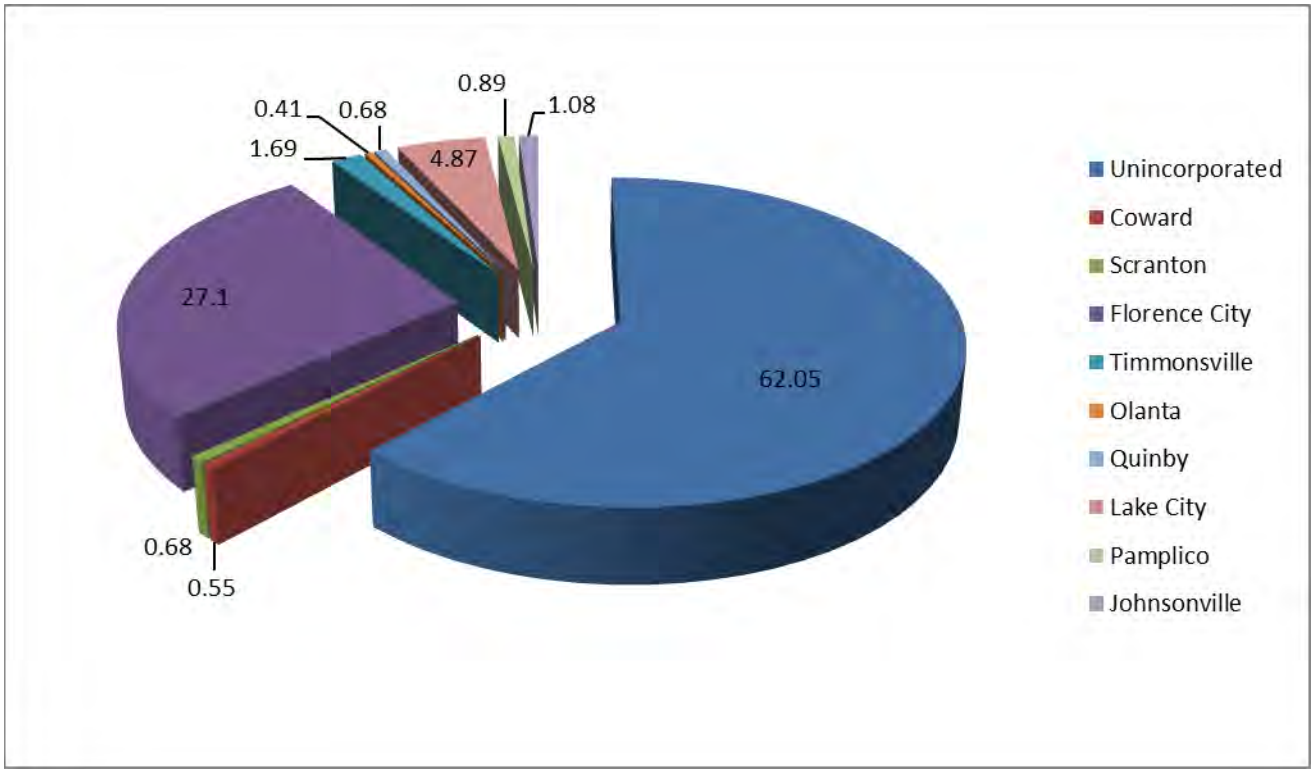
Figure 3.2 Population Growth

CENSUS YEAR	TOTAL COUNTY POPULATION	PERCENT CHANGE FROM PREVIOUS CENSUS YEAR
1890	25,027	N/A
1900	28,474	13.77%
1910	35,671	25.27%
1920	50,406	41.30%
1930	61,027	21.07%
1940	70,582	15.65%
1950	79,710	12.93%
1960	84,438	5.93%
1970	89,636	6.15%
1980	110,163	22.90%
1990	114,344	3.79%
2000	125,761	9.98%
2010	136,885	8.84%

Table 3.1 Population for Participating Jurisdictions

Population for Participating Jurisdications				
Jurisdiction	1990 Census Population	2000 Census Population	2010 Census Population	% Change 2000-2010
Florence County	114,344	125,761	136,885	8.85%
Unincorporated	69,581	81,116	84,949	4.72%
Coward	532	650	752	15.60%
City of Florence	29,813	30,248	37,056	22.50%
Johnsonville	1,415	1,418	1,480	4.37%
Lake City	7,153	6,478	6,675	3.04%
Olanta	687	613	563	-8.88%
Pamplico	1,314	1,139	1,226	7.09%
Quinby	865	842	932	9.65%
Scranton	802	942	932	-1.07%
Timmonsville	2,182	2,315	2,320	0.21%

Figure 3.3 Population Percentages



Based on the 2010 Census the median age for Florence County is 37.2 years. The percentage of the population under the age of 5 is 6.9 percent while ages 65 and over account for 12.7 percent of the population. The age groups with the largest population totals are 45 to 54 years with 14.4 percent; 35 to 44 years with 13.4 percent; and 25 to 34 years with 12.8 percent.

Also according to the 2010 Census Florence County's population is 56.5 percent white; 40.7 percent black or African American; and 2.8 percent for all other races. 2.1 percent of the population reported being of Hispanic origin.

In 2010, there were 51,636 households in Florence County with the average size of 2.54 people. While families made up 69.9 percent of the households, which includes both married-couple families at 44.8 percent and other families at 25 percent. Nonfamily households accounted for 30.2 percent in Florence County and of those 26.3 percent were householders living alone.

Of the 64.7 percent of the population that is 25 years old or older 19.2 percent have no diploma or its equivalent. 34.2 percent of the population are high school graduates and 46.7 percent went on to attend college. Of those 28.8 percent received various levels of degrees. Florence County has a median income of $40,487.00 while 18 percent of the population lives below the poverty level.

Florence County has 57,406 housing units and of those there are 61.1 percent single-unit structures. 17.6 percent were multi-unit structures and 21.3 percent were mobile homes. There were 34,112 owner-occupied housing units with a median value of $108,400.00. The age distribution is as follows:

- 2005 – later 3.9 %
- 2000 – 2004 9.2%
- 1990 – 1999 23.0%
- 1980 – 1989 15.8%
- 1970 – 1979 19.3%
- 1960 – 1969 12.2%
- 1950 – 1959 7.7%
- 1940 – 1949 4.1%
- 1939 or earlier 4.8%

Based on the above information Florence County has a population average of 171.14 persons per square mile as well as 64.56 housing units per square mile.

Figures 3.4 Population Totals show the population distribution at census tract level, based on the 2010 Census. Social vulnerability scores are derived from socioeconomic characteristics of each jurisdiction including age, gender, population, race, income, and the number of mobile homes found in the county. This score indicates the potential for harm to individuals and damage to properties that are more vulnerable than other groups because of socioeconomic conditions. For example, people under age 19 or over age 64 are more vulnerable than the general population due to the need for special assistance should an evacuation be required in an emergency.

Figure 3.4 Population Totals

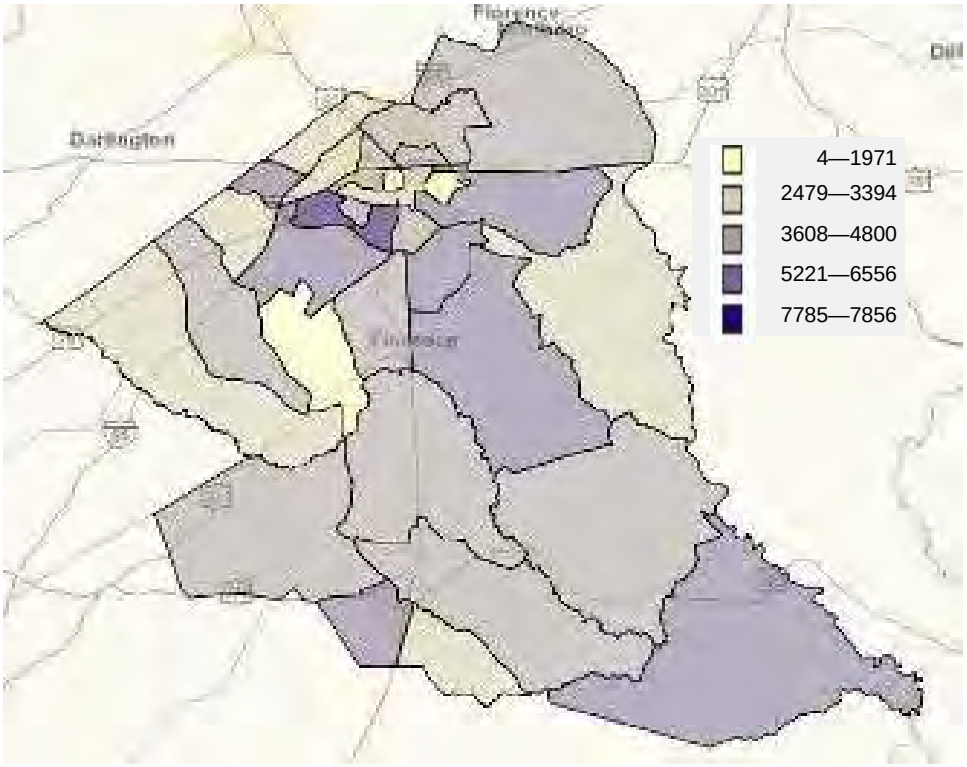


Figure 3.5 Elderly Population Distribution shows the distribution of elderly population density. ***Figure 3.5 Elderly Population Distribution***

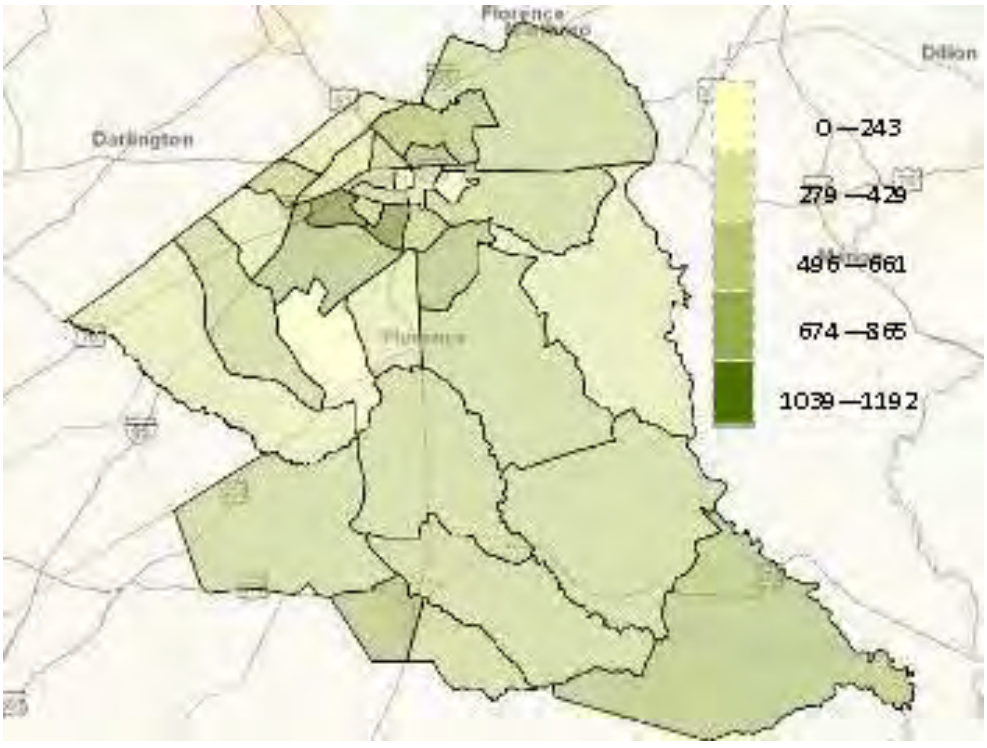
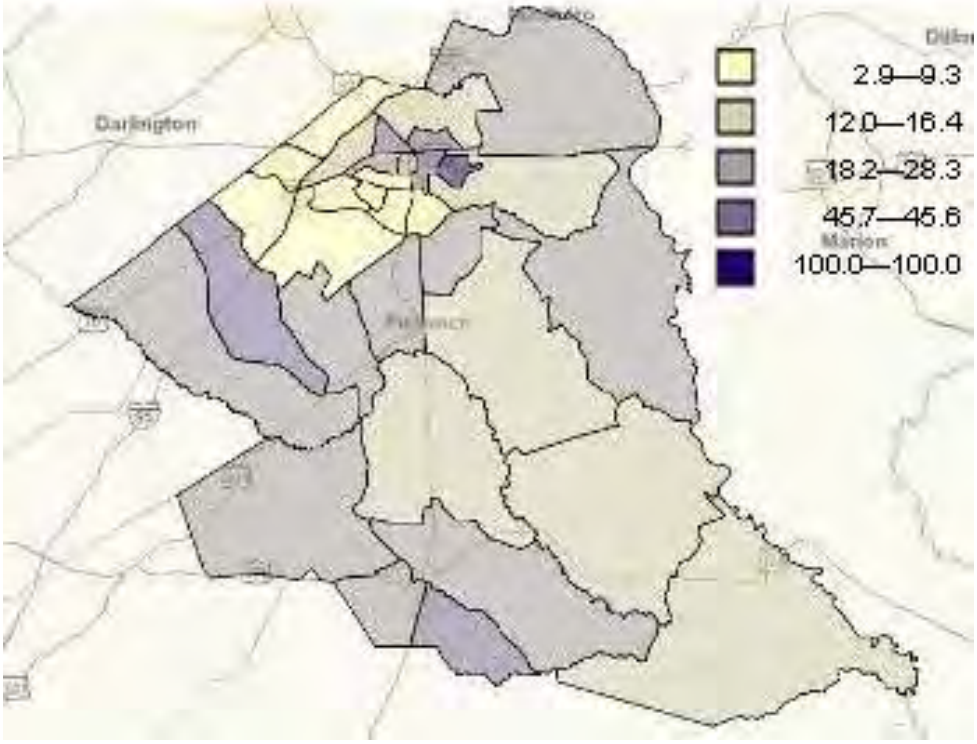


Figure 3.6 Percentage Below Poverty Level shows the distribution of low income population density by census tract for South Carolina.

Figure 3.6 Percentage Below Poverty Level



Utilities and Infrastructure

Transportation

The intersection of Interstate 95 and Interstate 20, which is the half-way point between NYC and Miami, is within Florence County. There are also four other main highways which traverse the county and serve as connectors: Highway 76 connects Florence to Chattanooga, Tennessee while Highway 301 spans to Florida. Highway 52 connects to Charleston, South Carolina or Canada to the north. Highway 378 will direct traffic to Columbia, SC. In general, Florence County has 1,491.87 miles of paved roads with almost 90% being two lanes. In addition, there are over 300 miles of unpaved roads. Florence County is host to a major rail yard for both CSX and Amtrak. The Florence Regional Airport is located on Highway 76/301 in the Greater Florence Area and averages approximately 15 flights daily. Lake City Municipal Airport is located at C.J. Evans field in Lake City and Timmonsville is home to Huggins Memorial Airport.

Utilities

Florence County is served by eight public water/wastewater entities with the City of Florence being the primary provider. The City of Johnsonville, City of Lake City, Town of Coward, Town of Olanta, Town of Pamplico, and the Town of Scranton operate additional systems. Electrical suppliers in Florence County are Pee Dee Electric Cooperative, Inc. and Duke Energy, Inc. Natural Gas is in most portions of Florence County through SCE&G, a SCANA Company.

Community Facilities

The Florence County Library System is headquartered in the City of Florence at the Doctors Bruce and Lee Foundation Library and has five branch libraries located throughout the County. Additional libraries are found at higher education facilities. Florence-Darlington Technical College includes a library on its main campus and a branch library in the downtown Florence campus. Francis Marion University has a 77,000 square foot library on its campus.

The Florence center opened in 1993 and is the largest indoor venue for entertainment, conventions and civic events in the Pee Dee. The building's 50,000 square feet of multipurpose space is the largest exhibition facility in northeast South Carolina. It includes a 10,000 seat arena, 14,500 square foot Exhibit Hall and meeting Rooms. It is conveniently located near the I-95 and I-20 interchange.

Florence Little Theatre's new facility opened September 2008 and is no less than state-of-the art. The 35,000 square foot facility seats approximately 396 persons and this cultural facility is only one of many efforts that will aid in the revitalization of downtown Florence. The Francis Marion University Center for Performing Arts opened in 2011 in downtown Florence. A multipurpose theatre provides seating for 839 persons. The facility is used for performances, programs and exhibits while also including an Academic Wing for the Department of Fine Arts.

Active and passive recreational opportunities are important for maintaining and increasing the quality of life for residents. Altogether, Florence County contains more than 1400 acres of park land and green space.

Florence County has two major river systems: the Great Pee Dee River and the Lynches River. Both are designated by the State Department of Natural Resources as State Scenic Rivers. Numerous river landings in Florence County provide access to miles of scenic waterways. Florence County has a maintenance agreement with the Department of Natural Resources for seven (designated with an asterisk,*) of the following boat landings:

1. SC Highway 327 Boat Ramp on Black Creek*
2. US Highway 52 Boat Ramp on Lynches River (New Hope)*
3. Odell Venters on Lynches River (Witherspoon's Ferry)*
4. Bluff Road on the Great Pee Dee River (Dewitt's Landing)*
5. Allison Landing on the Great Pee Dee River (Ellison's or Poston Landing)*
6. Mill Branch Road(Red Bluff) on the Great Pee Dee River
7. Persimmon Bluff on Lynches River
8. Glen's Bluff (Ginn's Bluff) on Lynches River
9. Bartell Landing on Lynches River
10. N. Pitch Landing (Pitt's) on Lynches River
11. Mack's Lake on Lynches River
12. Sandstone Road Landing(Smith) on Lynches River
13. Riverside Cemetery Road (River Rest) is located on Lynches River
14. Lee Landing on Lynches River

15. Wicklow Road (Bass Bridge)on Lynches River
16. Courtney Point on Lynches River
17. Cockfield Landing on Lynches River
18. Farrell Drive (Anderson Bridge) on Lynches River
19. Jeffords Road (High Bank) located on Lynches River (High Bank)
20. Bostick's Landing on Great Pee Dee River*
21. Pine Bluff Road(Poston Landing) on the Great Pee Dee River
22. Jimmy Road (Half Moon) Landing Road on Lynches River*
23. New Landing Road on Lynches River
24. Bennie Landing Road on Lynches River
25. Indigo Landing Road on Lynches River
26. Bunk Road on Lynches River
27. Catfish Road on Lynches River
28. Syrup Mill Road (Buster Lynch Landing)
29. Eaddy Landing Road on Lynches River

Education

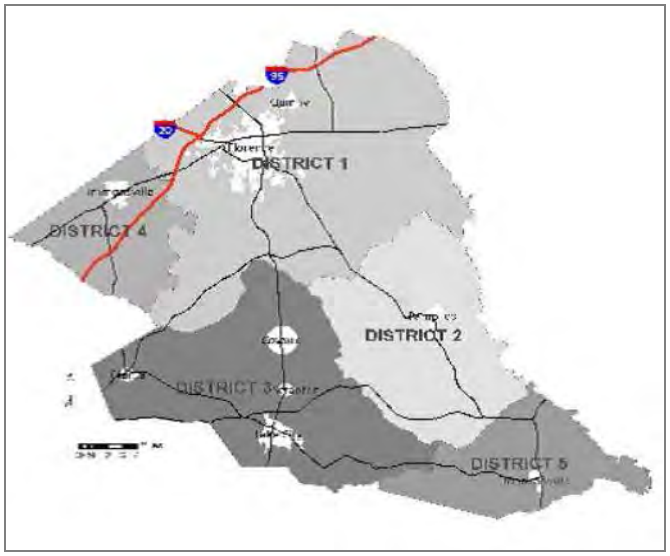
Florence County Schools have been accredited by South Carolina Independent School Administration, South Carolina State Department of Education and the Southern Association of Colleges and Schools. Florence County includes public and private schools. Five public school districts comprise the Florence County Public School System. ***Table 3-2 Florence County School Districts*** reflects student, administration, and teacher statistics by district for 2006-2007.

Table 3-2 Florence County School Districts

School District	Attendance Rate	Annual Dropout Rate	Total Teachers	Total Students	Students per Teacher
One	94.7	1,287	1,138	16,438	14.4
Two	94.4	96	81	1,168	14.4
Three	94.7	305	238	3,482	14.6
Four	98.3	102	51	678	13.3
Five	94.4	118	85	1,472	13.4
Total	95.3	1,908	1,593	23,238	14.6

The following map, ***Figure 3.7 Florence County School Districts***, shows the boundaries of each School District and its respective district number. A summary of each District's facilities follows the countywide map.

Figure 3.7 Florence County School Districts



Florence County School District One is the largest of the five districts in land area and student population and serves the City of Florence, the Town of Quinby and the community of Effingham. Florence District One owns a total of 27 facilities and two vacant properties. These facilities include fifteen elementary schools, three middle schools, three high schools, one administration building, Dr. R. M. Beck Center (Carver Community Center), one career center, Poynor School, which serves as a combination of an administration building and adult center.

Florence County School District Two serves the Towns of Pamplico and Hannah. District Two includes Hannah-Pamplico High School and Hannah-Pamplico Elementary/Middle School. The District Two office is located between these two schools.

Florence County School District Three serves Lake City, the Towns of Coward, Scranton and Olanta. There are eight facilities within this district which include one high school and seven elementary/middle schools.

Florence County School District Four serves the Town of Timmonsville and the Sardis and Cartersville Townships. In 2000, the District built a new K-12 educational complex consolidating four older schools.

Florence County School District Five educates the children of the City of Johnsonville, Vox, Prospect, and Kingsburg communities. The facilities include Johnsonville's High School Vocational Center and a primary elementary school as well as the Florence School District Five Campus Health Center.

There are also nine private schools across the county with a population of approximately 2125.students.

Francis Marion University is a four year college with one of the most diverse student bodies in the South and enrolls nearly 4,000 students. They offer undergraduate and graduate degrees in over 30 areas of study.

Florence-Darlington Technical College is a two year school that offers quality education in more than 85 fields of study. Among the special services and programs at the main campus are the School of Welding and Cutting, the Advanced Welding and Cutting Center, the Caterpillar Dealer Academy, and a Cisco Systems Training Laboratory. Southeastern Institute of Manufacturing and Technology (SiMT) is located at Florence Darlington Technical College. SiMT provides customers with strategic training and manufacturing technology solutions that maximize workforce productivity in advanced manufacturing environments. They offer a variety of training in manufacturing areas (including quality, machining, rapid prototyping, fluid power, robotics, electronics, maintenance, and programmable logic controls), health, safety, computing, networking, environmental, biotechnology, business, management, supervision, and more.

Medical

Florence County is included in the Pee Dee Health District, one of the Department of Health and Environmental Control (DHEC) health districts in the State of South Carolina. Two Health District facilities exist in Florence County in addition, DHEC maintains Home Health Care Services which provides health care to people who are confined to their homes because of illness or injury. In addition, the Florence County Environmental Services Department includes environmental services such as animal control, litter control, mosquito control, inmate litter removal crews, and the Adopt-A-Highway program. Vital Records are also a component of the DHEC. It provides for the registration, correction and certification of vital events including live births and deaths.

McLeod Regional Medical Center is one of the largest employers in the Pee Dee with more than 3,000 employees. In addition, this medical center is a 371-bed center and region wide, McLeod Health is associated with more than 375 physicians. McLeod offers many services including the Heart and Vascular Institute, cancer center, women's services, children's hospital, Center for Advanced Surgery, radiology, occupational health, surgery, ophthalmology and ophthalmologic surgery, diabetes, emergency, urgent care center, home health, Hospice and sports medicine. McLeod is also the only teaching hospital in this region. Furthermore, nearly 50 percent of McLeod's inpatients are referred from outside Florence County to receive specialty care.

Carolinas Hospital System is a 420-bed hospital with over 300 specialized physicians. Carolina's Hospital has eleven operating suites including one for open heart surgery. Carolina's provides diagnostic services, women's health services, cancer services, cardiac care, rehabilitation services, emergency/trauma services and community wellness facilities and programs.

Lake City Community Hospital is a 48 bed hospital. The medical staff consists of family practitioners, emergency room physicians, general surgeon, radiologists, orthopedists, internist, and four physician assistants.

Employment and Industry

In the last decade, changes within the County and largely on the national scale have had an influence in the types of jobs available. Florence County is significantly affected by transformations in the economy due to evolving technology, a growing global market and the increasing level of education in the workforce. Education is a basic factor in achieving the best results for the economy. Computer literacy is critical in the market today due to the sophistication of machinery as well as a means of communication.

Significant biomedical and financial businesses are located in Florence County either in the downtown area or I-95 and I-20 connectors. Specifically, two hospitals and a major pharmaceutical company as well as banking regional offices and many large local banking services are locally established. Service industries are the biggest employers in Florence County with two hospital systems employing the most people. McLeod Regional Medical Center and Carolina's Hospital System employed over of 6,500 workers in 2012. While the hospital systems seem to be two of the largest employers, there is still a diversity of manufacturers in the County with well-known national names such as Ruiz Foods, General Electric, Honda, Johnson Controls, NanYa and Vulcraft. Florence County has been the location of numerous large-scale corporate establishments. The location of Honda to Timmonsville in 1997, along with the additional companies such as QVC and expansions announced by Johnson Controls and Institution Food House will increase the number of jobs over the next few years. In 2008, Pepsi Cola Inc. and Ruiz Foods new operations at the Touchstone Energy Commerce City. Of the population of 105,136, age 16 years and over, 65,821 are in the labor force and there is currently an unemployment rate of 3.5 percent.

Table 3.3 Population Percentages represents the population percentages and projections for Florence County from 1970-2030. The population age 0 to 17 shows a decrease of 13.1percent from 1970 to 2030 while the population 65 and over shows an increase of 12.71percent. The population white non-Hispanic decreases from 60.53 percent in 1990 to 49.69 percent in 2030. The population black non-Hispanic increases from 38.65 percent in 1990 to 45.87 percent in 2030. The Hispanic population (any race) shows a projected increase to 2.42 percent in 2030.

Table 3.3 Population Percentages

	1970	1980	1990	2000	2015	2030
Percent of Population Age 0-17	38.84%	32.11%	28.35%	25.76%	25.98%	25.74%
Percent of Population Age 65 +	6.94%	8.68%	11.08%	11.82%	14.98%	19.65%
Percent of Population White Non-Hispanic	n/a	n/a	60.53%	58.50%	53.62%	29.69%
Percent of Population Black Non-Hispanic	n/a	n/a	38.65%	39.44%	43.16%	45.87%
Percent of Population Hispanic (Any Race)	0.14%	0.42%	0.44%	1.12%	1.69%	2.42%

Table 3.4 Largest Employers lists the largest employers for Florence County as of 2012. Its climate is a contributing factor as well as the southeastern location between New York and Miami. Industry, new and expanding businesses have invested more than $1.1 billion since 1997, creating well over 6,000 new jobs.

Table 3.4 Largest Employers

Employer	Business Sector	Number of Employees
McLeod Regional Medical Center	Medical	5000
Florence School District One	Education	2302
Carolinas Hospital System	Medical	1850
Assurant Specialty Property	Insurance Services	1300
Honda of South Carolina	Manufacturing	1100
Blue Cross Blue Shield	Insurance Services	1100
McCall Farms	Manufacturing	1000
Nanya Pastics	Manufacturing	900
Florence County Government	Government	800
Wellman Plastics Recycling	Manufacturing	720

Land Use

Based on information obtained from the Florence County Comprehensive Plan dated 2018, Florence County land use has changed dramatically. Florence County, a landscape once dedicated to tobacco and a growing railroad in the mid- to late- 1800's, is now represented by a diverse amalgam of uses. Agriculture continues to dominate the County by sheer land area, but, healthcare, manufacturing, new residential subdivisions, commercial ventures and industrial complexes now dot urban and suburban locales across the County's 800 square miles. The Florence County strategy of the future land use emphasizes sustainable development throughout the county. Balancing economic and social development with the natural resource conservation and renewal for future use is the basis of sustainable development. Currently Florence County has 171,388 acres of farmland which is 34 percent of total land area. There are 249,099 acres of forestland which is 57 percent of total land area as well as 225,057 acres of wetland that comprises 44 percent of Florence County. There is also 14,466 acres of land which is commercial developed that is 2.8 percent of total land area.

To maintain a healthy community while providing quality services for our residents, businesses and visitors, a diversity of land uses should be provided. These land uses include a variety of residential densities along with commercial, industrial, schools, parks, a flood hazard district and other community components. The goal of this element is to categorize land uses in a geographic manner to increase the quality of life for Florence County residents while preserving the County's natural resources. While Florence County and its jurisdictions have increased population continuously with each census; the majority of this population and existing populations are moving away from or constructing homes to mitigate future occurrences of identified hazards.

Future Land Use Designations and Objectives

 Residential Preservation (RP) – Protect and sustain existing low density single-family residential areas, including property values and amenities, and provide for the growth of suburban or developing rural areas consisting of single-family homes and their accessory uses. (Zoning Districts Permitted: R-1, R-2, R-3, PD)

 Variable Residential (VR) – Protect and sustain existing higher density single-family, multi-family, or mixed-use residential areas, including property values and amenities, and provide areas for growth of various housing types and their accessory uses in urban and suburban settings. (Zoning Districts Permitted: R-3, R-4, R-5, PD)

 Rural Preservation (RUP) – Protect and sustain existing rural uses, including single-family homes and corresponding accessory uses, as well as agrarian uses, typically in an undeveloped and/or agricultural setting. (Zoning Districts Permitted: RU-1, RU-2, PD)

 Transitional Growth and Preservation (TGP) – Protect and sustain existing commercial areas, including property values and amenities, and provide areas along important corridors or at key community points that are expected to have increasing economic significance. (Zoning Districts Permitted: B-1, B-2, RU-1, PD)

 Commercial Growth and Preservation (CGP) – Protect and sustain existing commercial areas, including property values and amenities, and provide areas along important corridors or at key community points that are expected to have increasing economic significance. (Zoning Districts Permitted: B-3, B-4, PD)

 Industrial Growth and Preservation (IGP) – Protect and sustain existing industrial areas, including property values and amenities, and provide areas along important corridors or in emerging industrial locations that are targeted for major economic development. (Zoning Districts Permitted: B-5, B-6, PD)

 Suburban Development (SD) – Provide areas in suburban settings that are expected to have increasing community significance with opportunities for residential, commercial, and institutional uses that enhance the area as a whole. (Zoning Districts Permitted: R-2, R-3, R-4, B-1, B-2, RU-1, PD)

 Urban Development (UD) – Provide areas in urban settings that are expected to have increasing community significance with opportunities for mixed residential, commercial, and institutional uses that enhance the area as a whole. (Zoning Districts Permitted: B-4, PD)

 Public Facilities (PF) – Provide areas that local, state, or federal government maintained areas for public interest uses including, but not limited to water and sewer facilities, offices, recreation facilities, law enforcement, emergency response facilities and schools. (Zoning District Permitted: All Districts)

 Flood Hazard District (FHD) – This is the 100-year Flood Zone area as established by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) and is pursuant to compliance with the National Flood Insurance Program (NFIP) and to maintain a Community Rating System (CRS). This district will be updated following any updates to the FEMA FIRM maps. (Zoning Districts Permitted: All zoning types pending special review pursuant to Florence County Code of Ordinances: Chapter 30, Article II, Division 4)

The following maps depict the locations and extent of the Future Land Use categories. In addition to maps, some municipalities have plans to revitalize downtowns. This information is also presented. Three municipalities are outside of the county's consolidated planning effort. As a whole, the Florence County Future Land Use map displays predominant trends in agriculture and flood hazard categories denoted by municipal and industrial uses. Non-participating municipalities are shown without designations. The following maps will represent the extent of the future land use designations with the first map an overview of Florence County. To depict greater detail, municipalities are numbered and referenced with ***Table 3.5***:

Table 3.5

Municipality	Figure 7-15 map number(s)	Reference Figure ID
Coward	9	Figure 3.9
City of Florence	1	Figure 3.10
	2	Figure 3.11
	3	Figure 3.12
	4	Figure 3.13
	5	Figure 3.14
Johnsonville	13	Figure 3.15
Lake City	12	Figure 3.16
Olanta	8	Figure 3.17
Pamplico	10	Figure 3.18
Quinby	6	Figure 3.19
Scranton	11	Figure 3.20
Timmonsville	7	Figure 3.21

Figure 3.8 Florence County Future Land Use

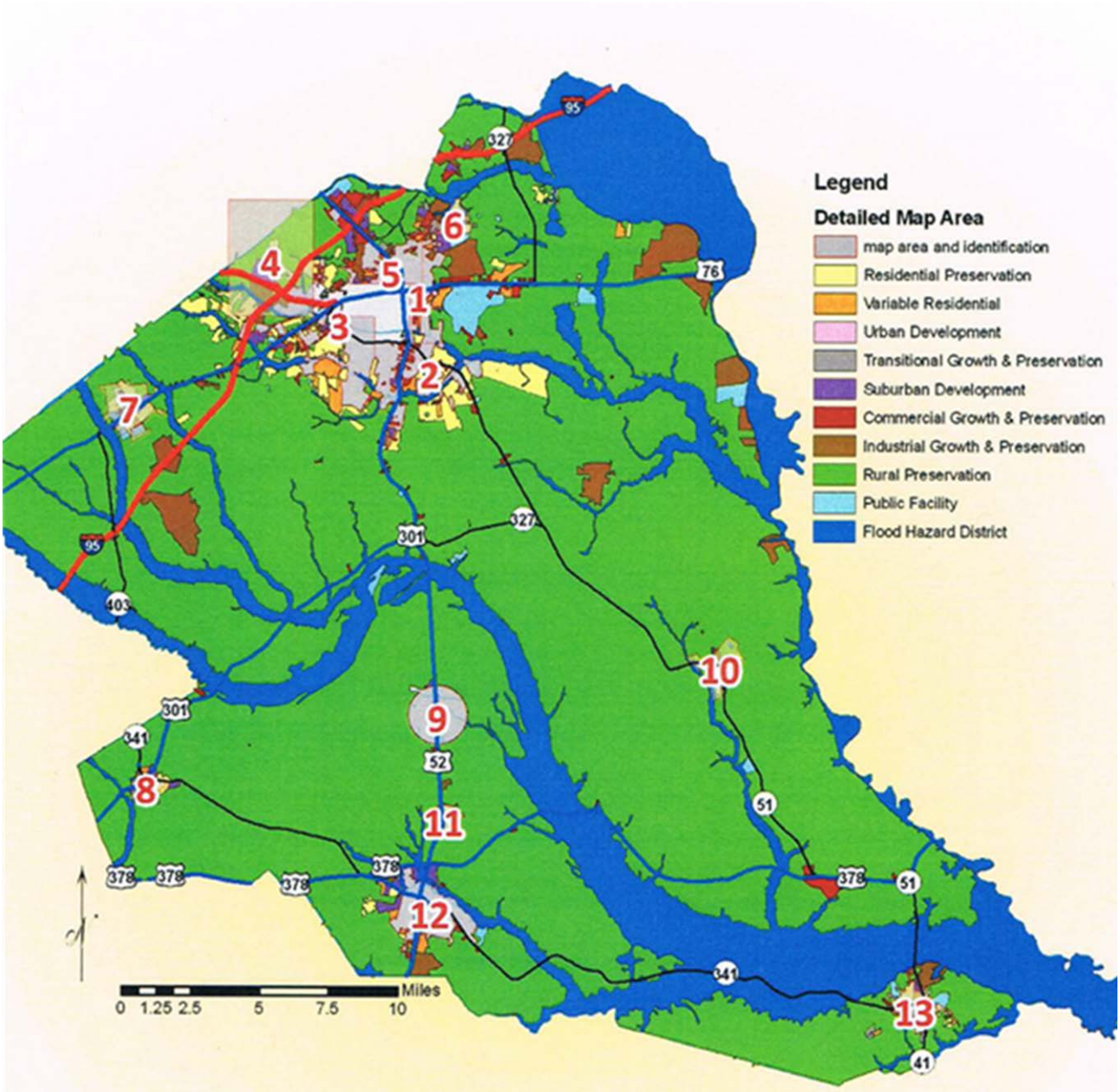


Figure 3.9 Coward Future Land Use

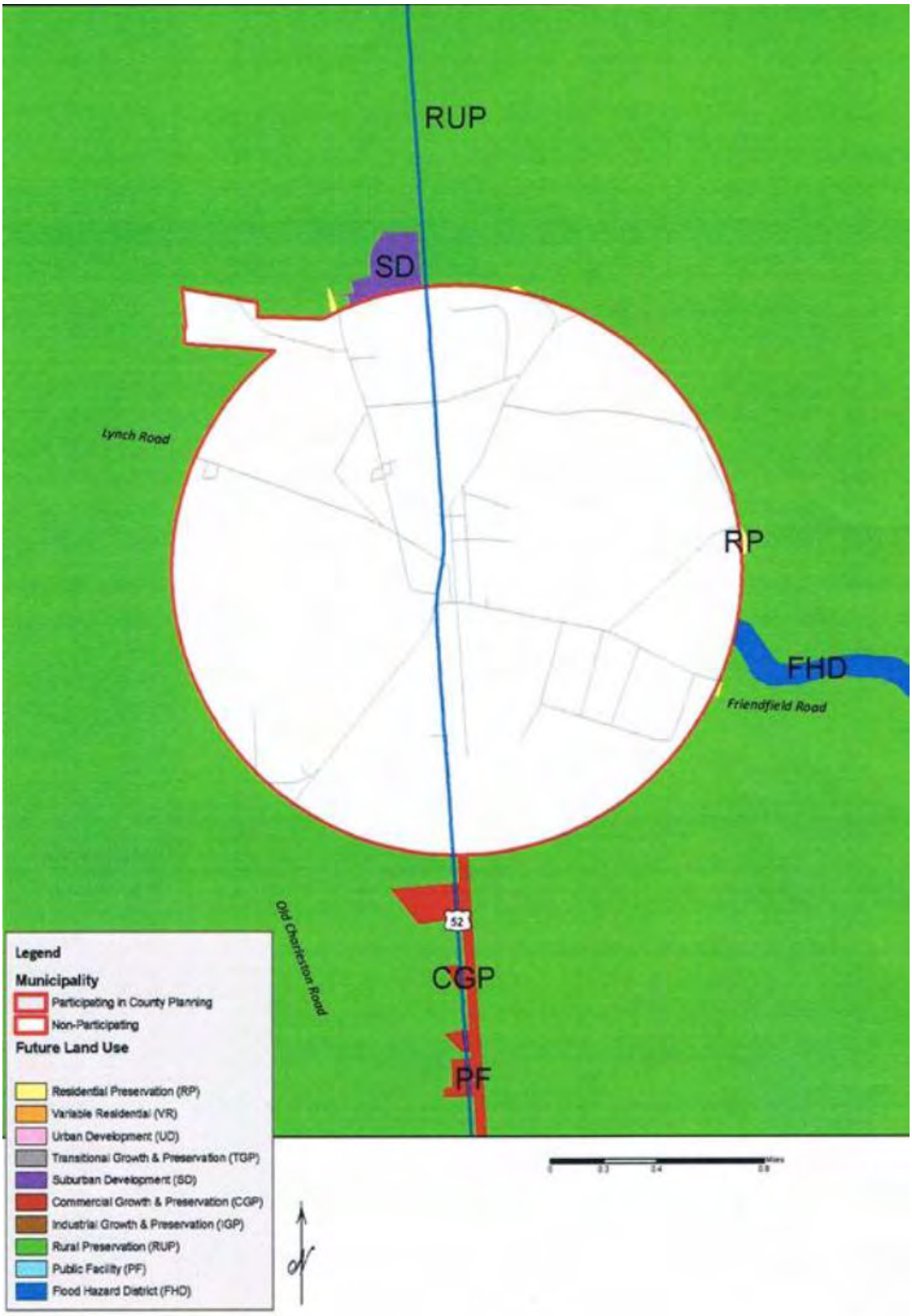


Figure 3.10 City of Florence Future Land Use 1

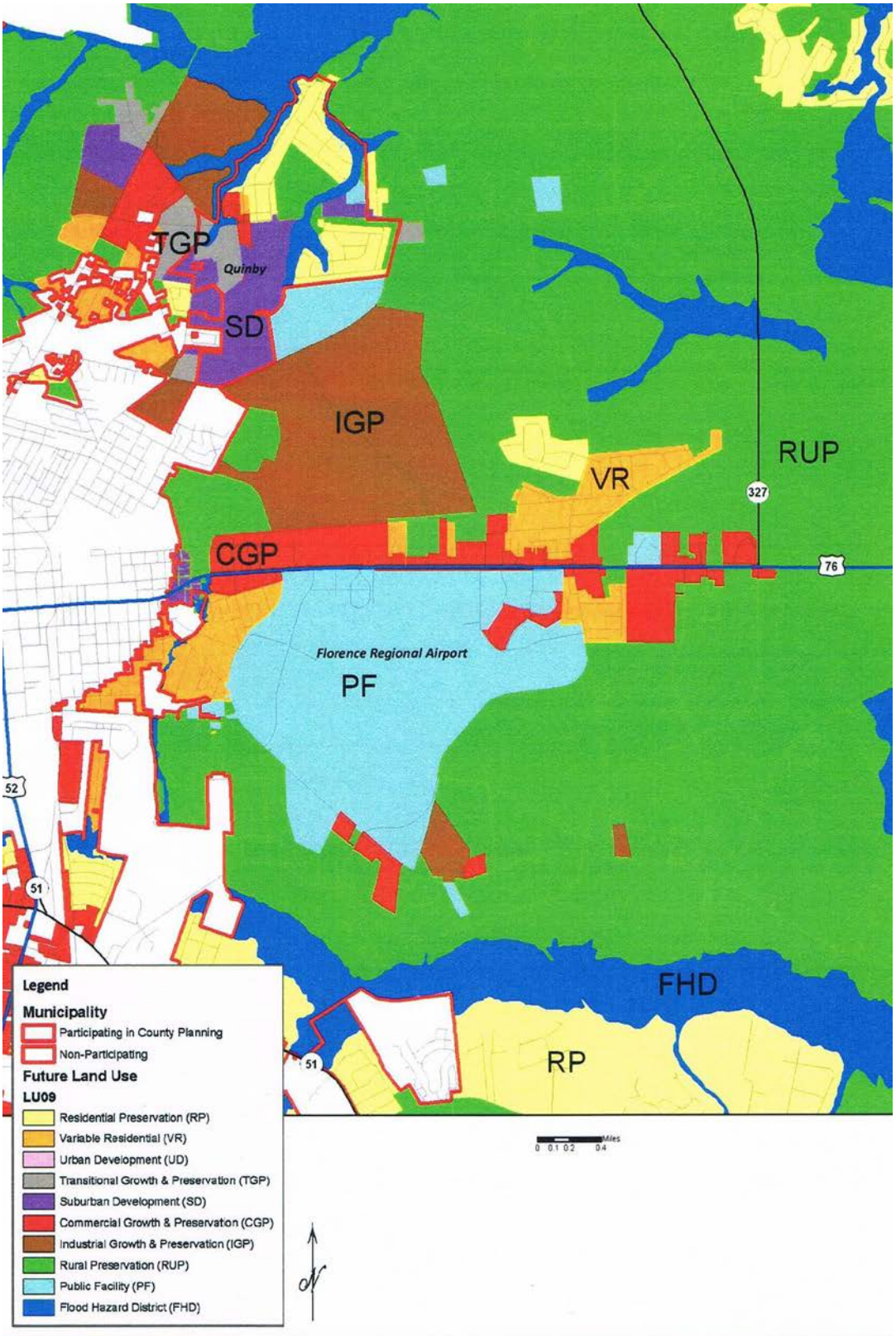


Figure 3.11 City of Florence Future Land Use 2

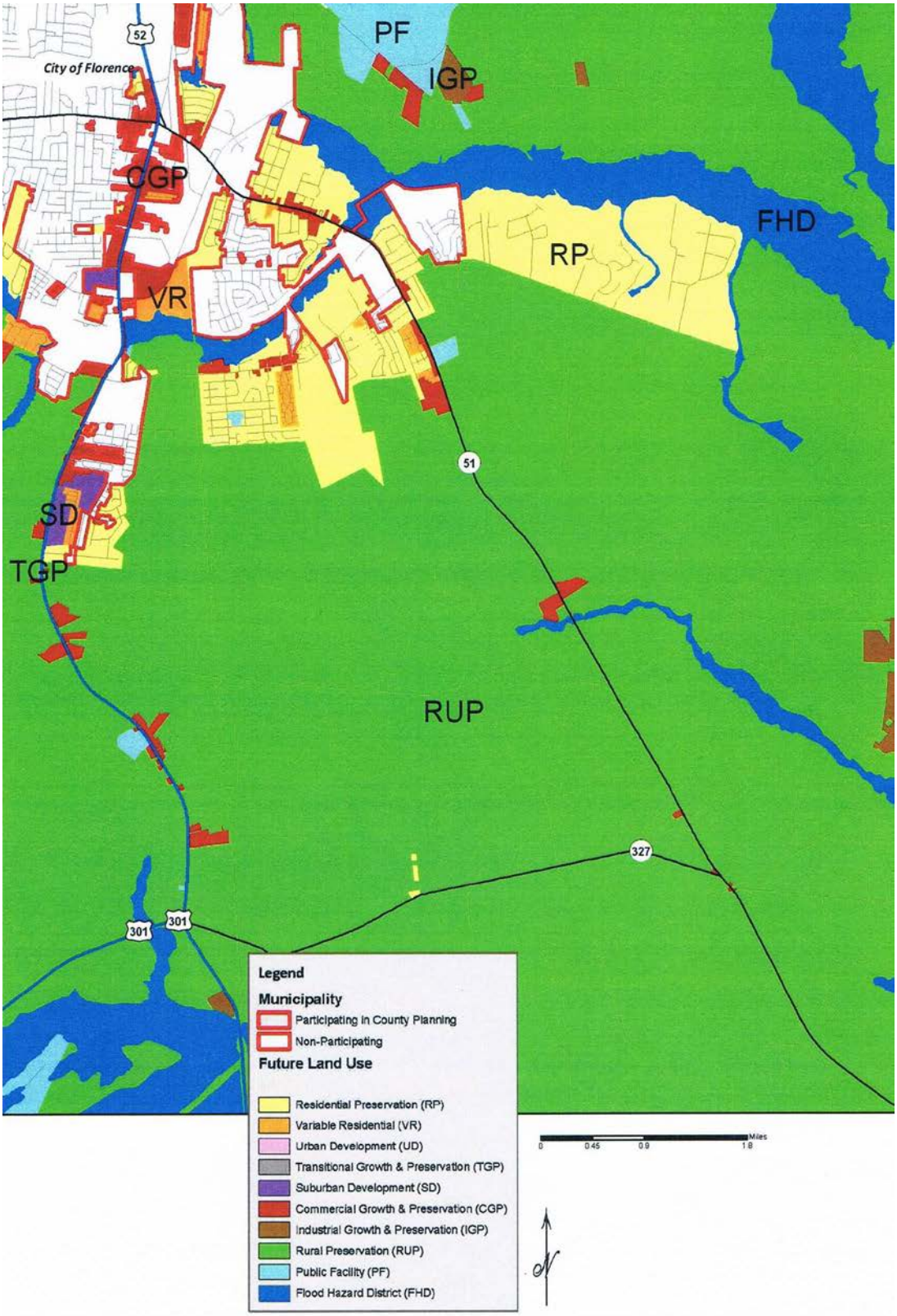


Figure 3.12 City of Florence Future Land Use 3

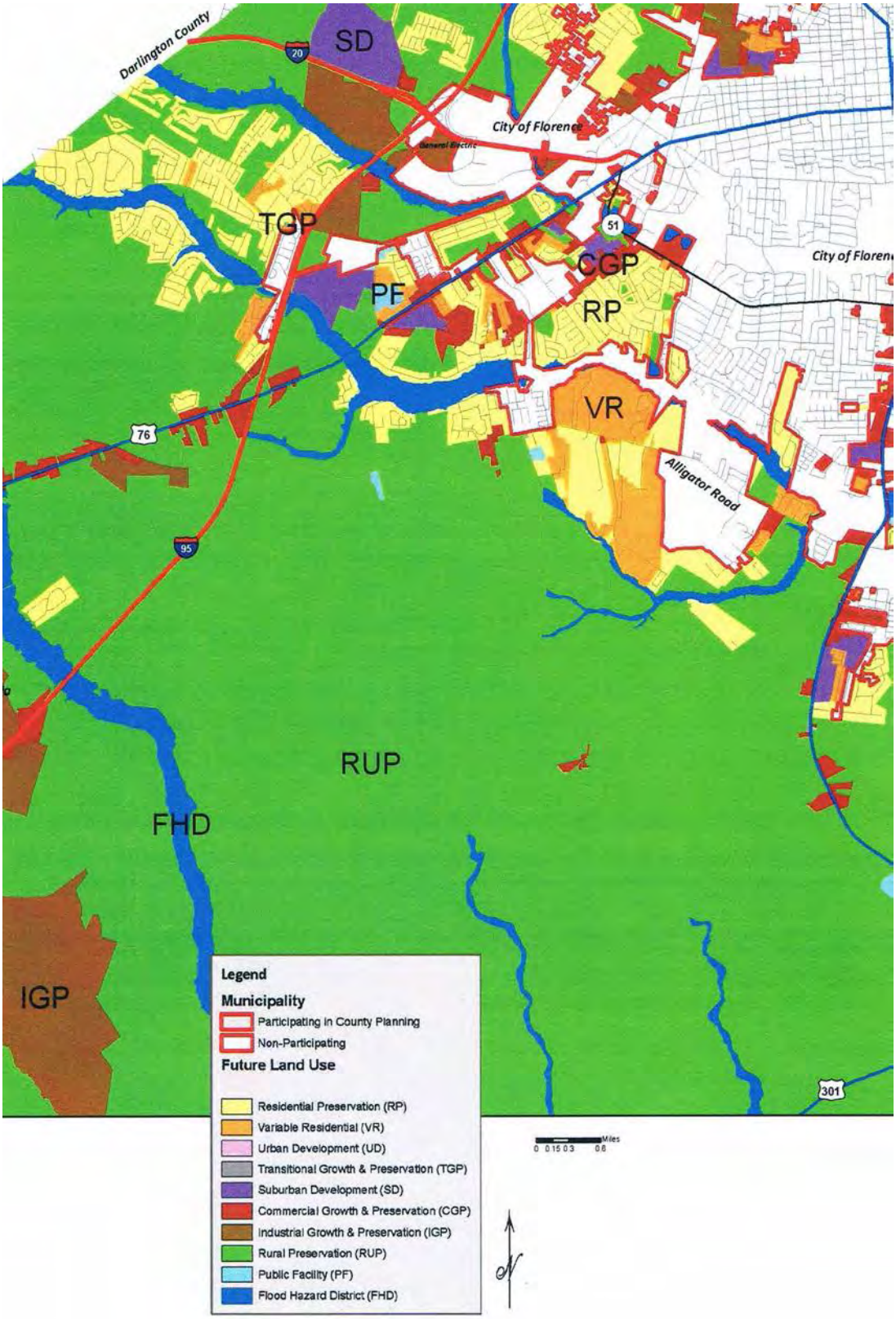


Figure 3.13 City of Florence Future Land Use 4

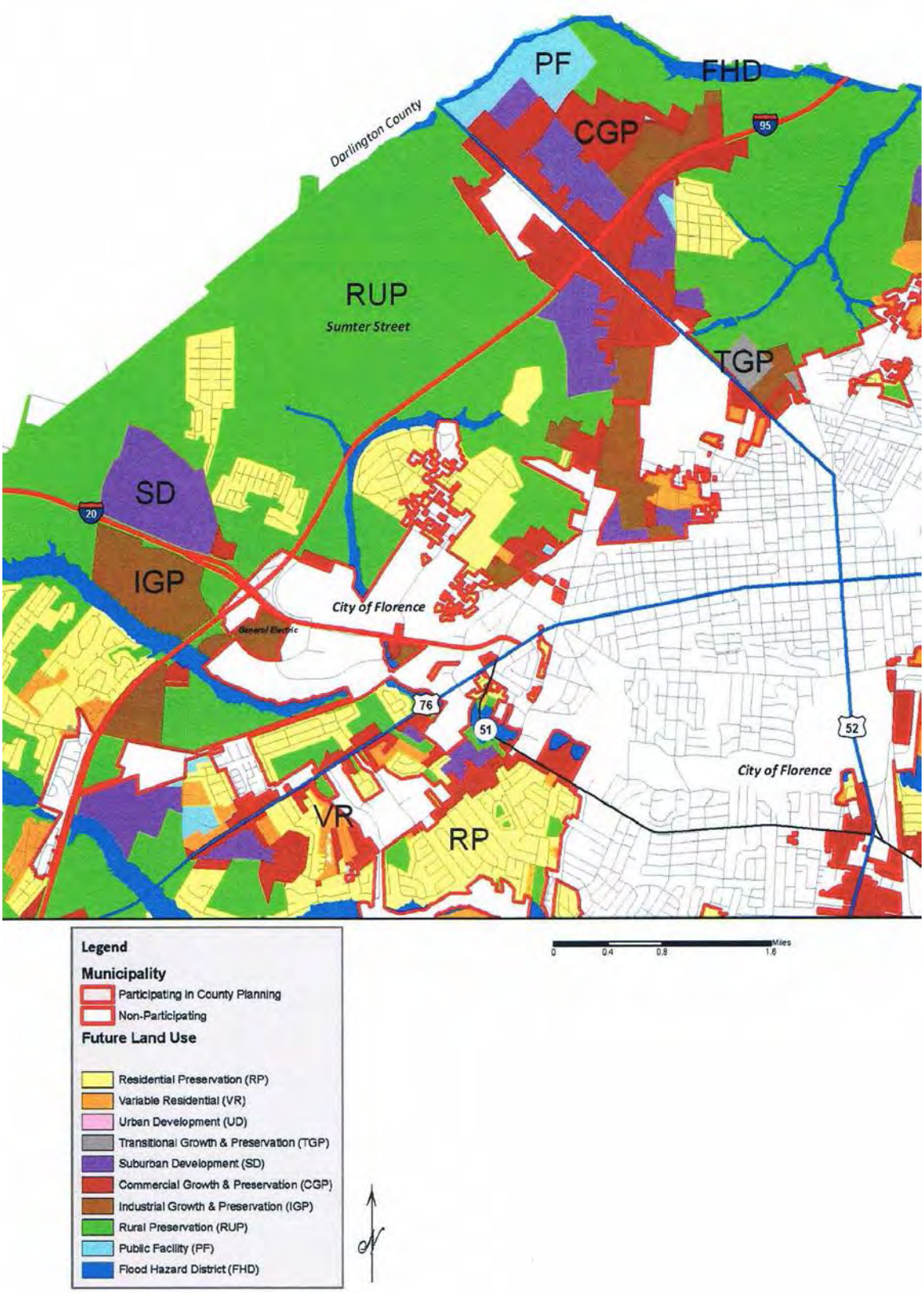


Figure 3.14 City of Florence Future Land Use 5

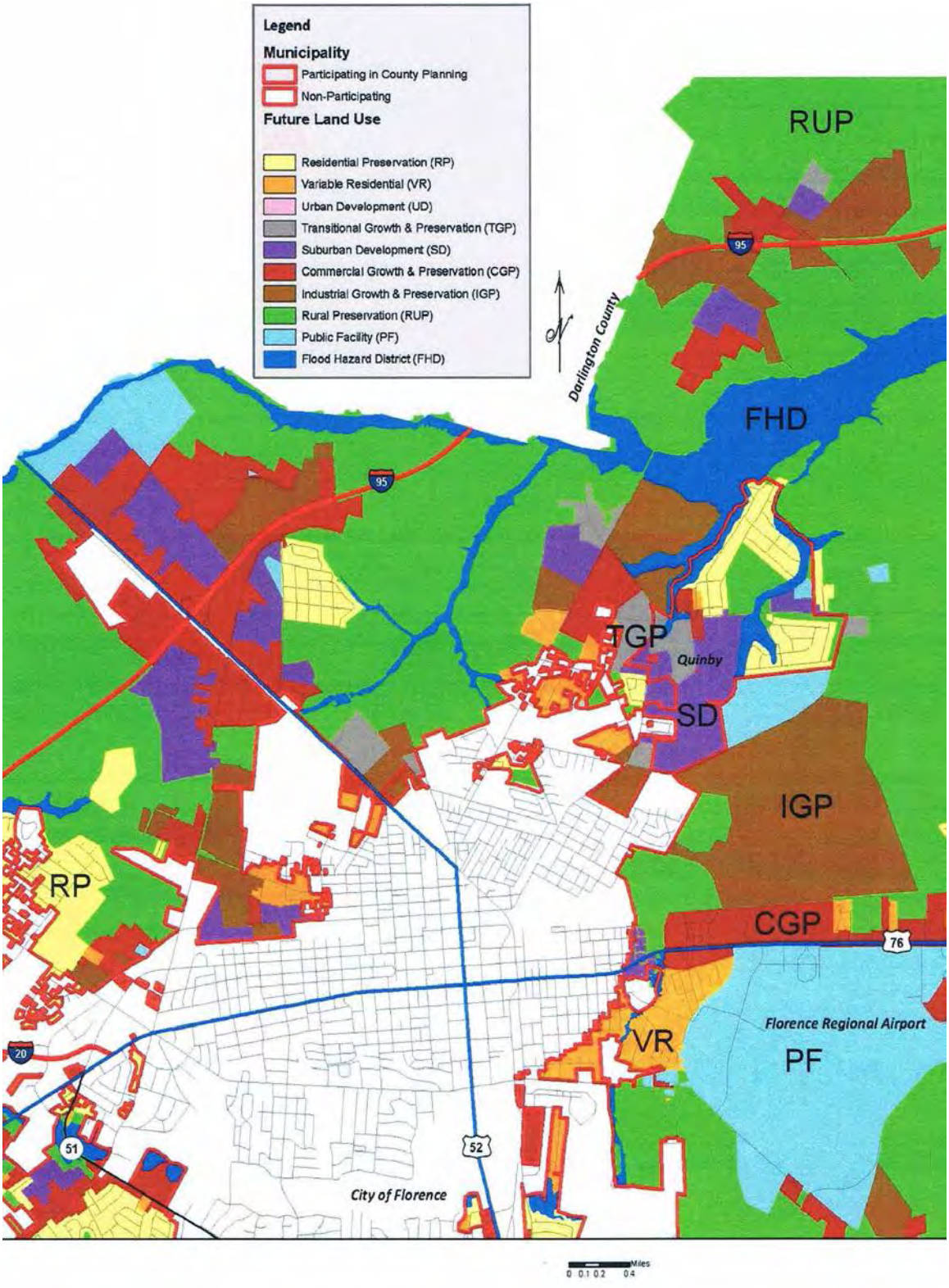


Figure 3.15 Johnsonville Future Land Use

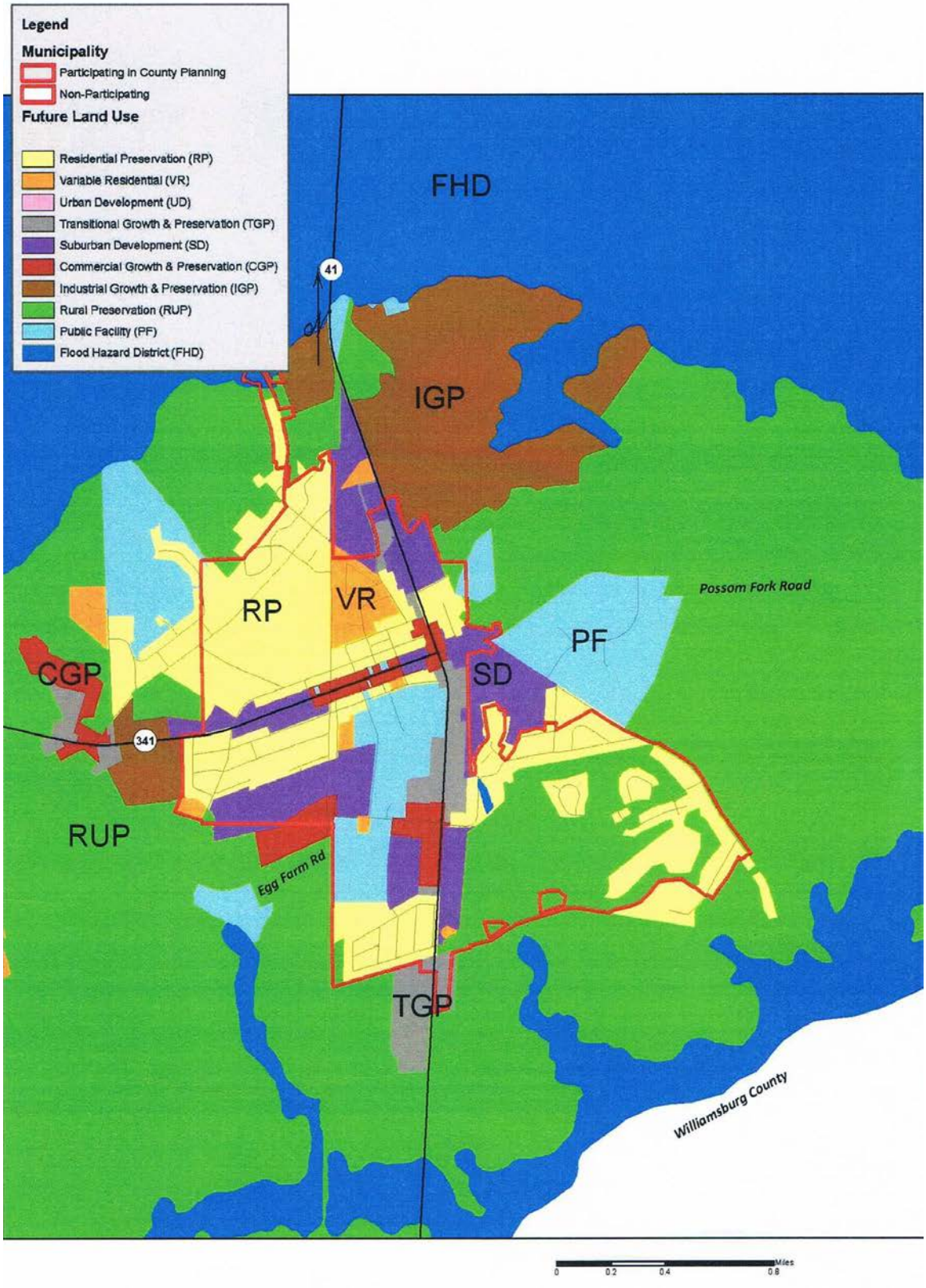


Figure 3.16 Lake City Future Land Use

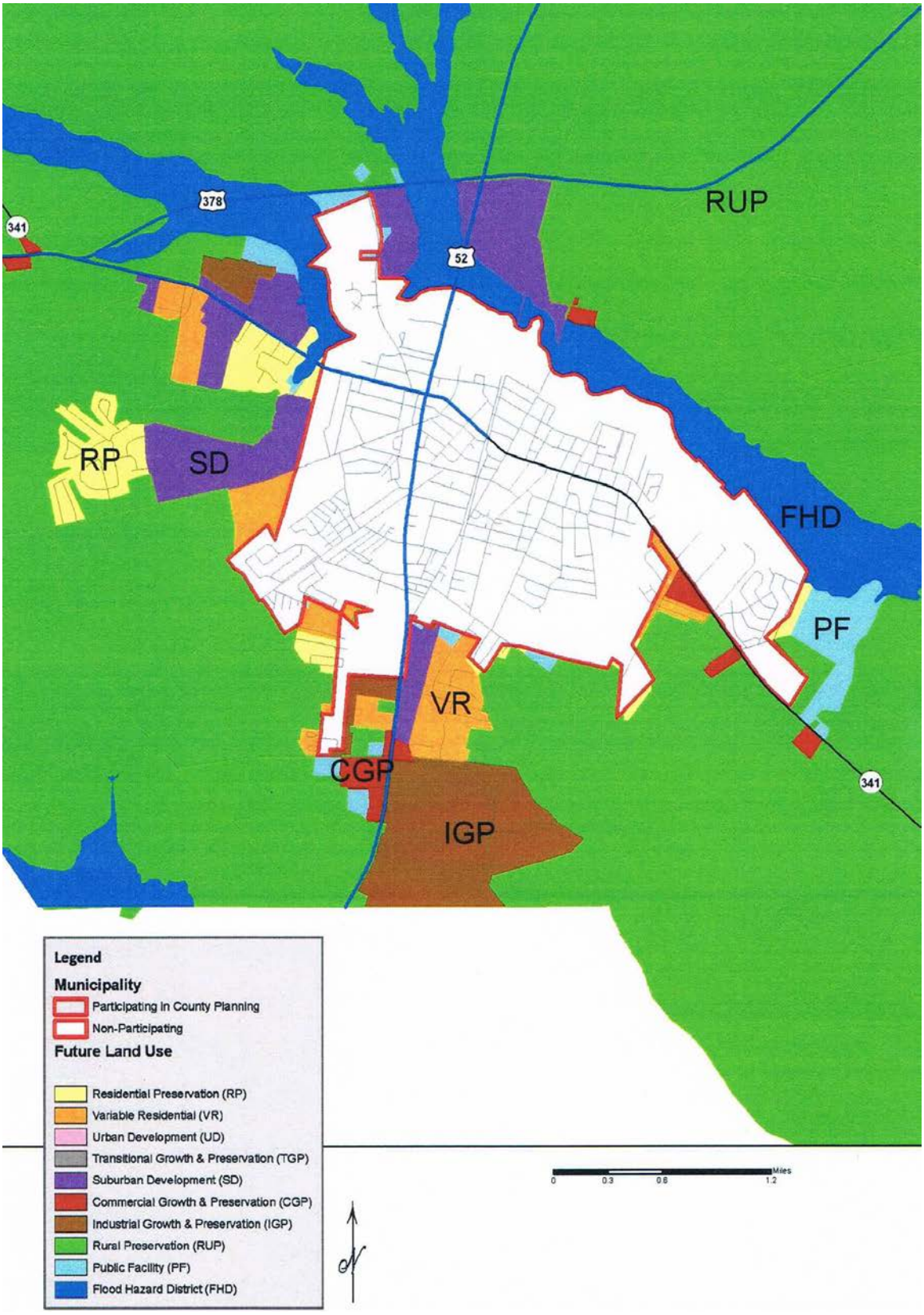


Figure 3.17 Olanta Future Land Use

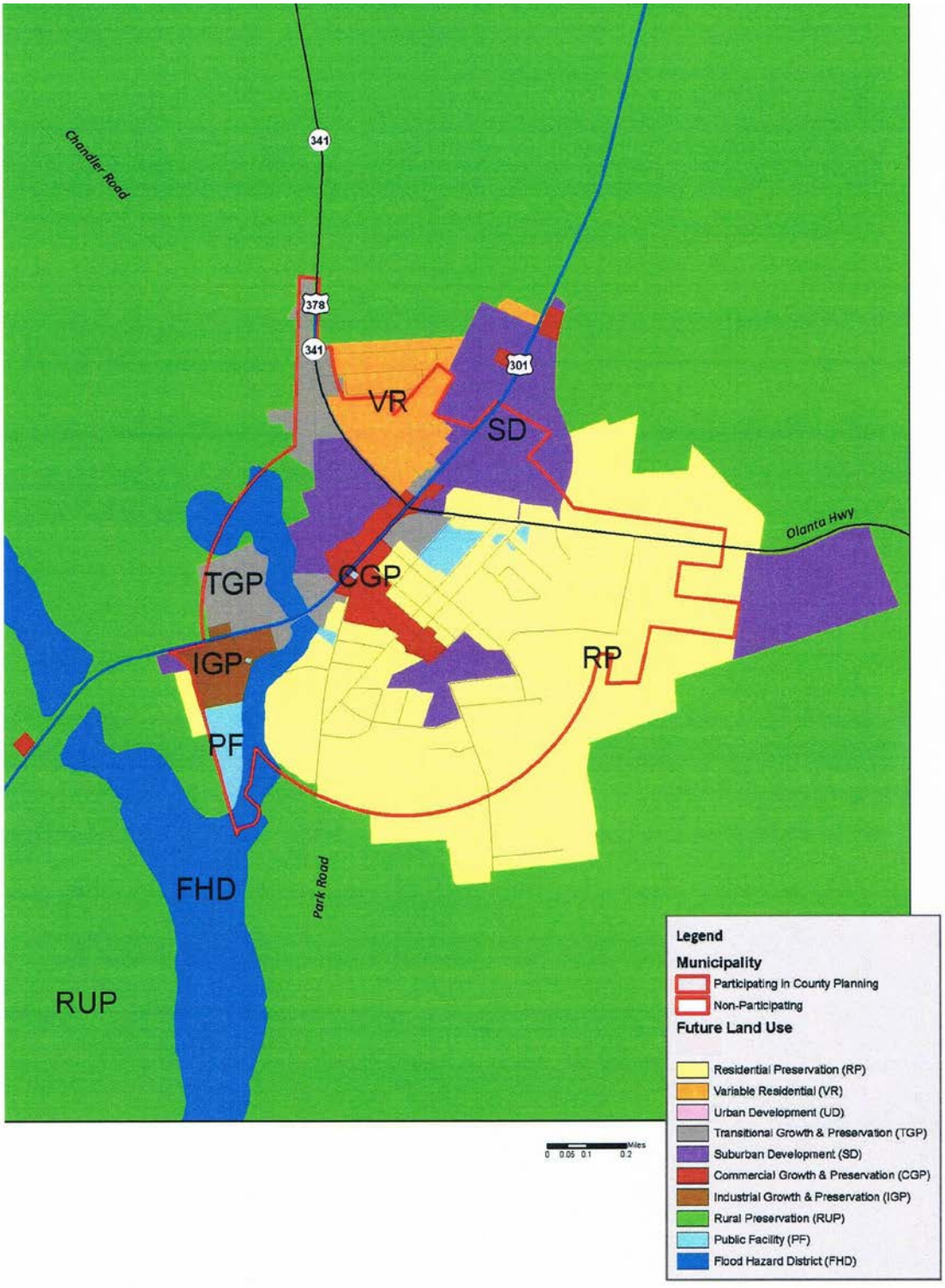


Figure 3.18 Pamplico Future Land Use

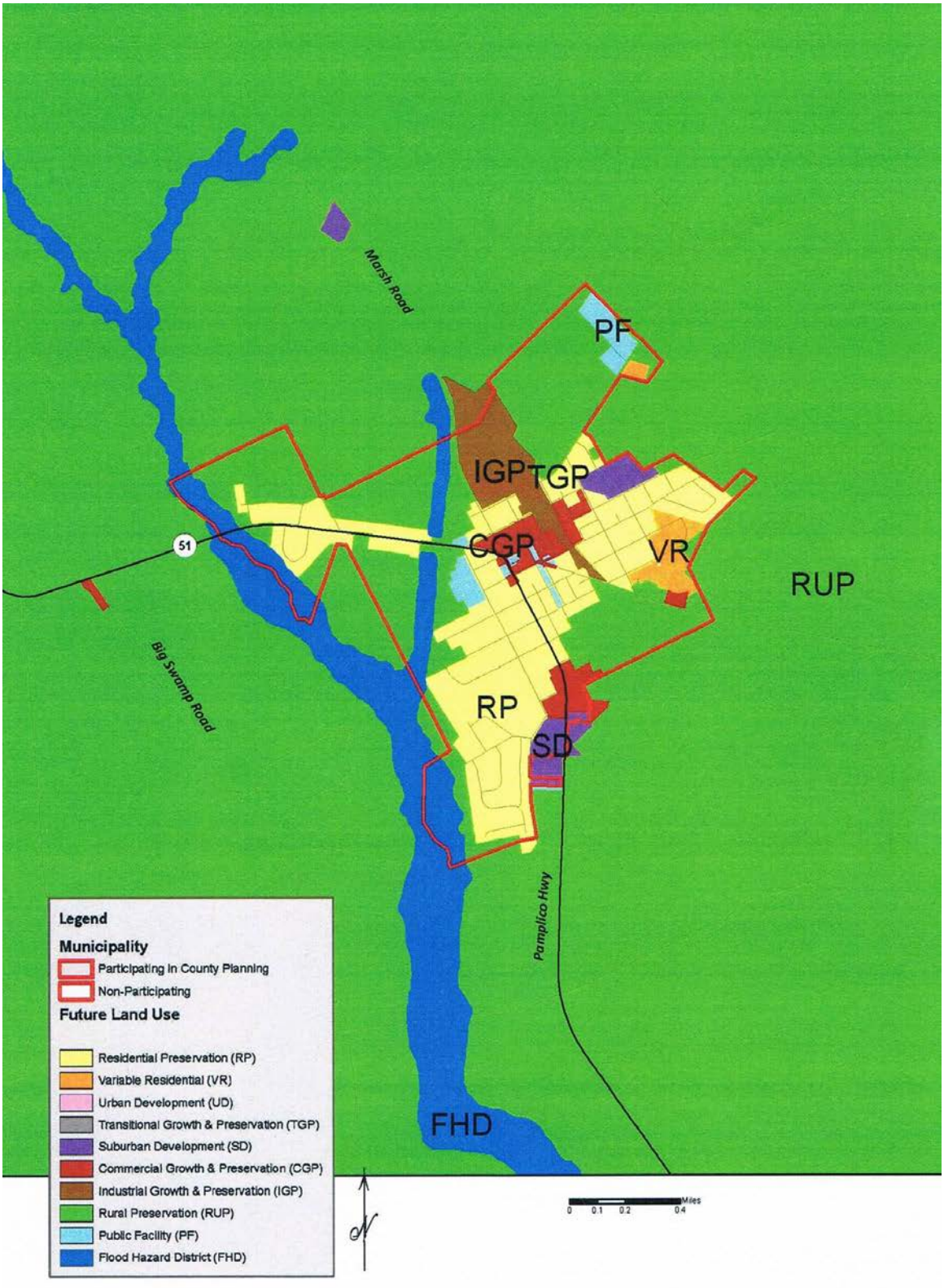


Figure 3.19 Quinby Future Land Use

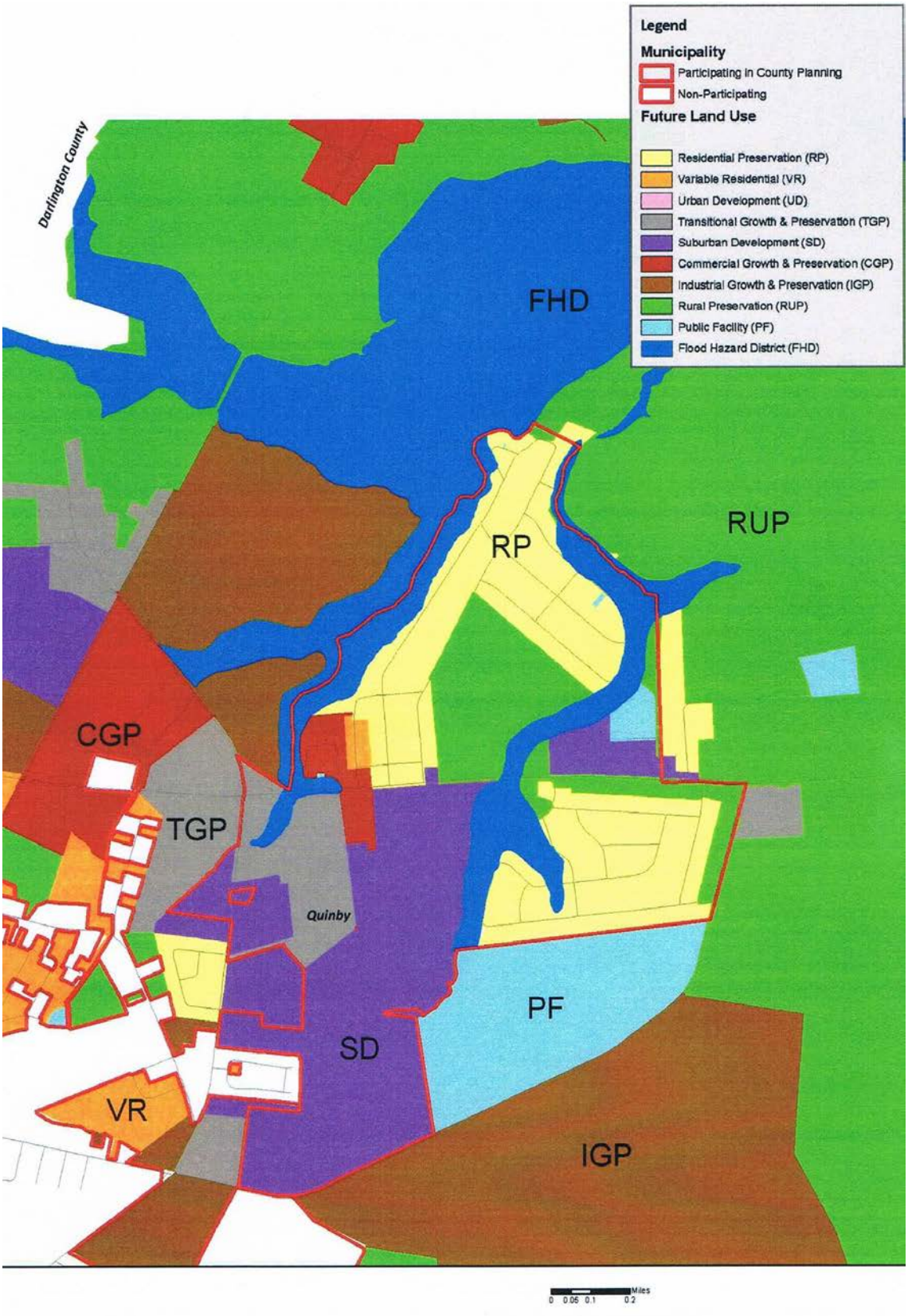


Figure 3.20 Scranton Future Land Use

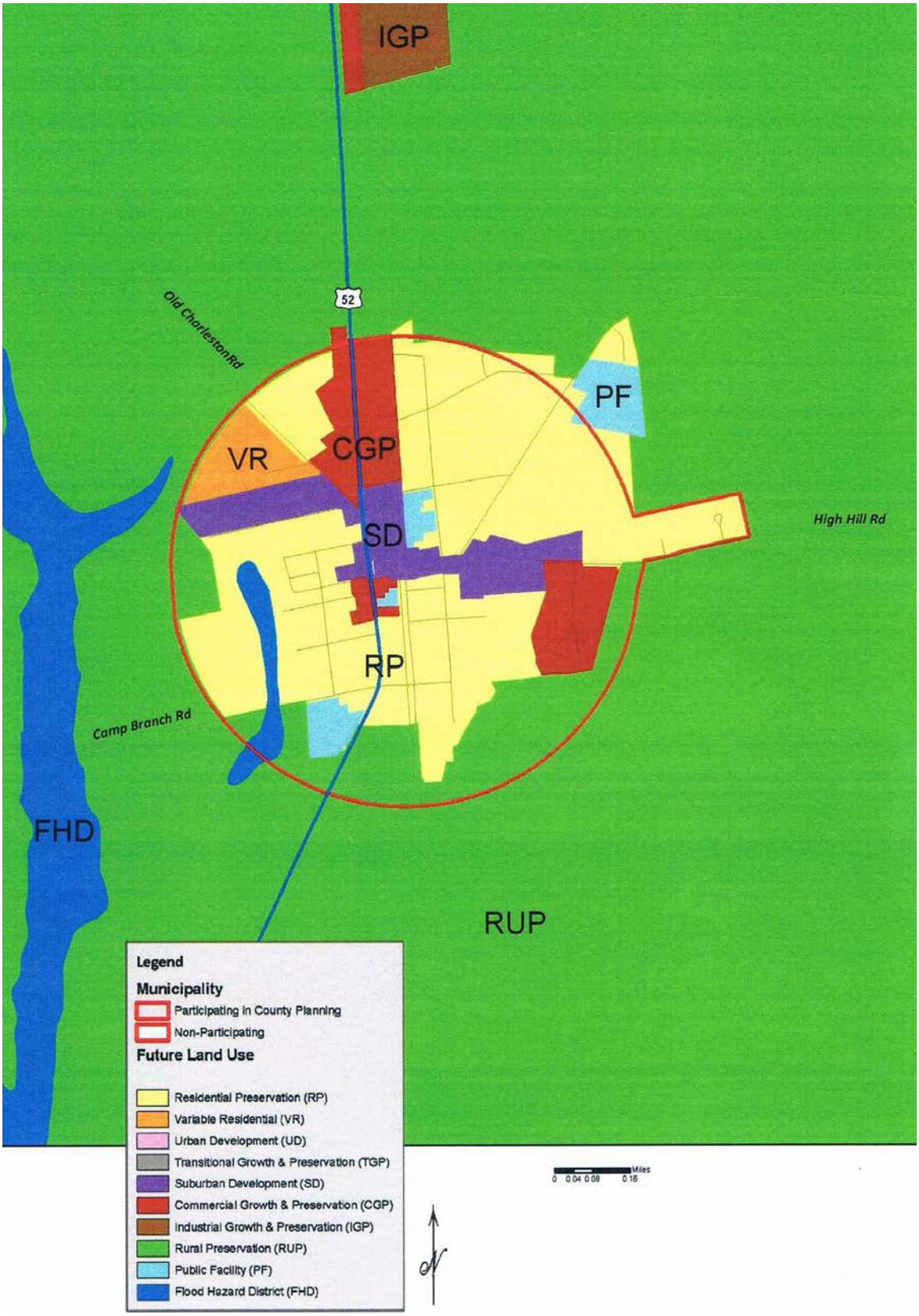
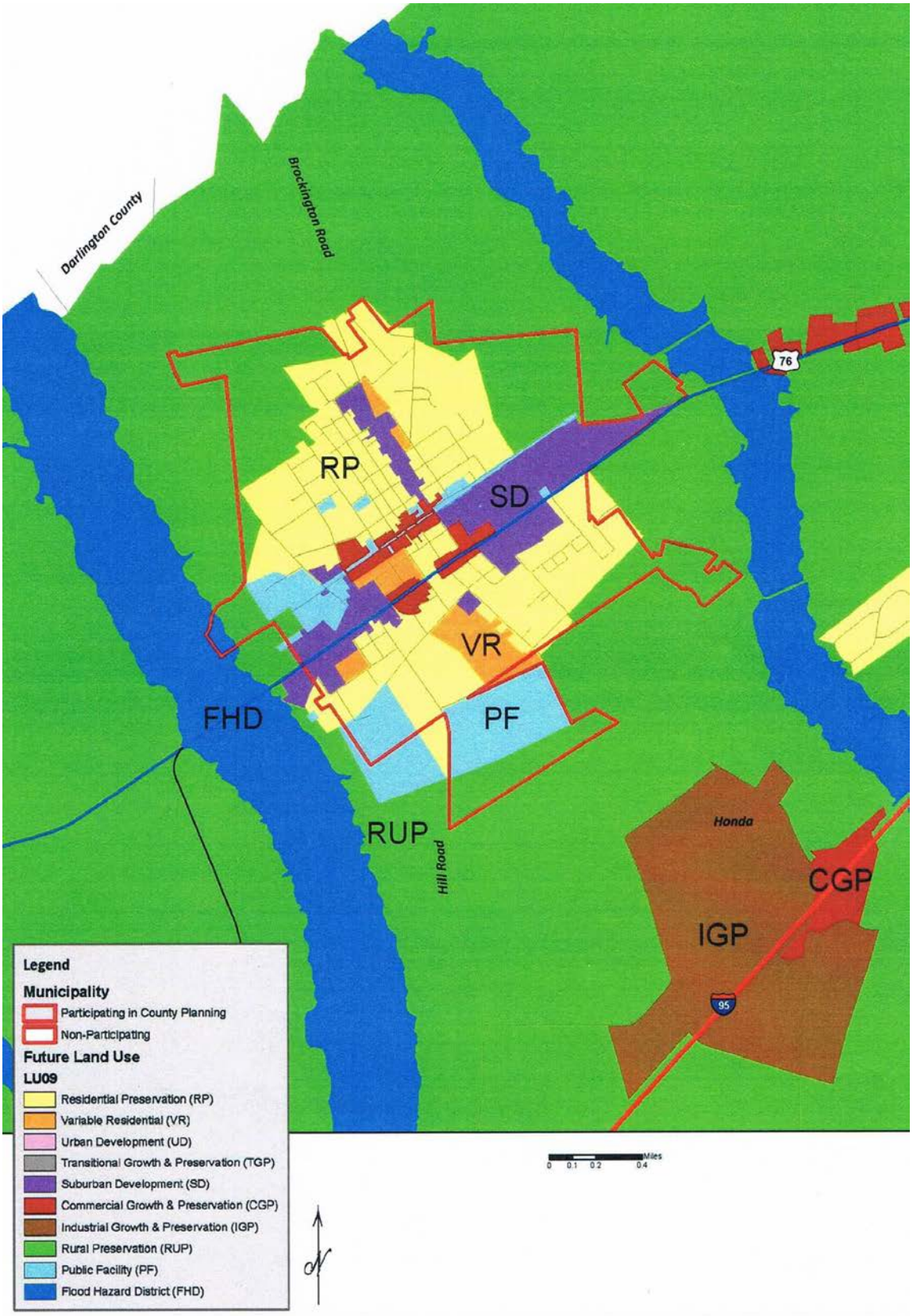


Figure 3.21 Timmonsville Future Land Use



Florence County

Hazard Mitigation Plan

Section Four

HAZARD IDENTIFICATION AND RISK ASSESSMENT

Introduction

This section of the plan summarizes the results of the hazard identification process undertaken by the FCHMPC with assistance from the staff of the Florence County Planning Department and the Florence County Emergency Management Department. The intent of this section is to provide a compilation of the information gathered about the hazards threatening Florence County. The process utilized for the development of this plan is very specific to the jurisdictions within Florence County and responsive to the unique characteristics of each.

The FCHMPC reviewed the following information sources to identify hazards that may affect the county. Numerous federal agencies maintain a variety of records regarding losses associated with natural hazards. Unfortunately, no single source offers a definitive accounting of all losses. The Federal Emergency Management Agency (FEMA) maintains records on federal expenditures associated with declared major disasters. The United States Army Corps of Engineers (USACE) and the Natural Resources Conservation Service collect data on losses during the course of some of their ongoing projects and studies. The Hazard and Vulnerability Research Institute (HVRI) at the University of South Carolina has created a database called SHELDUS, which documents different natural hazard events. This information was taken from many national databases. The current version of SHELDUS includes all loss causing events between 1960 and 1992 and from 1995 to present. Between 1992 and 1995 data reflects only events with more than $50,000.00 in damage or at least one fatality.

As a result, the FCHMPC identified the following to be the preliminary hazards list:

1. Hurricanes and Tropical Storms
2. Tornadoes
3. Flooding
4. Hailstorm
5. Nuclear Power Plants
6. Earthquakes
7. Wildfires
8. Hazardous Materials (Transportation and fixed facility)
9. Terrorism
10. Dam Failure
11. Severe Winter Weather
12. Droughts
13. Extreme Heat
14. Thunderstorms and Lightning

Some of these hazards are interrelated (i.e., hurricanes can cause flooding and tornadoes), and some consist of hazardous elements that are not listed separately (i.e., severe thunderstorms can cause lightning; hurricanes can cause coastal erosion). It should also be noted that some hazards, such as severe winter storms, may impact a large area yet cause little damage, while other

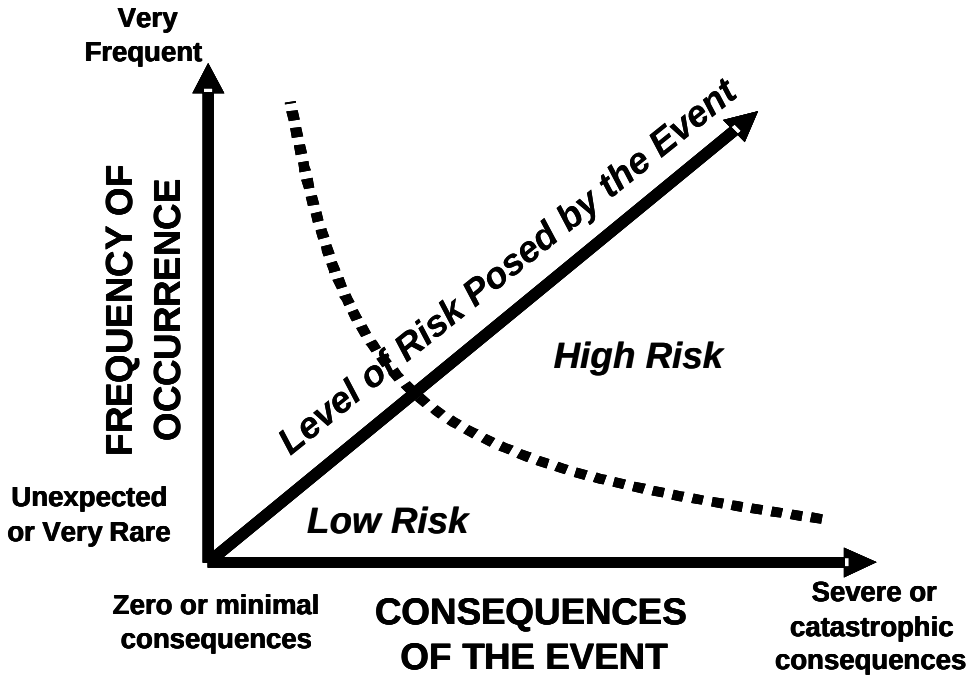
hazards, such as a tornado, may impact a small area and cause extensive damage. This section provides a general description for each of the hazards listed above along with their hazardous elements.

Hazard Identification and Risk Estimation

All of the natural, technological and societal or man-made hazards that could threaten the county were identified. When the hazard types are identified as relevant to, or of concern for, the participants can make an estimate of the risk each poses to the jurisdiction.

The estimate of risk is based on the judgment of the planners regarding the likely frequency of occurrence of the hazard event compared to its probable consequences. For purposes of this analysis, "risk" is defined as a relative measure of the probability that a hazard event will occur in comparison to the consequences or impacts of that event. That is, if a hazard event occurs frequently, and has very high consequences, then that hazard is considered to pose a very high risk to the affected communities. In comparison, if a hazard event is not expected to occur frequently, and even if it did, the consequences would be minimal, then that hazard is considered to pose a very low risk.
This relationship between frequency of occurrence and consequences of an event can be illustrated by the following graph:

Table 4 - 1



This graph illustrates that some hazards can be defined as "low risk," for they do not occur often enough and/or do not result in significant impacts even when they do. In comparison, other hazards may occur often enough and/or have sufficiently severe consequences when they do, that they must be considered "high risk." Each of the hazards considered to be a threat to the

jurisdiction can be qualitatively assessed for its probability of occurrence and its likely consequences, so that it can be indicated on the graph as falling either above or below a dotted line that can be considered to separate “high” and “low” risk hazards.

It must be emphasized that in many cases, detailed information may not have been available regarding the areas potentially impacted by a specific hazard as well as its potential health and safety, property, environmental and economic impacts of that hazard. Further, it has not been the intent of the committee to conduct extensive new studies to obtain information solely for the purposes of the development of this mitigation plan. Nor has funding been available for such research. Therefore, it has often been necessary to rely on the informed judgment of knowledgeable local officials and others to identify hazards and derive estimates of the risk each poses to the community. The committee believes that their experience with their own communities, as well as their capabilities to derive reasonable estimates of the geographic area at risk and the potential impacts of the hazard, is adequate for the purposes of this planning effort. Where the absence of hazard and risk-related data has been deemed by the jurisdiction to be a significant limitation on the effectiveness of this planning process, a mitigation initiative might be proposed to address the identified deficiency.

Identified Hazards

In this plan, a comprehensive list of potential hazards has been considered, with certain hazards eliminated from detailed analysis for a variety of reasons. The table below reviews the hazards and comments on the relevance of the hazard to the geographic and physiologic location of the region and its jurisdictions.

Physiographic Conditions Florence County and the jurisdictions included in this plan have many common physiographic characteristics. For example, all of Florence County are located within the Coastal Plains physiographic province, with a portion being least 30-35 miles from the coast. Elevations approximately 140 feet above sea level and flat terrain are typical. The impact of these natural features is two-fold:

1. Because of the general lack of slope in all portions of the county, several of the hazards reviewed are not relevant, such as landslides, avalanche, etc.

2. Because of the distance from the coast (at least 30 miles from all jurisdictions), all jurisdictions are immune from coastal storms and erosion, tsunamis, etc.

Specific natural and man-made hazards and their degree of relevance and consideration in this plan are as follows:

Table 4 – 2a

HAZARD TYPE:	RELEVANCY TO JURISDICTIONS OR EXPLANATION OF WHY HAZARD WAS NOT CONSIDERED AT THIS TIME:
AVALANCHE	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. No significant areas of slope and no cumulative snowfall is experienced during winter in any portion of the region, so this hazard has been excluded from analysis at this time.
COASTAL EROSION	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Not a coastal area. All portions of the region and all jurisdictions are over 35 miles inland. There are no beaches, so this hazard has been excluded from analysis at this time.
COASTAL STORM	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Not a coastal area. All portions of the region are at least 35 miles inland, so this hazard has been excluded from analysis at this time. HOWEVER, SEE **HURRICANES**.
DAM FAILURE	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. While recorded records of dam failure in the county and its jurisdictions are few, there is potential.
DROUGHT	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of drought in the past, so all have been assessed.
EARTHQUAKE	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. While recorded records of earthquakes in the county and its jurisdictions are few, there is potential.
EXPANSIVE SOILS	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Not typical of soil types in county, so this hazard has been excluded from analysis at this time.
EXTREME HEAT	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Considered as a factor in drought, so this hazard has been excluded from separate analysis at this time.
FLOODING	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of at least localized flooding in the past, so all have been assessed.
HAILSTORM	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of hailstorm activity in the past, so all have been assessed.
HURRICANE	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced extensive hurricane activity in the past, so all have been assessed.
LAND SUBSIDENCE	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. No historical events, so this hazard has been excluded from analysis at this time.
LANDSLIDE	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. No significant slopes or historical events have been recorded, so this hazard has been excluded from analysis at this time.
SEVERE WINTER STORM	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of severe winter storms in the past, so all have been assessed.
THUNDERSTORM	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of severe thunderstorms in the past, so all have been assessed.
TORNADO	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions

	of the county have experienced some level of tornado activity in the past, so all have been assessed.
TSUNAMI	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. Not a coastal area, with all portions of the region at least 35 miles inland, with 100+ foot elevations; thus, this hazard has been excluded from analysis at this time.
VOLCANO	NOT APPLICABLE TO ANY JURISDICTIONS IN THIS COUNTY. No historical data exists to indicate volcanic activity in recorded history, so this hazard has been excluded from analysis at this time.
WILDFIRE	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county have experienced some level of wildfire activity in the past, so all have been assessed.
LIGHTNING	INCLUDED IN ANALYSIS FOR ALL JURISDICTIONS. All portions of the county are subject to lightning hazard.
OTHER:	**Nuclear Energy Emergency:** The region is home to one nuclear power station, the H. B. Robinson Plant in Northwest Darlington County. This plant affects Florence County which is located within the 50 EPZ and the Ingestion Exposure Pathway. **Other Man-made Hazards:** In a separate section, man-made chemical and other hazardous materials are addressed, including fixed hazardous materials locations and rail/highway transportation route hazards. **Terrorism:** Because of the complex issues regarding potential threat elements, the sensitive nature of potential strategies and responses to such threats, as well as law enforcement jurisdiction over such threats, this plan will not address such issues. **Other:** No other natural or man-made hazards were identified in historical data or by community input.

Hazard Assessment

With the preceding list of hazards in mind, each hazard will be generally addressed in the following manner:

- The type of hazard will be described
- The location and extent of past events will be quantified to the extent feasible
- The probability of impact will be estimated using GIS mapping of available data
- A vulnerability determination will be made and summarized at the end of this section for all of the listed hazards.

Much of this assessment has been accomplished using GIS analysis of data. Initially, the GIS methodology for mapping and analyzing events and determining the probability of occurrence was developed by the Hazards and Vulnerability Research Institute (HVRI) under contract with the SC Emergency Management Division. Implementation of the methodology was by the Florence County GIS Department. The data is presented, when feasible, with composite assessments made of overall jurisdiction vulnerability. The overall methodology for the USC Hazard Assessment mapping is available as a technical monograph. That methodology was followed by the GIS staff and the mapping results have been reviewed by jurisdictions.

In some instances data were available only on a countywide basis, so jurisdictional details are not feasible. However, these GIS hazard vulnerability maps and the listing of hazards have been

reviewed by each jurisdiction and any local knowledge has been considered (frequency of winter ice storms in smaller jurisdictions, etc.).

For the rating of “probability” of occurrence, for each of the following hazards, the FCHMPC was asked to provide ratings of the likelihood that an event would occur in the future. The ratings that were used were:

- High Probability (highly likely to occur)
- Medium Probability (likely to occur)
- Low Probability (not very likely to occur)

These were subjective, order-of-magnitude ratings that participants could relate to whether they were highly skilled in a hazards area (e.g., members of a fire department) or not. This approach facilitated utilizing a consensus approach with the participating group. For the rating of “severity”, the FCHMPC were asked to provide ratings of the likely severity of an event, assuming one occurred in the future. The ratings that were used were:

- High Severity (extensive loss of life and/or property)
- Medium Probability (moderate loss of life and/or property)
- Low Probability (relatively modest loss of life and/or property)

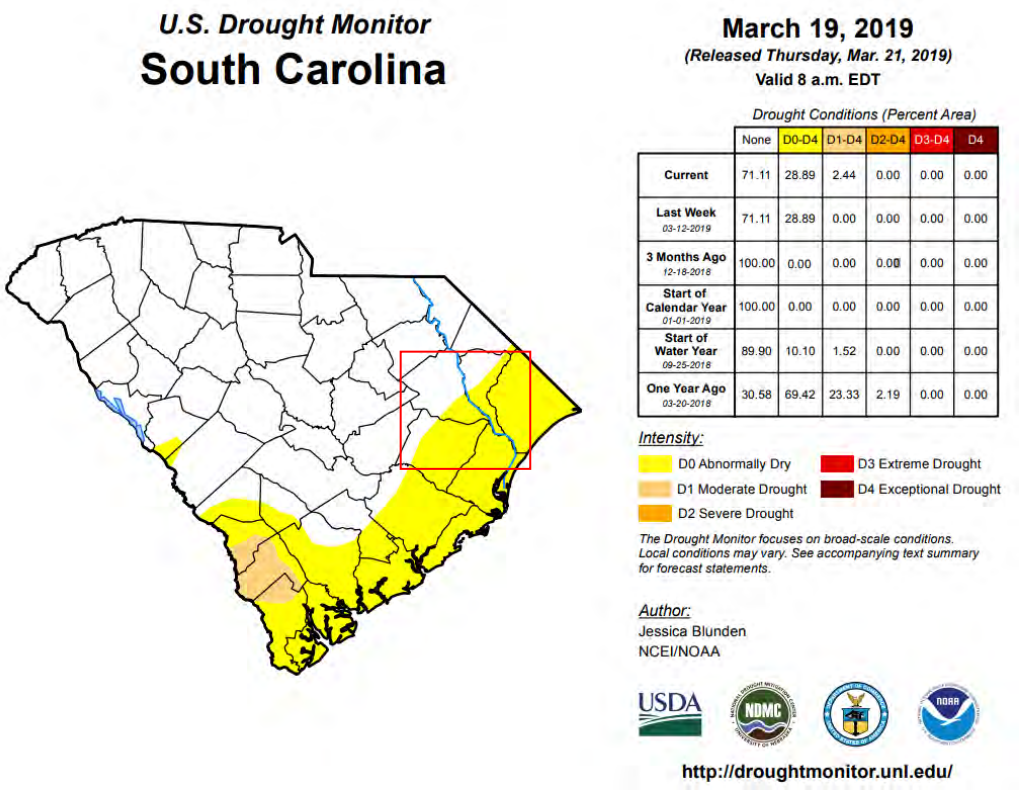
These were subjective, order-of-magnitude ratings that participants could relate to whether they were highly skilled in a hazards area (e.g., members of a fire department) or not. This approach facilitated utilizing a consensus approach with the participating group.

Drought:

Droughts are periods of abnormally dry weather that persist long enough to create serious hydrologic imbalances (such as crop losses, water supply shortages, etc.). The degree of moisture deficiency, the duration of the deficiency and the size of the affected areas are all factors considered in the evaluation of drought conditions. Drought is a widespread event. All of Florence County and its jurisdictions are equally susceptible to drought. Drought data for the sixty-eight years from 1950 to 2018 were extrapolated from storm data and then summarized. Drought designations (almost always being countywide) were considered as well.

Overall, vulnerability of drought is relatively high. With a drought likely to occur in one out of every three years and with the duration likely to be over a year, the vulnerability of this jurisdiction to such events is relatively high. In 1993 Florence County experienced an extreme or D3 drought, one of the worst droughts in recent history. A D3 drought corresponds to an area where major crop and pasture losses are common, fire risk is extreme, and widespread water shortages can be expected requiring restrictions. This caused major crop/pasture losses; widespread water shortages or restrictions. One way of measuring drought extent is defined by the drought classifications provided by the U.S. Drought Monitor. To follow is a state graphic on current drought status.

Figure 4 - 1



Historical and Notable Events

1925: The growing season had a recorded 12.41-inch rain deficit, and the State experienced an overall rainfall deficit of 18.23 inches. Water for livestock was scarce; many streams had record lows, and deep wells went dry affecting water supply and power production.

1954: The year set the current record for the State's driest year with total statewide precipitation of 32.96 inches. An excessively hot summer exacerbated the impacts of limited rainfall. According to National Weather Service reports, crop yield was only 10 percent of its 10-year average production rate. Hurricane Hazel ended extreme drought conditions in eastern South Carolina, although drought continued in western areas of the State.

1985-1986: Due to drought conditions and accompanying reduced stream flows hydroelectric power generation was curtailed by 183,978-megawatt hours at the Lake Murray Saluda Hydropower plant. The U.S. Army Corps of Engineers was forced to purchase $10 million in substitute electricity on the open market to compensate for the reduced hydroelectric power production at the Savannah River Plant.

1993: The Greenville-Spartanburg Airport recorded the hottest and driest month on record up to date in July of 1993. Similar records were set at other locations around the State. The drought,

which started at the height of the crop growing season in May and June, devastated South Carolina pastures and hay production. The drought and record heat cost the State a total of $22.5 million in crop losses. The total loss for livestock, hay, and pasture was estimated at $34.7 million.

1998-2002: This drought lasted four years and the precipitation deficits were among the largest in the State history. The two highest levels of drought severity, extreme and severe drought, lasted throughout summer of 2002; in August, State officials declared the entire State to be in the extreme drought. The drought significantly contributed to the southern pine beetle epidemic. The SC Forestry Commission estimated the total impact of the drought at more than $1.3 billion dollars. Record low river and stream levels for Lynches River at .72', Black Creek at .69' and Pee Dee River at .95'.

2007-2009: Drought affected water levels in many lakes. The Savannah Lakes were more than 19 feet below the target level. Lake Marion dropped 9 feet during 2007 reaching the lowest elevation (66.27 ft-msl) since the 1950s. The hydrological drought impacted water supplies, irrigation capacity, and many lake-related businesses as well as golf courses. Voluntary and mandatory water restrictions were issued across the State due to prolonged drought conditions and associated water supply shortages. Near record low river and stream levels for Lynches River at 1.0', Black Creek at 1.43' and Pee Dee River at 2.36'.

Recent Activity:

2015-2016: South Carolina experienced alternating wet and incipient drought conditions. In June 2015, all counties were in incipient or moderate drought. Historic floods in October 2015 alleviated the dry spell for several months. However, in August 2016 drought returned to the state. Hurricane Matthew brought excessive rainfall to most counties, but a lack of adequate moisture persisted in the Upstate region.

Vulnerability and Impacts

Droughts have far-reaching impacts on multiple sectors, such as agriculture, tourism, energy, and others. Determining the direct and indirect costs associated with drought is difficult due to drought's broad spatial extent and the difficulty in determining specific beginning and end dates.
The impacts associated with these different types of drought can change depending on when and where a drought is happening. State-owned or operated buildings, infrastructure, and critical facilities are exposed to the drought hazard depending on their location. State assets that are more vulnerable to droughts are located in counties that experienced more frequent drought duration and higher drought severity. A drought of a particular severity in the present time could have different impacts compared to past droughts because of changes in water supply and demand, assets, and populations.

Overview of Impacts by Sector

Table 4 – 2b provides a historical overview of the wide range of impacts that drought produces, and the many sectors that are vulnerable to and have been affected by drought in South Carolina.

Affected sectors and resources	South Carolina Examples	
Agriculture: Agriculture, farming, aquaculture, horticulture, forestry, and ranching	Multiple years	**Reduced crop yields**: Figure 9 shows corn crop yield anomalies during past droughts (1954, 1970, 1977, 1986, 1993, 1998, 2002, 2008, and 2011).[9]
	2011-2016	**Loss of pasture land and grazing grasses for livestock**: The USDA Livestock Forage Program provided South Carolina farmers with $17.1 million to compensate for some of these losses during this time period.[10]
Plants and Wildlife: Wildlife, fisheries, forests, and other fauna	2002	**Increased vulnerability to disease**: Four years of drought made pine trees more susceptible to Southern Pine Beetle infestation, leading to estimated timber losses of $220 million.[11] **Habitat degradation**: Blue crab and shrimp fisheries were below normal, due to drought's negative effects on nursery habitat.[12]
Fire: Forest, range, and urban fires that occur during drought events	2016	**Increased risk of fire**: Drought conditions contributed to increased fire occurrence and number of acres burned. The Pinnacle Mountain fire was the largest in Upstate history; over 10,000 acres burned and firefighting costs were more than $5 million.[13]
Water Supply and Quality: Surface or subsurface water supplies (i.e., reservoirs or aquifers)	2002	**Private wells ran dry**, new or deeper wells needed **Saltwater intrusion** in water systems in Pee Dee and Waccamaw River Basin[14]
Energy: Power production and demand	1986, 1999-2002, 2007-2008	**Reduced hydropower generation** in the Santee and Savannah River Basins[15] **Purchase and use of alternate sources of energy** to compensate for loss of hydropower generation
Business and Industry: Non-agriculture businesses	2007-2008	**Lost revenue/increased costs** to landscapers, golf courses, recreation-based businesses due to water shortages
Tourism and Recreation	2002, 2007-2008	**Closed boat ramps** due to low water levels, **cancelled fishing tournaments**
	2016	**Closed trails** at Table Rock State Park due to the Pinnacle Mountain fire
Society and Public Health: Changes in public behavior and human health effects	Multiple years	**Water use restrictions**, **burning bans**
	2016	**Road closures** and **widespread smoke** due to Pinnacle Mountain fire

Table 4-2b

Figure 4 - 2

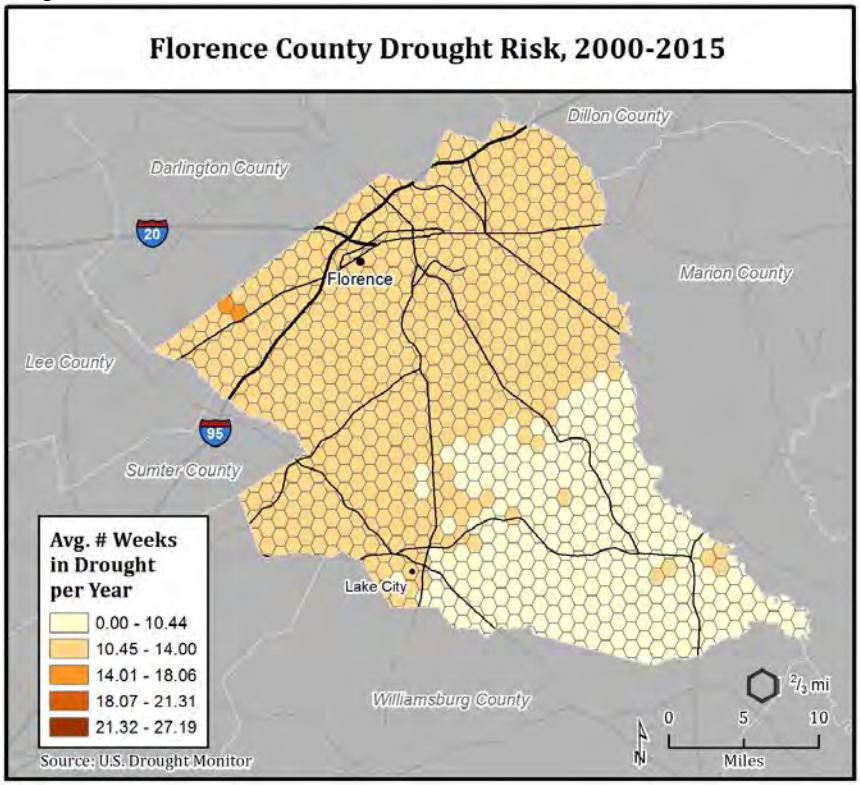
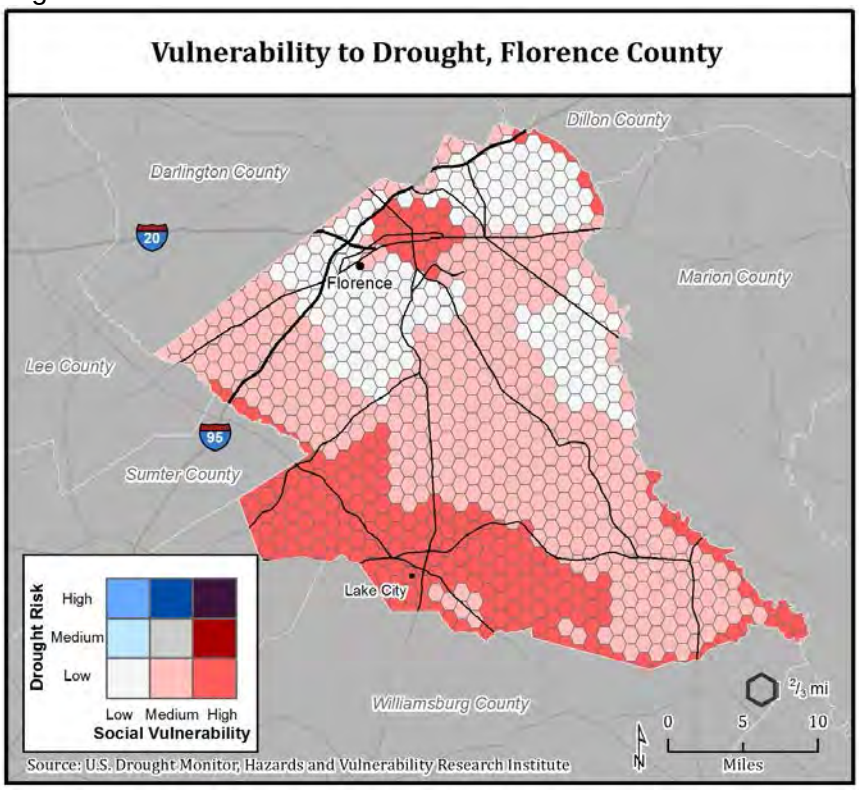


Figure 4 -3



Earthquake:

The release of seismic energy resulting from a sudden slip on a fault or other sudden stress changes in the earth are commonly termed earthquakes due to the resulting ground shaking that occurs. Magnitude and intensity are both important, as is the location of the "epicenter" of the event. The following summary indicates conditions of and from various magnitude and intensity earthquakes, based on data from the USGS:

Table 4 – 3 Modified Mercalli Intensity Scale for Earthquakes

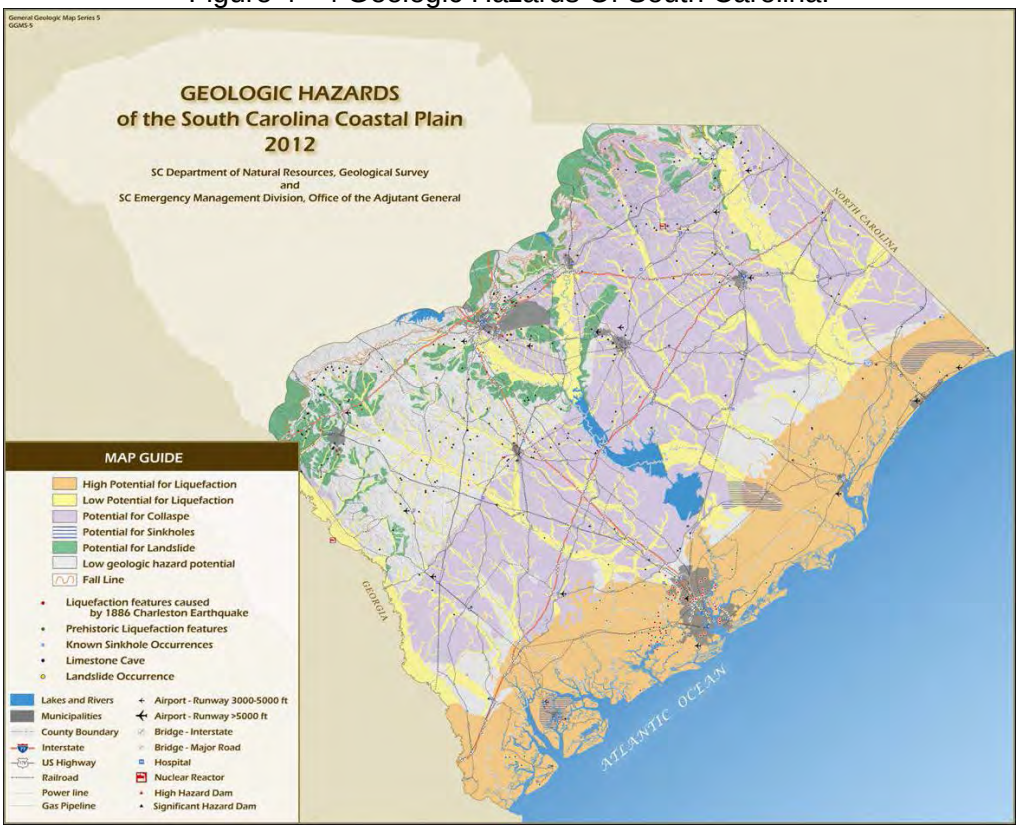
Scale	Intensity	Description of Effects	Corresponding Richter Scale Magnitude
I	INSTRUMENTAL	Detected only on seismographs.	
II	FEEBLE	Some people feel it.	< 4.2
III	SLIGHT	Felt by people resting; like a truck rumbling by.	
IV	MODERATE	Felt by people walking.	
V	SLIGHTLY STRONG	Sleepers awake; church bells ring.	< 4.8
VI	STRONG	Trees sway; suspended objects swing, objects fall off shelves.	< 5.4
VII	VERY STRONG	Mild alarm; walls crack; plaster falls.	< 6.1
VIII	DESTRUCTIVE	Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged.	
IX	RUINOUS	Some houses collapse; ground cracks; pipes break open.	< 6.9
X	DISASTROUS	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread.	< 7.3
XI	VERY DISASTROUS	Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards.	< 8.1
XII	CATASTROPHIC	Total destruction; trees fall; ground rises and falls in waves.	> 8.1

Source: Federal Emergency Management Agency

Seventy percent of earthquakes in South Carolina originate in the Middleton place-Summerville Seismic Zone, some 70-80 miles south of the county's jurisdictions. Due to the relative distance to an active seismic zone, activity has been historically low, with only one event noted between 1698 and 2018. All of Florence County could potentially experience a magnitude I to VIII. Overall,

vulnerability to earthquakes is very low for all jurisdictions. Since the last plan update there have been 0 earthquake events. To follow is a graphic on geographic hazards.

Figure 4 - 4 Geologic Hazards Of South Carolina.



Source: SCDNR and SCEMD

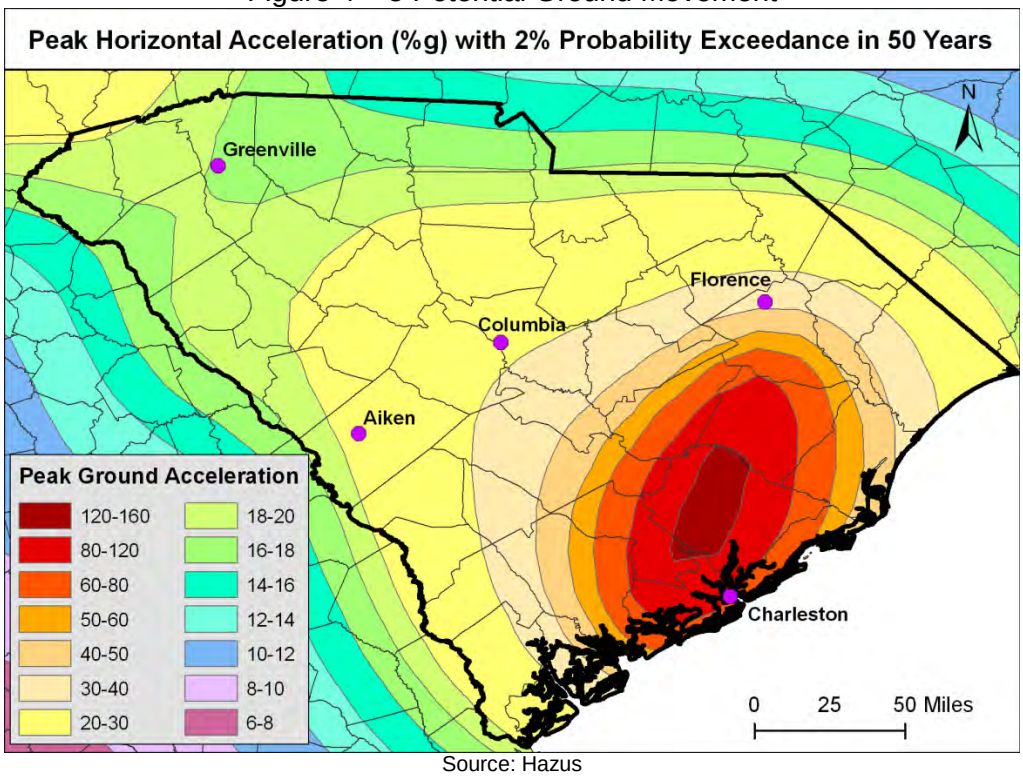
Historical and Notable Events

August 31, 1886: One of the greatest earthquakes in the United States occurred in Charleston on August 31, 1886, with an intensity of X on the Modified Mercalli Scale. This event killed over 70 people and left most structures damaged or destroyed, with an estimated damage of $23 million. The initial shock occurred at 9:51 p.m. and lasted between 35 to 40 seconds. There was a second strong aftershock 8 minutes after the initial shock, and six aftershocks followed within a 24 hour period. Within a 160 kilometer radius, cities of Columbia, South Carolina, Savannah and Augusta, Georgia also experienced damage. The total affected area covered over 5 million square kilometers, and was felt in cities of New York, Boston, Milwaukee. Cuba, Bermuda, and Ontario, Canada also felt the main earthquake.

On **June 12, 1912 and January 1, 1913**, two earthquakes occurred in Union County, South Carolina. The second was felt from Georgia to Virginia. Witnesses report the earthquake was accompanied by a loud roaring noise. A house in Union County and chimneys in Union, Spartanburg, and Cherokee Counties were destroyed. The shock was felt for more than 30 seconds in Raleigh, North Carolina. Isoseismals (lines on a map showing areas with equal seismic intensities) showed an elliptical area of approximately 43,000 square miles that felt the disturbance. Although only minor damage occurred, the intensity of the earthquake was a VII and is the largest know earthquake to have occurred in South Carolina outside of the Charleston area.

From 1989–1993 an increase in earthquake activity was noted. Seismologists consider almost half of South Carolina counties as being at high risk for seismic events because of the state's seismic history and current seismic activity. In 2002, 17 earthquake events were recorded in the Middleton Place-Summerville Seismic Zone (MPSSZ), which is located approximately 13 miles northwest of Charleston, with magnitudes ranging from 0.68 to 3.03. In addition, two earthquakes occurred on the continental shelf approximately 16 miles offshore of Seabrook and Kiawah Islands. The offshore earthquake recorded on November 11, 2002 had a magnitude of 4.32 and was felt over a wide area from Wilmington, North Carolina, south to Savannah, Georgia, and inland to areas around Columbia. Fortunately, there were no reports of damage associated with this event. Between 2002 and 2018, there were no major earthquakes.

Figure 4 – 5 Potential Ground Movement



Source: Hazus

Recent Activity (2012 – 2017)

Numerous minor earthquakes have been registered with the highest of these registered earthquakes is a 3.2 on the Richter Scale that originated around Summerville, Dorchester County. August 23, 2011 major earthquake in central Virginia was felt widespread in South Carolina, with reports of buildings shaking in Greenville, Georgetown, Myrtle Beach, and Rock Hill. Several buildings in downtown Columbia were evacuated; this was a Magnitude 5.8 event.

February 14, 2014: A 4.1 magnitude earthquake occurred at 10:23 pm with the epicenter near Edgefield. Tremors were felt across the state but no major damage or injuries were reported.

Figure 4 - 4

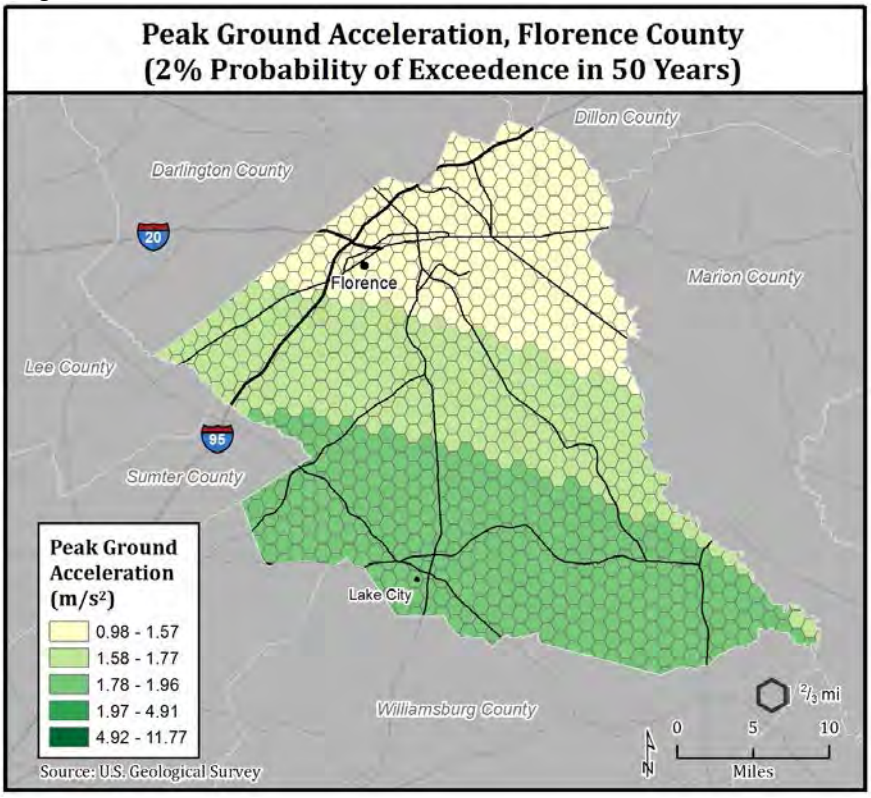
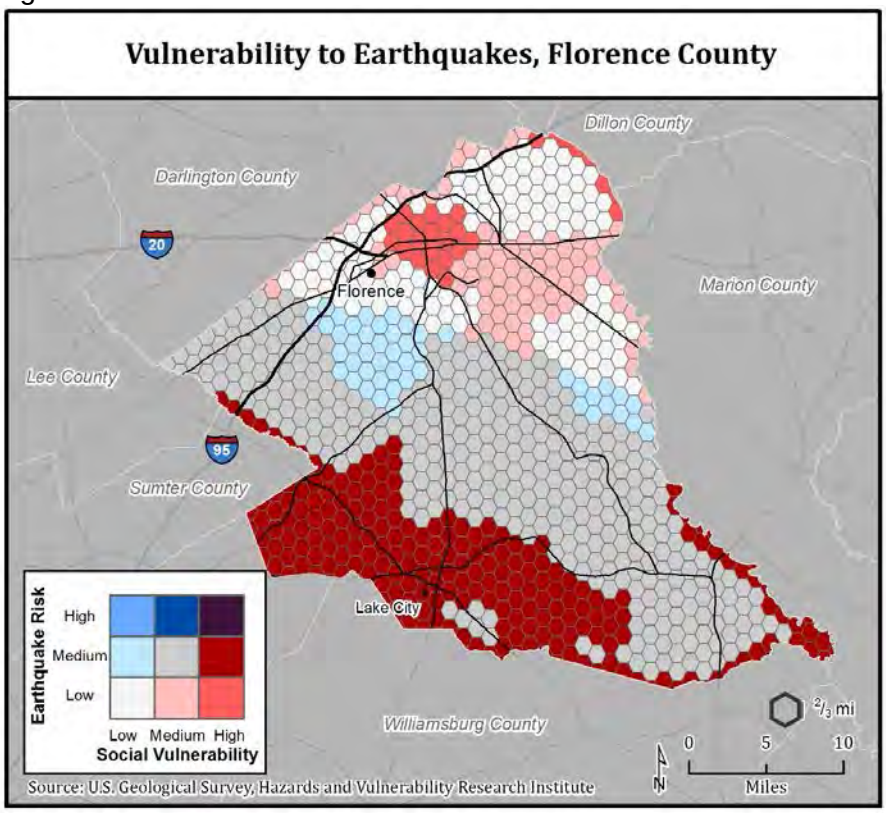


Figure 4 - 5



Vulnerability

In order to conduct the risk assessment, Hazus, FEMA's loss estimation software was used to model and provide estimates of potential impact. Hazus risk assessment method is parametric in that distinct hazard and inventory *parameters* (for example, soil and liquefaction data, and building types) were modeled using the Hazus software to determine the impact (damages and losses) on the built environment. The Hazus software was used to estimate losses from earthquake hazards. The baseline data in Hazus continually undergoes updates, such as our essential facility data update in 2016. Table 4.K.17 does not include the same information as the other hazard tables of historical events and loss information. This is due to inconsistencies and incomplete earthquake information from SHELDUS and NCDC. Annualized losses for earthquakes were modeled in Hazus, and earthquake events were taken from South Carolina's Seismic Network.

Flooding:

Floods are one of the most deadly natural disasters in the Unites States. The National Flood Insurance Program defines flooding as "a general and temporary condition of partial or complete inundation of two or more acres of normally dry land are or of two or more properties…" The causes include:

- Overflow of inland or tidal waters
- Unusual and rapid accumulation or runoff of surface waters from any source, or
- A mudflow

There are five distinctive types of flooding in South Carolina.

1. Flash flooding: rapid onset events which occur from short, heavy rainfall, accumulating in areas faster than the ground is able to absorb it. Urban flooding: occurs because of impervious surfaces (streets, roads, parking lots, residential and business areas that inhibits ground water absorption, causing runoff
2. Riverine flooding: this occurs when an increase in water volume within a river channel causes an overflow onto the surrounding floodplain. This type of flooding is the most common in the United States and is may also be termed 'overbank flooding'.

3. Coastal flooding: water pushed inland as a result of storm surge, wind-driven waves, and heavy rainfall produced by hurricanes, tropical storms, nor'easters, and other coastal storms.

4. Local drainage problems: can occur anywhere in the State where the ground is flat, where the drainage pattern has been disrupted, or where channels or culverts have not been maintained.

5. Dam/levee failure: each dam in the State has the potential to fail and suddenly release its impounded water, flooding the land downstream. The threat from dam failure increases from aging dams, and when additional dams are built for retention basins and amenity ponds in new developments. Older dams may not have been built for current engineering standards. Many dams exist on smaller streams that are not mapped as floodplains or subject to floodplain regulation, leaving downstream residents unaware of

potential risks. At this time DHEC is completing significant assessment & recovery work of the dams throughout the state.

In the jurisdictions covered by this plan, the typical causes are flash flooding, riverine flooding and local drainage problems. Coastal flooding is not a recognized hazard in any jurisdiction covered by this plan.

Due to the frequency of storms and the low and flat topography of much of the county, flooding is a common occurrence in much of the region, including urban areas where dramatic increases in impervious surfaces and the narrowing (by infill) and channelization of natural tributaries worsens the frequency of events. Indeed, such fill areas and channelization make the determination of flood-prone areas more complex. According to NCDC, Florence County and participating jurisdictions have experienced 22 flooding events in the past 7 years. These range from flash flooding during a thunderstorm to severe flooding lasting several days.

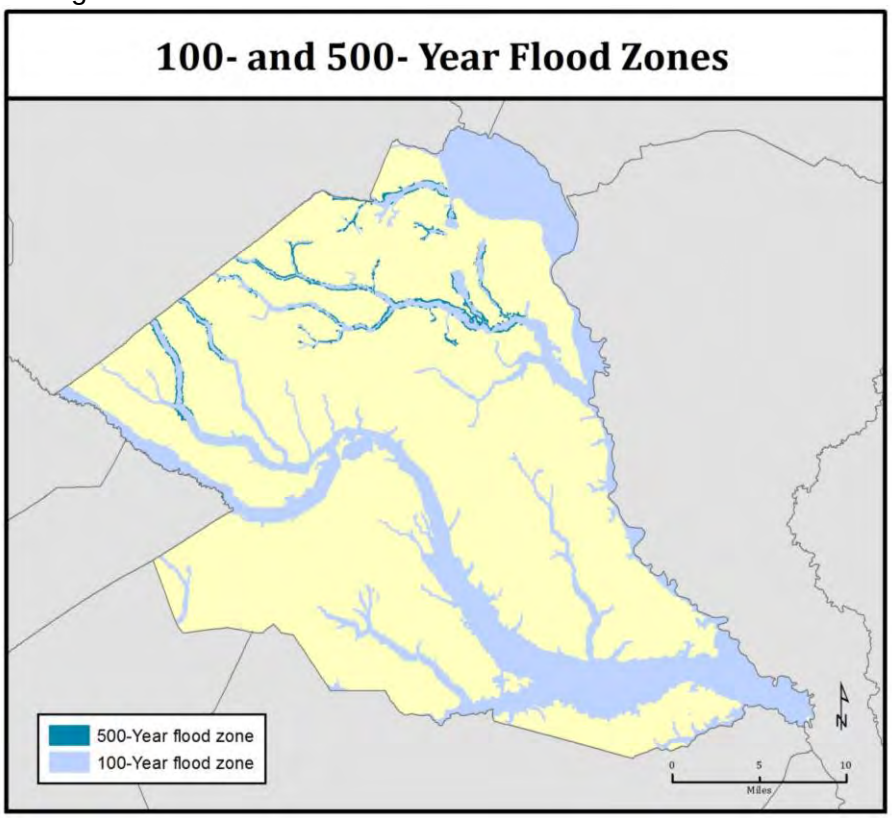
Florence County: This is a large county with generally flat terrain. The western and eastern boundaries of the County are extensive floodplains associated with the Lynches and Great Pee Dee Rivers, respectively. Other floodplains are narrow, except for significant portions of Lynches River, Black Creek and some portions of Jeffries Creek. Although flooding can happen anywhere in South Carolina, given the atmospheric conditions and/or lack of proper maintenance to flood control and drainage systems, flooding typically occurs in floodplains. Floodplains are flat areas adjacent to streams and rivers that are prone to flooding. This area absorbs any overflow of water from the stream or river banks. Floodplains are designated by the frequency of the flood that is large enough to cover the area. For example, the 10-year floodplain will be covered by the 10-year flood and the 100-year floodplain by the 100-year flood. Flood frequencies such as the 100-year flood are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. Another way of expressing the flood frequency is the chance of occurrence in a given year, which is the percentage of the probability of flooding each year. For example, a 10 year flood has a 10 percent probability of occurring in any given year, a 50 year event has a 2% probability, a 100 year event a 1% probability, and a 500 year event a 0.2% probability. While unlikely, it is possible to have two 100 or even 500 year floods within months or years of each other.

Minor Flooding is defined to have minimal or no property damage, but possibly some public threat. Moderate Flooding is defined to have some inundation of structures and roads near the stream. Some evacuations of people and/or transfer of property to higher elevations may be necessary. Communities affected by flood-prone areas in Florence County are listed below.

Table 4 – 6

Jurisdiction/Community	Extent of Flood Prone Areas
Florence County (Unincorporated Area)	Moderate – Several major rivers.
Coward Town	NO DESIGNATED FLOOD-PRONE AREAS
Florence City	Moderate – Southern and Central portions of the City
Johnsonville City	NO DESIGNATED FLOOD-PRONE AREAS
Lake City City	Moderate – Northern edge of City
Olanta Town	Moderate – Western edge of Town
Pamplico Town	NO DESIGNATED FLOOD-PRONE AREAS
Quinby Town	Moderate – Northern edge of Town
Scranton Town	NO DESIGNATED FLOOD-PRONE AREAS
Timmonsville Town	Low – Limited to western and eastern edges

Figure 4 - 6



Historical and Notable Events

To supplement the flood-prone areas just described, a statistical reflection of flood risk has been made using historical flood data summarized below

September 1945 After making landfall as a major hurricane near Homestead, FL, the remnants of the "Homestead Hurricane" produced very heavy rainfall across northeast South Carolina. Darlington, SC reported 7.00'' of rain, Lake City, SC measured 6.30'' of rain, and Dillon, SC received 5.01'' of rain. The Pee Dee River at Pee Dee, SC reached its ALL-TIME highest crest of 33.30 ft. This far surpassed its major flood stage of 28 ft. The Lynches River at Effingham, SC also reached its ALL-TIME highest crest of 21.21 ft.

October 1990 Heavy rains produced riverine flooding which affected Florence and 11 additional counties and costing over $3 million. Lynches River crested at its 6th highest crest of 18.85 ft.

October 1994 Bands of heavy precipitation produced four to ten inches of rain along the South Carolina coast, causing varying degrees of flash flooding in 40 counties. Flash flooding caused $2,932,000 in property damages and $11,720 in crop damages, based on current dollar estimations.

August 1996 Flash Flooding costing over $200,000.

August 2004 When Category 1 Hurricane Gaston made landfall at Bulls Bay in Charleston County it did so as a minimal hurricane with winds of 70 mph. However as it moved inland over South Carolina that day and overnight caused flash flooding across several counties. Rain fall totaling 6.45 inches was reported in Lake City and 9.83 inches in neighboring Cades which lead to this flash flooding.

September 2010: In the Caribbean, a broad area of disturbed weather and disorganized low pressure lingered behind the recently dissipated Tropical Storm Matthew. At the same time, a cold front had made it's way across the Appalachian Mountains, and by Sunday night had become a stationary boundary stalled over the eastern Carolinas while a wave of low pressure was beginning to develop along this boundary over Georgia. Rain totals were Quinby 8.86; Florence 7.71 and Lake City 5.83. These rains caused flash flooding as well as long term standing water and road way flooding.

Recent Activity (2013-2018)

October 2015: A stalled cold front pulled moisture from nearby Hurricane Joaquin. Record breaking rainfall caused extreme flooding across large areas of the state. Accumulations reached as high as 26.88 inches. Flash flood emergencies were issued for several counties. 51 dams across the state were breached or collapsed. Several rivers reached major flood stage. 19 fatalities were confirmed as a result of the flooding. Property damage was estimated to be at least $75,000,000. Emergency orders were issued for 75 dams, and 192 additional dams were identified as needing inspection and potential repairs. In Florence County there were 125 roads washed out or blocked with damage in excess of $200,000.00 State Roads I-95, I-20, Highway 52, Highway 378 and Highway 51 were closed for an extended period of days. There was $4.4 million dollars in damage to 475 privately owned structures in Florence County and its participating jurisdictions. Damage ranged from inches of water affecting crawl spaces to water reaching roof lines in all areas of the county.

October 2016: Hurricane Matthew moved up the southeast coast and slowly weakened to a category 1 storm as it moved up along the South Carolina coast and then eastward near the North Carolina coast. The hurricane brought 6 to 12 inches of rain and up to 15 inches to some areas of northeast South Carolina, with the bulk of the rainfall occurring within a 12 hour period. This rain fell on wet, to in some cases, saturated soil due to much above normal rainfall in September. The result was historic flooding; widespread flash flooding, and an extended period of river flooding in Florence County and all participating jurisdictions. Approximately 25 dams breached and 12 emergency order dams had severe storm damage across the state. Matthew's flooding rains, surge and wind brought loss of life, displaced tens of thousands of people, and caused millions of dollars in Florence County in structural damage as homes and businesses were devastated or totally destroyed. Major infrastructure had to be repaired or rebuilt. Of 2,358 homes and businesses damaged approximately 25% of them were damaged due to flooding. In the municipalities of Coward, Johnsonville, Olanta, Pamplico, Quinby, Scranton and Timmonsville there were reports of homes with inches to feet of water causing substantial damage.

September 2018: Hurricane Florence, a large and slow moving category one hurricane, made landfall during the morning of September 14, 2018 producing record-breaking rainfall across eastern North Carolina and a portion of northeastern South Carolina. South Carolina Emergency Management reported 9 fatalities across the state; $607 million in damages; 11,386 homes with moderate or major damage; 455,000 people evacuated, and 11 dams breached or failed. Record river flooding developed over the next several days. Flooding along the Lynches River prompted the evacuation of 2500 residents from the southern portion of the county on September 21st. Flooding on the Great Pee Dee River shut down a portion of the city of Florence's municipal water system on September 24. Two homes in Florence County were destroyed by Florence's floodwaters, with 52 others damaged for a total of $279,124. Around 250 homes in the county suffered damage, totaling approximately $1 million.

Figure 4 - 7

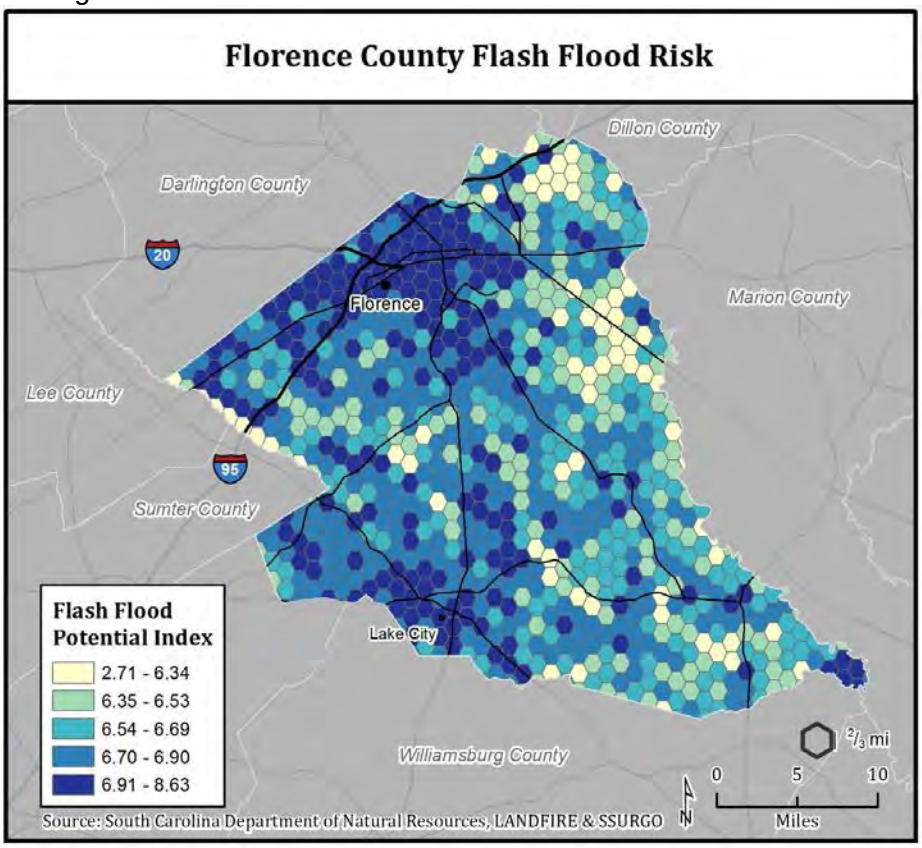


Figure 4 - 8

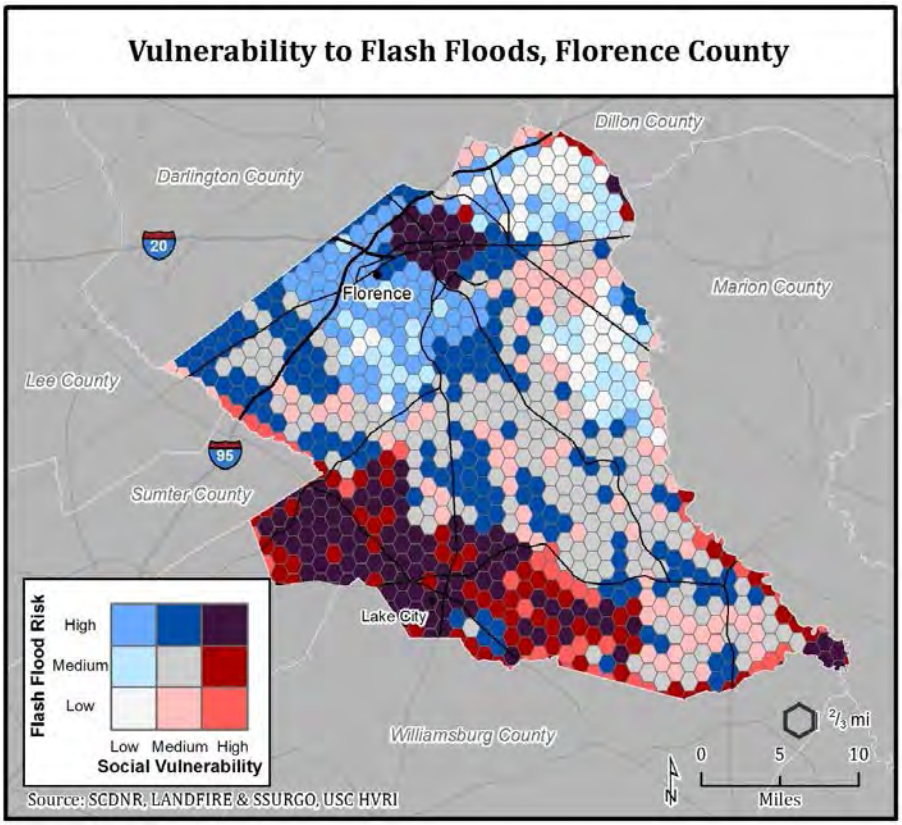
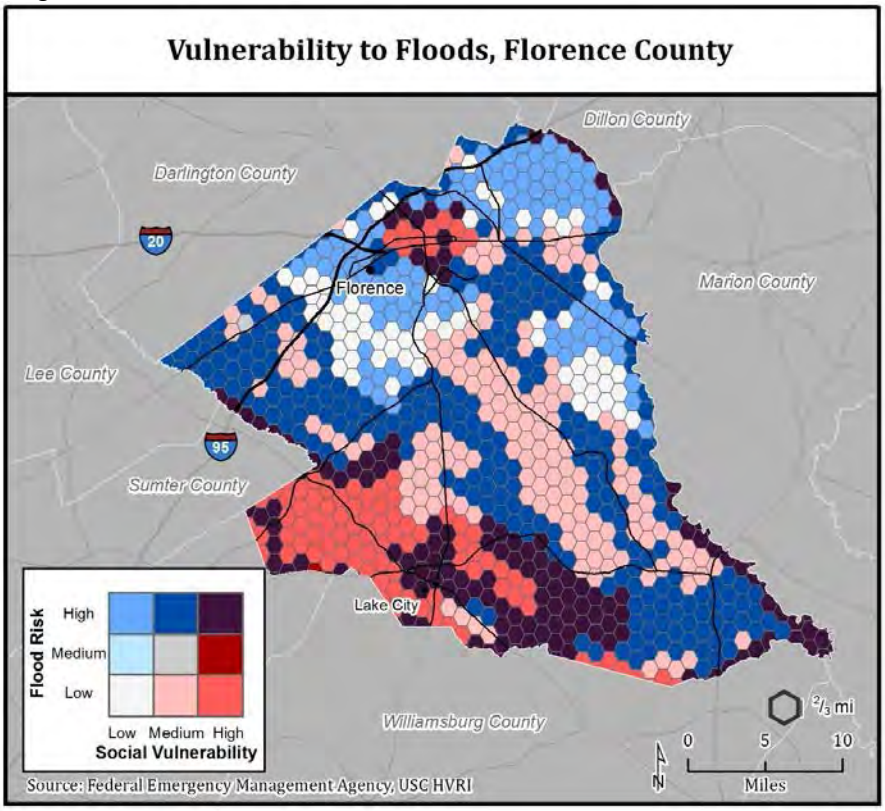

Vulnerability to Flash Floods, Florence County
Dillon County
Darlington County
20
Florence
Marion County
Lee County
95
Sumter County
Lake City
Williamsburg County
Flash Flood Risk
High
Medium
Low
Low Medium High
Social Vulnerability
2/3 mi
0 5 10
Miles
N
Source: SCDNR, LANDFIRE & SSURGO, USC HVRI

Figure 4 - 9


Vulnerability to Floods, Florence County
Dillon County
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Marion County
Lee County
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Sumter County
Lake City
Williamsburg County
Flood Risk
High
Medium
Low
Low Medium High
Social Vulnerability
2/3 mi
0 5 10
Miles
N
Source: Federal Emergency Management Agency, USC HVRI

Vulnerability

The following section provides information on hazard vulnerability across South Carolina. Specifically, this section provides tables and maps to summarize historical and recent flood events and their associated losses (property damage, crop damage, fatalities, and injuries). The totals for these losses were calculated from the NCDC Storm Events database and SHELDUS.

Details on historical and recent impacts Florence County are as follows:

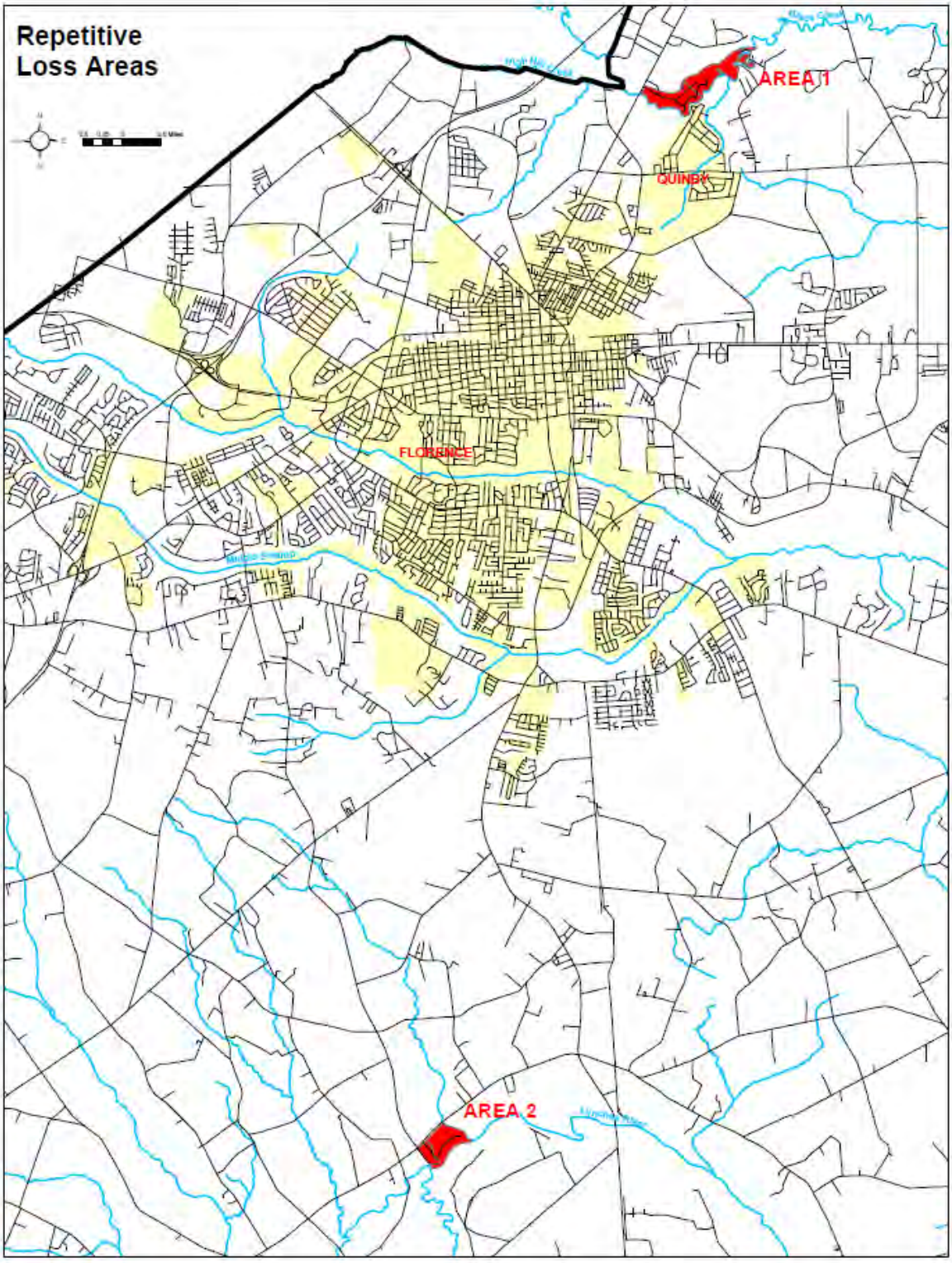
Historical Impacts between the years of 1960 to 2015 are $276,775 for annualized losses with no deaths or injuries recorded. Recent impacts between 2016 to 2018 are $2,551,218 annualized losses with 2 deaths and no injuries. In addition, flood maps were created for 100 and 500-year (Figure F-6) flood events. Where available, the new DFIRM maps depicting the 1% chance flood were used. A map of flash flood risk as well as maps of flood and flash flood vulnerability are also included (4 - 8, 4 - 9).

Repetitive Loss Properties

FEMA defines a repetitive loss property as any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling 10-year period, since 1978. A repetitive loss property may or may not be currently insured by the NFIP.

Community	Building Payments	Content Payments	Total Payments	Average Payment	Losses	Properties
Florence County	$1,891,568.66	$312,366.61	$2,203,935.27	$11,360.49	96	40
City of Florence	$116,571.49	$834.78	$117,406.27	$5,870.31	10	5
City of Lake City	$7,840.53	$0	$7,840.53	$3,920.27	2	1

The following map shows the location of the repetitive loss properties for the unincorporated areas of Florence County. All of the repetitive loss properties are in the AE zone and are residential. There are currently no repetitive loss properties within the limits of the Town of Pamplico, The Town of Quinby, The Town of Scranton, the Town of Timmonsville, the Town of Olanta, or the Town of Johnsonville. The Town of Coward does not participate in the National Flood Program because it has a lack of flooding history. Each jurisdiction will continue to comply with NFIP thought adoption and enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs), floodplain identification and mapping, including any local requests for map updates.


Repetitive
Loss Areas
AREA 1
QUINBY
FLORENCE
AREA 2

Hailstorms:

Hail is frozen droplets of water that are carried between colder and warmer elevations within a thunderstorm, with another layer of ice being added with each re-freeze until the frozen ball is so large it falls to earth. It is a costly result of severe thunderstorm activity in the nation. Hail can occur anywhere the conditions are favorable. All of Florence County and its municipalities are equally susceptible to hail.

Table 4 - 7

TORRO Hailstorm Intensity Scale			
	Intensity Category	**Typical Hail Diameter (mm)***	**Typical Damage Impacts**
H0	Hard Hail	5	No damage
H1	Potentially Damaging	5-**15**	Slight general damage to plants, crops
H2	Significant	10-**20**	Significant damage to fruit, crops, vegetation
H3	Severe	20-**30**	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-**40**	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-**50**	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-**60**	Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-**75**	Severe roof damage, risk of serious injuries
H8	Destructive	60-**90**	(Severest recorded in the British Isles) Severe damage to aircraft bodywork
H9	Super Hailstorms	75-**100**	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Historical and Notable Events:

May 25, 2000: A severe thunderstorm caused straight-line winds and dime size hail in Darlington, as well as 2-inch hailstones to the south of the city. Property damage was estimated at $150,000. The County Agricultural Service reported several areas of crop damage near Highway 401, estimated at $10,000. In Florence, a severe thunderstorm caused large hail and wind gusts estimated at over 80 mph. The largest hail size was estimated at over four inches in diameter, causing extensive damage to roof and siding. Approximately 2,000 homes were damaged, with repair costs exceeding $6,000,000.00. The storm knocked out power to over 20,000 residences. Two injuries were reported due to broken glass impacted by hail.

April 9, 2011: Supercell thunderstorms across the upper Midlands and Pee Dee regions produced hail up to the size of baseballs. Property damage estimates for this significant event is $45 million for across the state

From 1950 to 2018, there were more than 165 recorded events. Due to the large number of events, the maps below reflect the events within 1986 – 2015 and the past four years.

Vulnerability

The following section provides information on hazard vulnerability across Florence County. Specifically, this section provides information and maps to summarize historical and recent hail events and their associated losses (property damage, crop damage, fatalities, and injuries). The totals for these losses were calculated from the NCDC Storm Events database and SHELDUS.

The future probability for occurrence is 417 with a frequency interval of .24. The historical impact between 1960 to 2015 shows an annualized loss of $ 272,480 with no deaths and 4 injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $5,412 with no deaths or injuries reported.

Figure 4 - 10

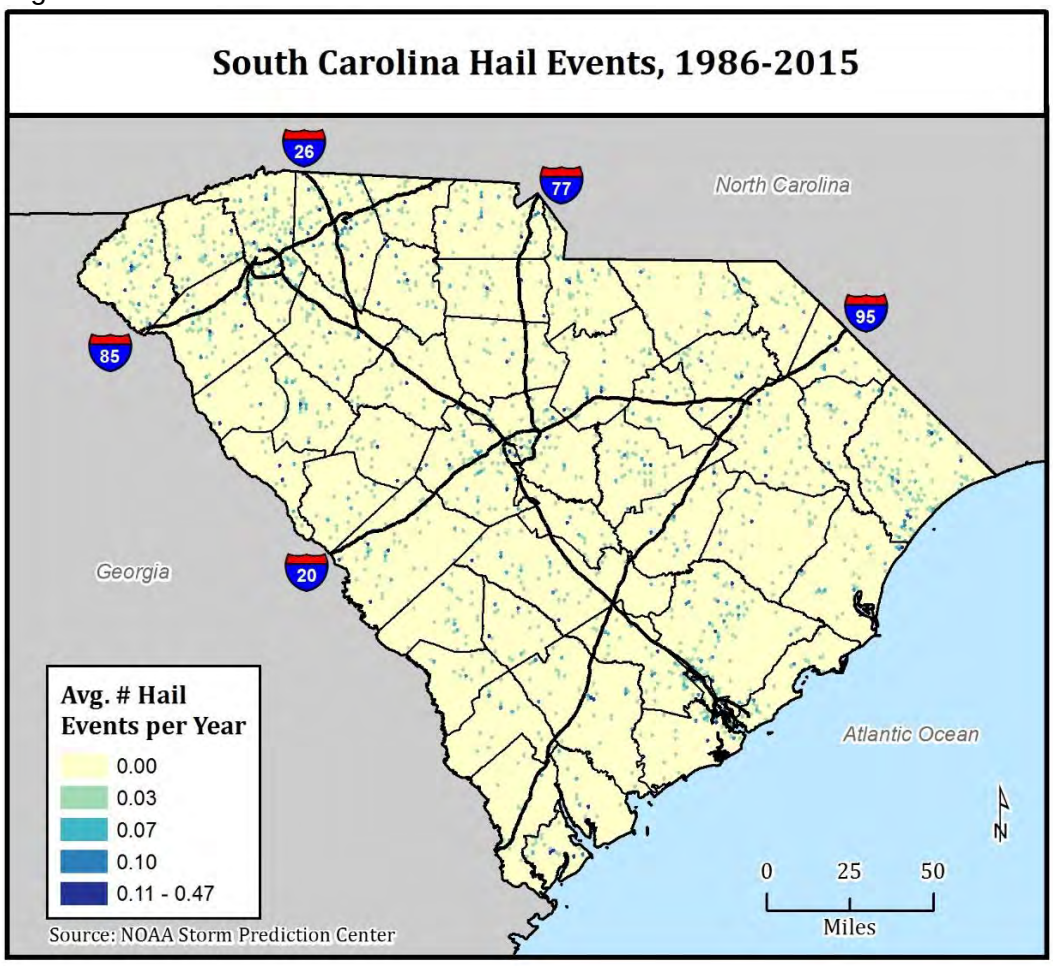


Figure 4 - 11

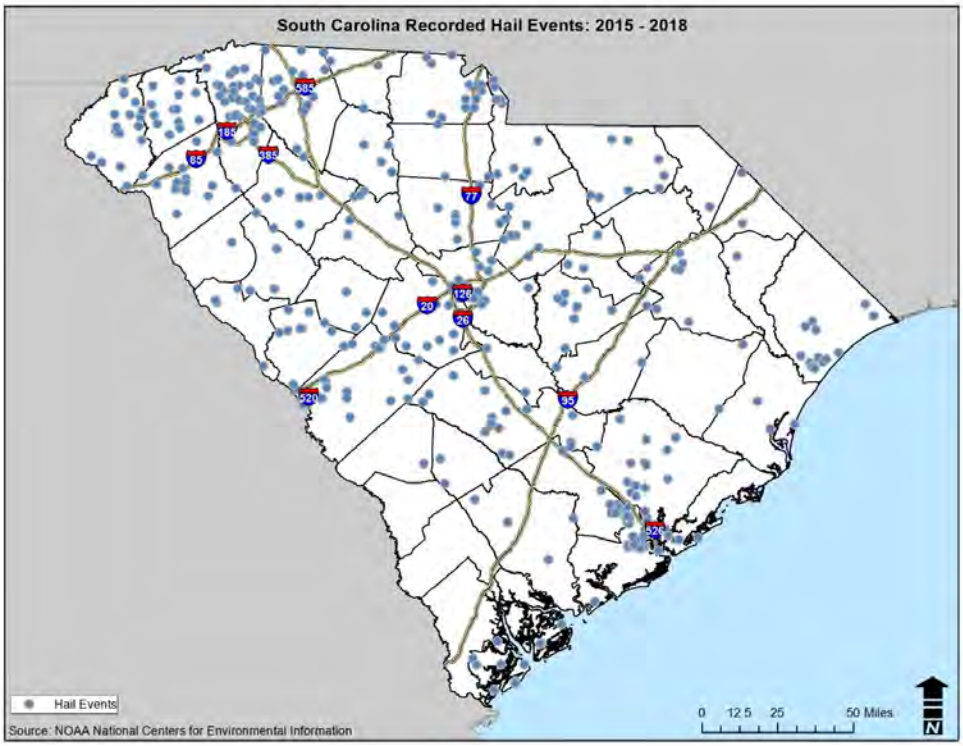
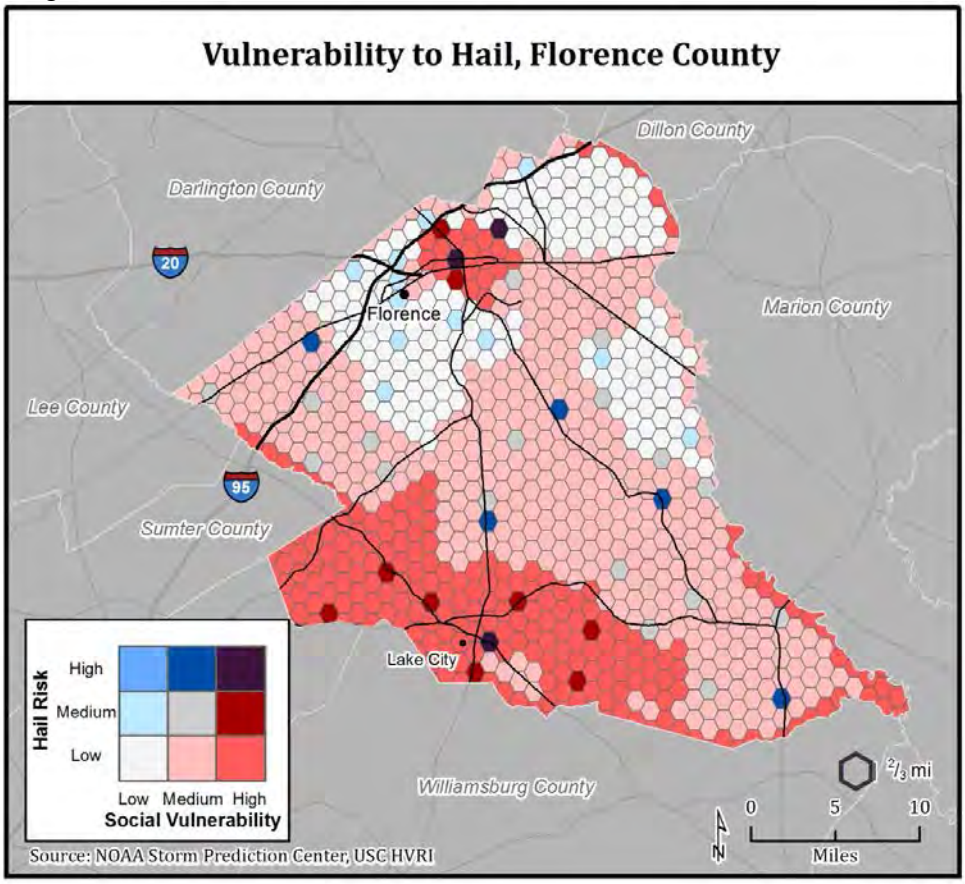


Figure 4 - 12



Hurricanes:

According to NOAA, prior to hurricanes being named in 1952, there were approximately 86 unnamed tropical storm or hurricane events of at least 25 mph winds recorded in the region between 1851 and 1951. For these unnamed storms, highest recorded winds were 100 mph, and for only four storms. In contrast, from 1952 through 2004, 50 named storms have struck all or a part of the region. From 2005 until present we have been impacted from 8 hurricanes within this area. Hurricanes are large events and can affect all of Florence County. The most severe storms being the following:

Hurricane Hazel October 1954: Hazel made landfall as a Category 3 hurricane near Little River, bringing storm surge up to 16.9 feet. One fatality and approximately $27 million in damages were reported. Hurricane Hazel is considered one of the most severe storms to hit South Carolina to date.

Hurricane Hugo September 21, 1989: Hugo, a Category 4 hurricane made landfall at Isle of Palms with sustained winds of 140 mph and wind gusts exceeding 160 mph. Hugo is the costliest storm in South Carolina history, causing over $7 billion in damages to property and crops in the United States and the first major hurricane to strike the state since Gracie in 1959. Total damages, including those that occurred in Puerto Rico and the Caribbean, exceeded 10 billion dollars. Hurricane Hugo resulted in 35 storm-related fatalities, 20 of which occurred in South Carolina. Seven of the South Carolina fatalities occurred in mobile home parks northwest of Charleston. The strongest winds passed over the Francis Marion National Forest between Bulls Bay and the Santee River. The Forest Service estimated that timber losses exceeded $100 million. While the most severe winds occurred to the northeast of Charleston, the city was hard hit. The Charleston City Hall and a fire station lost their roofs and over 4,000 historic properties were damaged. Coastal storm surge reached 20 feet in some areas, making it the highest ever recorded in the state. Folly Beach was among the most significantly impacted coastal communities. Approximately 80 percent of the homes were destroyed. Sullivan's Island and the Isle of Palms were also severely damaged. Numerous homes were knocked off their foundations and boats in the local marina were tossed into a 50 foot tall pile of debris. Severe inland wind damage occurred as winds gusting to 109 mph at Sumter were reported. The hurricane exited the state just north of Rock Hill, causing significant damage in Charlotte, North Carolina. South Carolina received a Presidential Disaster Declaration for this event.

Hurricane Floyd (September 15, 1999): Hurricane Floyd weakened to a Category 3 hurricane as it approached the southern South Carolina coast on the morning of September 15th. The storm skirted the coast, its center moving northeast about 60 miles offshore late in the afternoon and early evening as it took a north and northeast course toward North Carolina. Sustained winds of tropical storm force were reported from Savannah, Georgia to Charleston, with wind gusting to hurricane force strength in the Charleston area. The highest recorded sustained wind speed was 58 mph in downtown Charleston; with gusts reaching 85 mph. Rainfall was heavy along coastal counties as 12 inches of rain fell in Georgetown County. A reported 18 inches fell in eastern Horry County, causing major flooding along the Waccamaw River in and around the City of Conway for a month. Waves were reported to be 15 feet at Cherry Grove Pier, where damage was the greatest. Minor to moderate beach erosion occurred along the South Carolina coast. Many businesses and homes suffered major damage, with thousands of homes experiencing at least some minor damage in Charleston County, causing approximately $10.5 million in damage. In Horry County, approximately 400 homes and numerous roads were

inundated for over one month following the storm. Beaufort County reported $750,000 damage, and Berkeley and Dorchester counties reporting $500,000 each. Over 1,000 trees were blown down, knocking out power to over 200,000 customers across the southern coast. In Myrtle Beach, tree and sign damage was reported to reach approximately $250,000. In Williamsburg County, total damage estimates due to the high winds and rain reached approximately $650,000. In Florence County, high winds downed trees, caused power outages and resulted in $150,000 in property damages. Total estimated property damages for the impacted counties totaled approximately $17 million. While Hurricane Floyd did not make landfall in South Carolina, it resulted in the largest peacetime evacuation in the state's history, surpassing Hurricane Fran. It is estimated that between 500,000 and one million people evacuated the coast. South Carolina received a Presidential Disaster Declaration for this event.

Hurricane Gaston (August 29, 2004): Gaston reached Category 1 sustained wind speeds before making landfall as a tropical storm near Awendaw, South Carolina. The next day, Gaston weakened to a tropical depression in the northeastern portion of the state. Charleston and Georgetown Counties had voluntary evacuation issued for barrier islands, low-lying areas, beachfront areas, mobile homes, and other places that are prone to flooding. Localized flooding occurred from storm surge of roughly four feet. Peak wind gusts were recorded at 82 mph in Charleston and Isle of Palms. There were strong winds from this slow storm that knocked down trees, power lines, and caused major structural damage.

Recent Activity 2014 - 2019

TS Ana May 2015: Ana made landfall near Myrtle Beach, SC around 6:00 am on Sunday May 10, 2015. At the time maximum sustained winds had decreased to 45 mph with a central pressure of 1002 millibars or 29.59 inches Hg. The storm then steadily weakened as it dumped over six inches of rain across from North Myrtle Beach, SC to Oak Island and Southport, NC.

Hurricane Matthew October 2016: Matthew's largest impact across the Carolinas was flooding from historic rainfall. Twelve to eighteen inches of rain fell over large portions of interior South and North Carolina. The City of Florence Had $2.5 million in debris removal costs, primarily associated with downed trees. Rainfall rates increased to one to two inches per hour early in the morning of October 8th. The first reports of significant flooding arrived between 7:00 a.m. and 8:00 a.m. with road closures in Florence, S.C. where two people died when their vehicle was swept away by floodwaters. Of 2,358 homes and businesses damaged approximately 75% of them were damaged due to winds and falling trees. In the Florence County and participating jurisdictions there were reports of homes with damage ranging from shingle damage to roofs completely blown off of the structures. There were also many reports of trees on homes and businesses causing substantial damage.

Hurricane Florence September 2018: Wind damage occurred to some trees and signs from wind gusts over 60 mph, but impacts were considered generally minor. At the storm's peak around 12,000 customers were without power across Florence County. Flooding along the Lynches River prompted the evacuation of 2500 residents from the southern portion of the county on September 21st. Flooding on the Great Pee Dee River shut down a portion of the City of Florence's municipal water system on September 24. Two homes were destroyed by Florence's floodwaters, with 52 others across Florence County and participating jurisdictions were damaged for a total of $279,124. Around 250 homes in the county suffered damage to roofs from the wind, totaling approximately $1 million.

Of course, not all storms affected Florence County but, using the multiple tracks for each hurricane, these events have been compiled into the attached graphic. This is a composite of all events, including tropical storms and tropical depressions as well as hurricanes of all categories. Hurricanes are large events and can affect all of Florence County. Also attached is the graphic "Historical Chance Per Year", showing probabilities for this region of the state. The worst event was Hurricane Hugo on September 22, 1989. It came ashore as a category 4 hurricane with winds of 135mph. As it passed over Florence County it was a weak category 4. A category 4 storm is the highest probable intensity expected to impact Florence County.

Figure 4 - 13

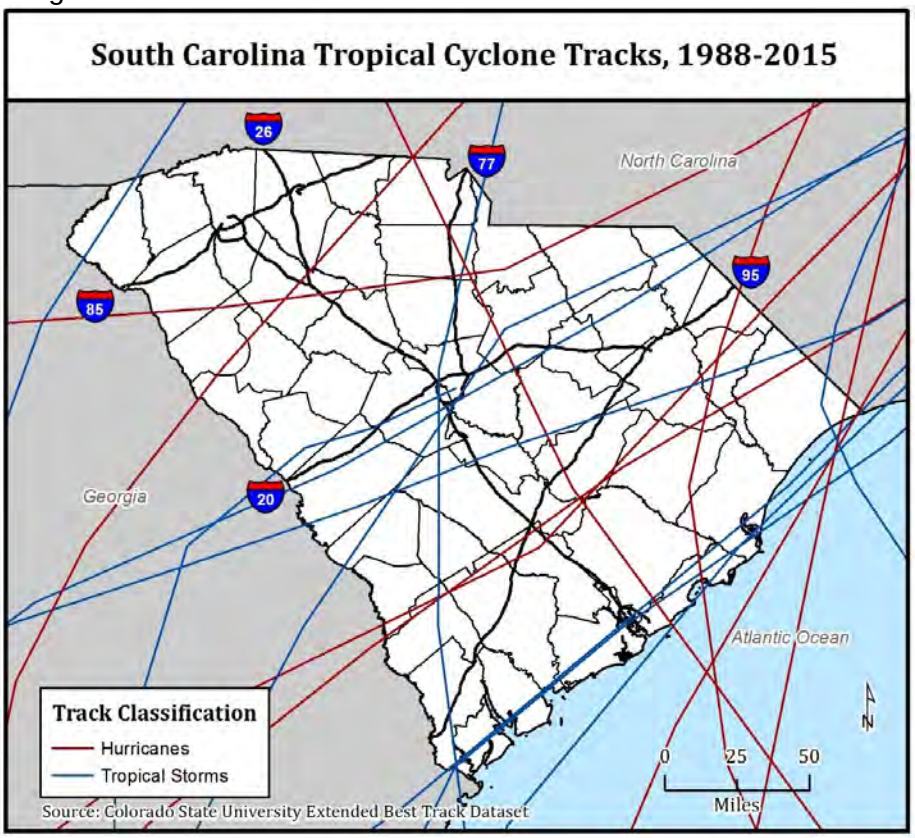


Figure 4 - 14

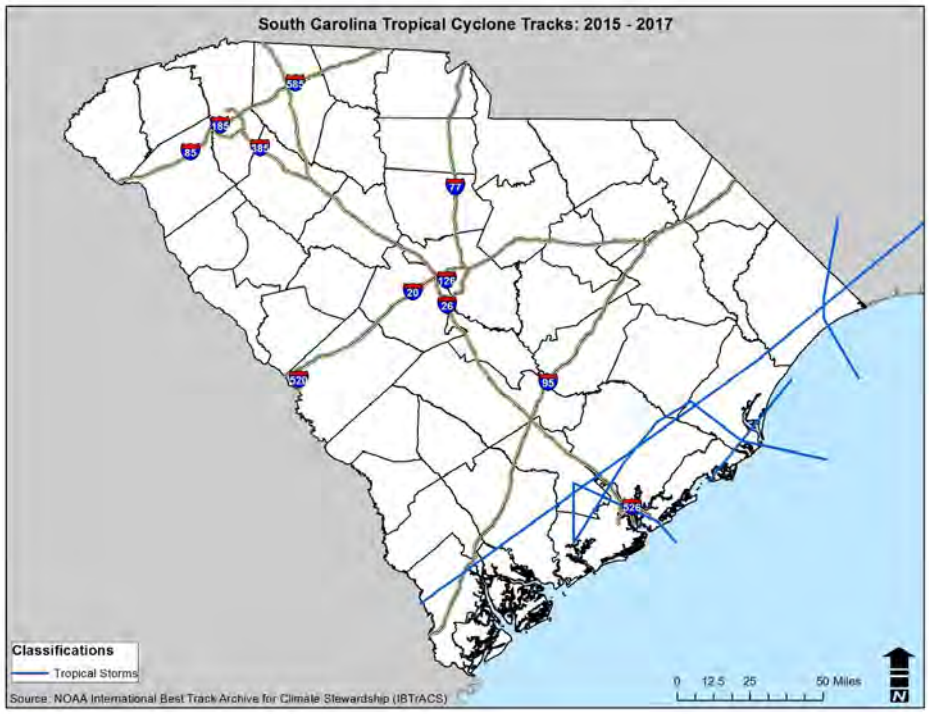


Table 4 - 8

Jurisdiction/Community	Likelihood of hurricane activity
Florence County (Unincorporated Area)	Moderate
Coward Town	Moderate
Florence City	Moderate
Johnsonville City	Moderate
Lake City City	Moderate
Olanta Town	Moderate
Pamplico Town	Moderate
Quinby Town	Moderate
Scranton Town	Moderate
Timmonsville Town	Low-moderate

Table 4 - 9

SAFFIR-SIMPSON SCALE

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 kt 119-153 km/h	**Very dangerous winds will produce some damage:** Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 kt 154-177 km/h	**Extremely dangerous winds will cause extensive damage:** Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111-129 mph 96-112 kt 178-208 km/h	**Devastating damage will occur:** Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 kt 209-251 km/h	**Catastrophic damage will occur:** Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	**Catastrophic damage will occur:** A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Vulnerability

The following section provides information on hazard vulnerability across Florence County. Specifically, this section information and maps to summarize historical and recent hurricane events and their associated losses (annualized losses, fatalities, and injuries). The totals for these losses were calculated from the National Climatic Data Center (NCDC) Storm Events database, and the Spatial Hazard Events and Losses Database for the US (SHELDUS). Hazus is also used to model impact from hurricane winds. Historical hurricane track data came from NOAA's International Best Track Archive for Climate Stewardship (IBTrACS).

Florence County building inventory is reportedly $5,013,948 for residential; $1,636,444 for commercial; $778,206 listed as other for a total of $7,428,598. These values are used in later calculations for building exposure to specific hazard types. Hazus uses this data to estimate loss and damage to buildings. Florence County has a future probability of 43 with a frequency interval of 2.33. The historical impact between 1960 to 2014 shows an annualized loss of $ 3,428,494 with no deaths or injuries. The recent impacts between 2015 and 2018 shows an annualized loss of $1.5 million with 2 deaths or multiple injuries reported.

Figure 4 - 15

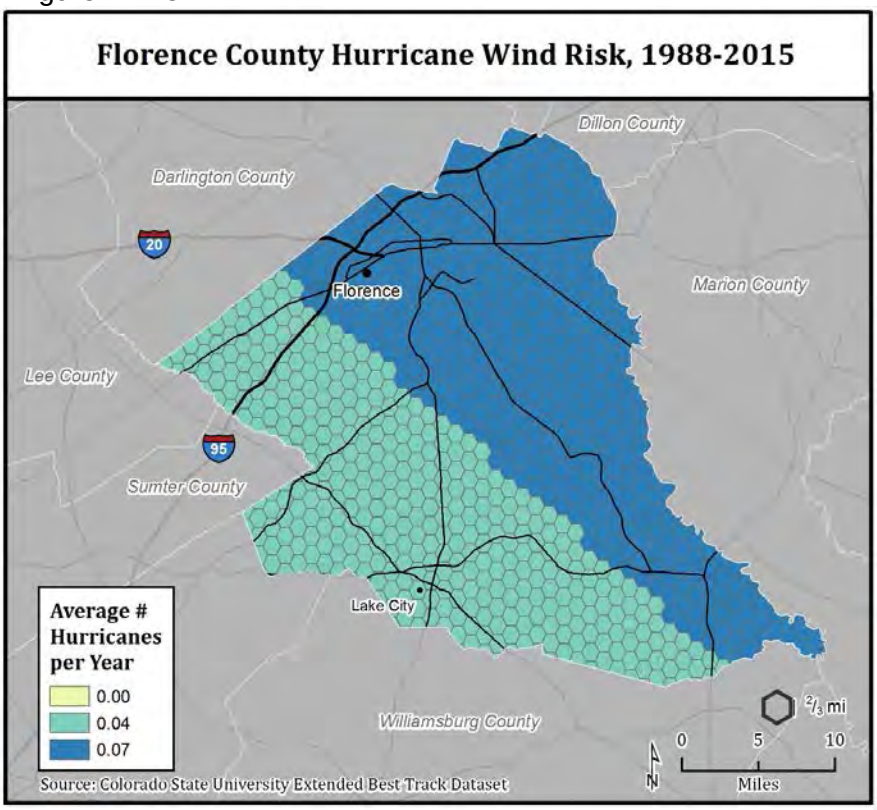
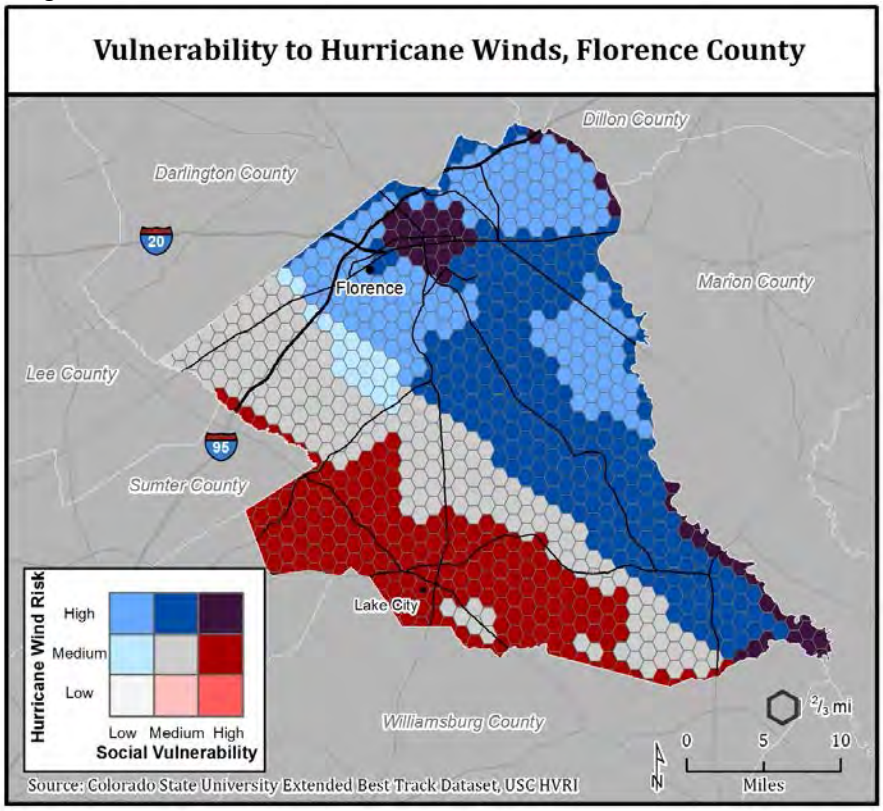


Figure 4 - 16



Tornadoes:

These violently rotating columns of air extend from thunderstorms to the ground and are among the more violent and deadly natural phenomena. Tornadoes can occur anywhere the conditions are favorable. All of Florence County and its municipalities are equally susceptible to tornadoes. Historically Florence County has experienced an EF2 tornado giving Florence County a range of potential from EF0 to EF2. Data was collected from 1950 through 2018, with the below summarizing the events.

January 8, 1953: Two people were injured when an F2 tornado touched down in Florence County near Effingham, SC.

July 28, 1963: An F2 tornado killed 3 people and injured 12 when it touched down in Dillon, SC and moved northeast into Robeson County near Lumberton, NC. The tornado continued for 85 miles before finally lifting. This same system produced an F1 tornado that touched down in Effingham, SC.

September 29, 1963: An F2 tornado touched down in Effingham S.C.

March 26, 1965: An F2 tornado touched down in Lake City, S.C.

March12, 1967: Two F2 tornadoes touched down in Florence County, S.C.

June 8, 1980: An F1 tornado injured two people when it touched down southeast of Lake City, SC.

May 27, 1981: Six people were injured when an F2 tornado touched down northwest of Pamplico.

September 24, 1994: An F1 tornado touched down and caused 11 injuries.

November 7, 1995: A severe weather outbreak across the Southeast produced numerous tornadoes in the eastern Carolinas. The strongest tornado of the day was an F4 that injured 1 person in Marion County northwest of Galivants Ferry, SC. An F2 tornado injured 122 people in Columbus County near Brunswick, NC. F2 tornadoes also touched down in Conway, SC and Florence, SC (4 injuries). An F1 tornado injured 11 people in Kingstree, SC. Another F1 tornado injured 1 person in Georgetown County between Andrews and Georgetown, SC. Still another F1 tornado was confirmed in rural Darlington County. F0 tornadoes touched down near Dillon, SC and near Lumberton, NC.

March 22, 1997: An F1 tornado injured two people west of Lake City, SC. Another F1 tornado injured one person when it touched down in Conway, SC.

September 7, 2004: The remnants of Hurricane Frances resulted in a tornado outbreak across the Carolinas. 6 F1 tornadoes and 6 F0 tornadoes were confirmed within our forecast area. Tornado (F0)At 5:45 pm, a tornado began in Florence County 2.6 miles N of Quinby. The tornado continued 0.4 miles across Florence County and reached 3.0 miles N of Quinby before exiting the county. The tornado then entered Darlington County 7.9 miles ESE of Darlington, and continued 0.6 miles before ending 7.5 miles ESE of Darlington at 5:47 pm. The total path length was 1.0 mile and the total path width was 30 yards.

May 14, 2006: Tornado (F1) This Mother's Day severe weather event brought tornadoes, hail, and damaging winds to the Carolinas. Our office confirmed three tornadoes touched down in the Pee Dee region. An F2 tornado in the Glendale community near Florence, SC damaged about 60 homes and uprooted/snapped many trees. An F1 tornado in Florence, SC downed trees and damaged an

industrial area, while another F1 tornado southwest of Darlington, SC injured one person. Elsewhere, baseball size hail was reported near Mullins, SC, and golf ball size hail fell in Quinby, SC.

March 15, 2008: A severe weather outbreak across the Carolinas resulted in seven confirmed tornadoes within our forecast area. Three people were injured in an EF1 tornado near Timmonsville, SC. EF1 tornadoes near Greeleyville, SC and Trio, SC destroyed five homes and damaged over 40 more homes. Another EF1 tornado damaged numerous homes and businesses in Hampstead, NC. EF0 tornadoes were confirmed near Latta, SC, Aynor, SC, and Fair Bluff, NC.

July 2, 2013: An EF-1 tornado (estimated maximum winds: 105 mph) touched down near Quinby, SC, injuring 8 people. The tornado snapped trees and destroyed 10 mobile homes while damaging 8 others.

Table 4 - 10

Enhanced Fujita Scale		
Category	Wind Speed	Potential Damage
EF0	105–137 km/h 65–85 mph	Light damage. Peels surface off roofs; some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; mobile homes pushed off foundations or overturned; sign boards damaged.
EF1	138–179 km/h 86–110 mph	Moderate damage. Roofs torn off frame houses; windows and glass doors broken; moving autos blown off roads; mobile homes demolished; boxcars overturned.
EF2	180–217 km/h 111–135 mph	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	218–266 km/h 136–165 mph	Severe damage. Some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	267–324 km/h 166–200 mph	Devastating damage. Well-constructed houses and whole frame houses completely leveled; structures with weak foundations blown away some distance; trees debarked; cars thrown and small missiles generated.
EF5	>324 km/h >200 mph	Incredible damage. Strong frame houses leveled off foundations and swept away; with strongest winds, brick houses completely wiped off foundations; automobile-sized missiles fly through the air in excess of 100 m (109 yd); cars thrown and large missiles generated; incredible phenomena will occur.

Table 4 - 11

Jurisdiction/Community	Probability of tornado activity
Florence County (Unincorporated Area)	Moderate-high
Coward Town	High
Florence City	Moderate-high
Johnsonville City	Low
Lake City City	Moderate-high
Olanta Town	Low-moderate
Pamplico Town	Low
Quinby Town	High
Scranton Town	High
Timmonsville Town	Moderate

Vulnerability

The following section provides information on hazard vulnerability across Florence County. Specifically, this section provides information and maps to summarize historical and recent tornado events and their associated losses (property damage, crop damage, fatalities, and injuries). The totals for these losses were calculated using NCDC and SHELDUS data.

Florence County has a future probability of 53 with a frequency interval of 1.88. The historical impact between 1960 to 2015 shows an annualized loss of $ 67,821 with no deaths and 35 injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $22,383 with no deaths and 9 injuries reported.

Figure 4 – 17

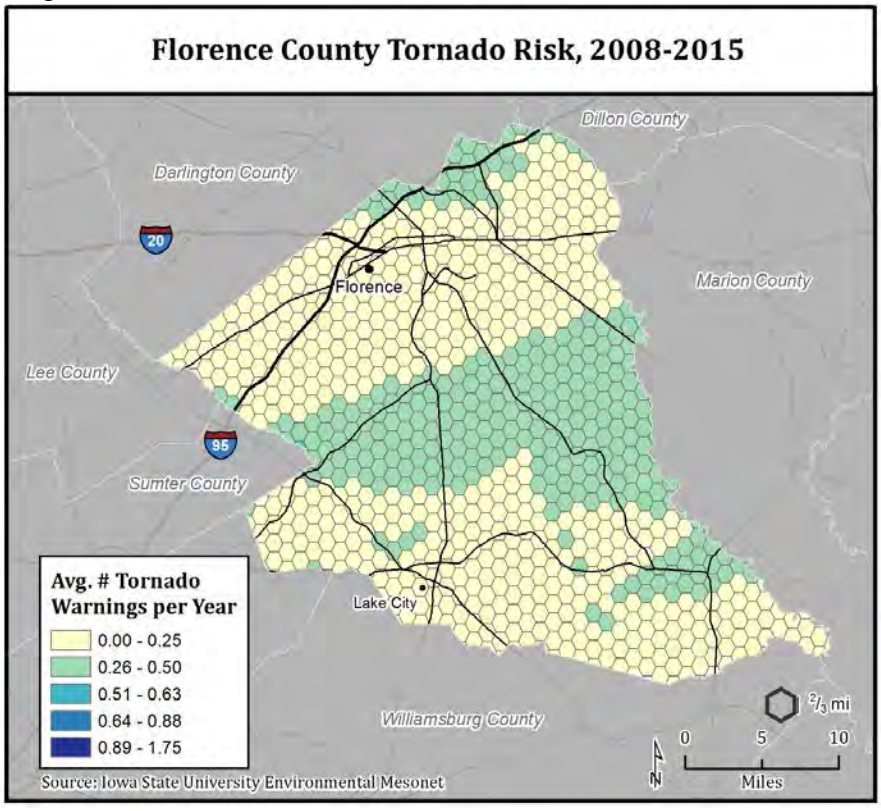


Figure 4 - 18

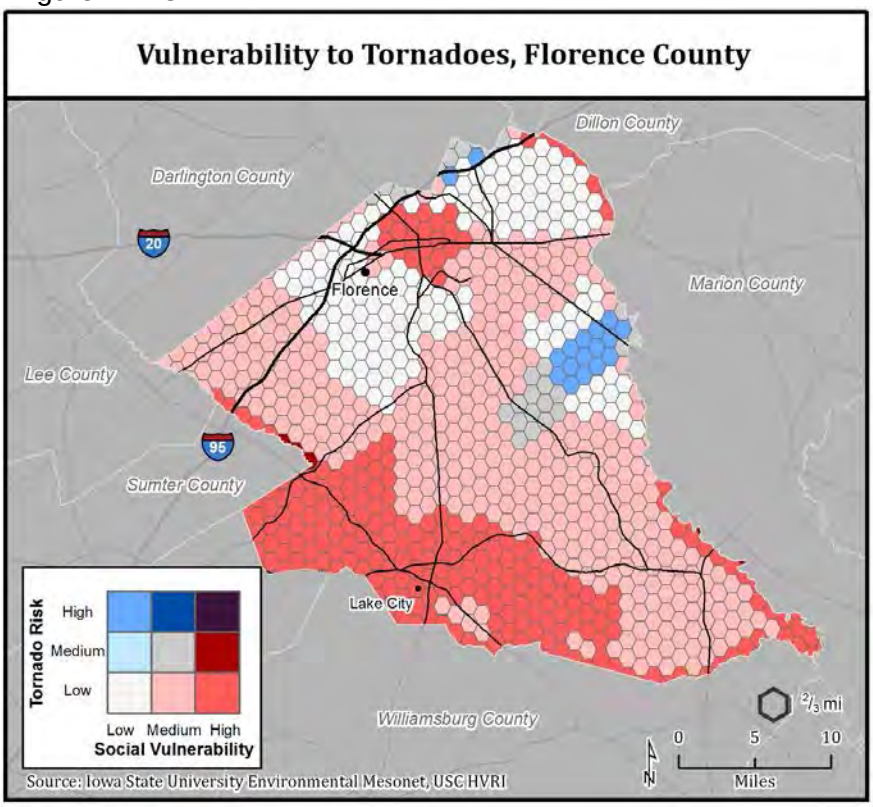
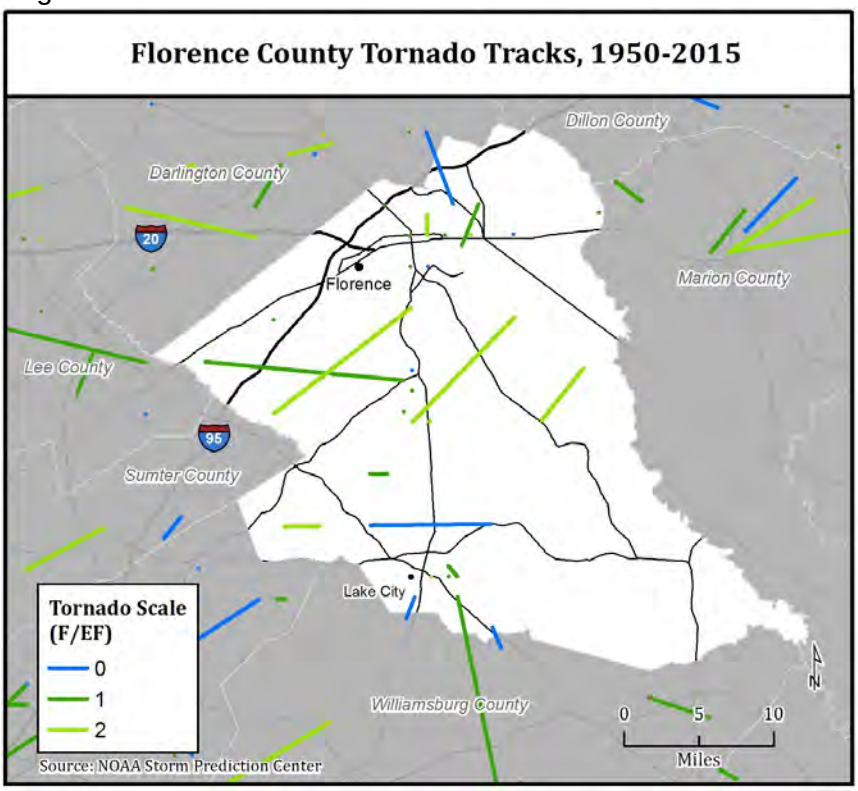


Figure 4 - 19



Wildfires:

The South Carolina Forestry Commission is responsible for protecting 13.6 million acres from wildland fire; this includes 12.2 million acres of commercial forestland.

The Forestry Commission has a statewide wildland fire prevention, detection and control network in place. Personnel are assigned throughout the state in a series of unit, regional, and headquarters offices. The largest single group of employees -wildland firefighters -report directly from their residences in responding to wildland fires. Forestry Commission dispatch is by closest available resource, regardless of political or administrative boundaries.

There are approximately 439 county, municipal, and volunteer fire departments operating 1,122 fires stations in South Carolina. Most of these fire departments respond to wildland fires and control a large number of the wildland fires before they become destructive. The fire departments and the Forestry Commission work together to control wildland fires. Most of the fire departments are not equipped to control wildland fires that have burned beyond areas that can be reached from roads.

Forestry Commission firefighters respond to more than 3,000 wildland fires burning about 20,000 acres per year; 98% of the wildland fires are caused by human activities. Fire departments respond to more than 20,000 grass, brush, woods, or rubbish fires per year.

With over 3,000 wildfires each year in South Carolina, this is a common hazard. Wildfires can result from natural causes, but most result from man-made action, most commonly arson and debris-burning. Other causes are less than 5 percent of occurrences. Florence County can expect between 57 and 537 fires a year, burning up to 4,864 acres. A wildfire is any outdoor fire (i.e. grassland, forest, brush land) that is not under control, supervised, or prescribed and can occur in the majority of Florence County.

Table 4 - 12

Jurisdiction/Community	Probability of wildfire activity
Florence County (Unincorporated Area)	Moderate-high
Coward Town	High
Florence City	Moderate
Johnsonville City	Low
Lake City City	Moderate-high
Olanta Town	Low-moderate
Pamplico Town	Low
Quinby Town	Low-moderate
Scranton Town	High
Timmonsville Town	Moderate

The following table provides an indication of the mean number of wildfires per year, the mean acres destroyed and overall probability:

Table 4 - 13

Year	Fires	Acres Burned
1996	120	687
1997	85	460
1998	57	184
1999	375	2423
2000	248	895
2001	277	1186
2002	437	4864
2003	58	121
2004	173	870
2005	100	496
2006	140	618
2007	120	370
2008	229	723
2009	107	647
2010	74	225
2011	158	483
2012	153	802
2013	60	250
2014	60	213
2015	69	274
2016	27	74
2017	75	549
2018	73	463
Total	3275	17877

Vulnerability

The following section provides information on hazard vulnerability across Florence County. Specifically, this section provides tables and maps to summarize historical and recent wildfire events and their associated losses (property damage, crop damage, fatalities, and injuries). The totals for these losses were calculated from the National Climatic Data Center (NCDC) Storm Events database, and the Spatial Hazard Events and Losses Database for the US (SHELDUS). The large quantity of points is best represented as a raster point density map for display in Figure 4 – 20b.

Historically, in April of 2002 Florence County experienced a 513 acre wildfire in the Lake City area. The damage was contained to woodland and farm fields, which had no crops planted at the time. Figure 4-21 shows the area affected.

Florence County has a future probability of 16,433 with a frequency interval of 0.01. The historical impact between 1960 to 2015 shows an annualized loss of $ 6,555 with no deaths or injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $0 with no deaths or injuries reported. The data used for the analysis here come from a variety of sources.

Historical loss and damage information comes from SHELDUS, while the number of events and acreage burned comes from the South Carolina Forestry Commission. The probability of acreage burned is analysis performed by the Hazards and Vulnerability Research Institute.

Figure 4 – 20a

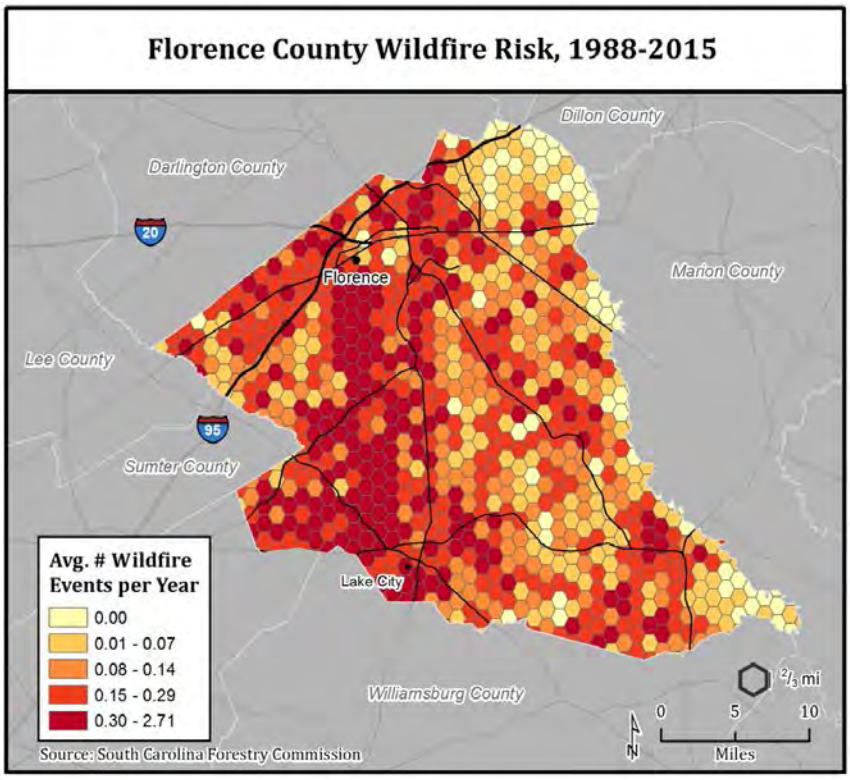


Figure 4 – 20b

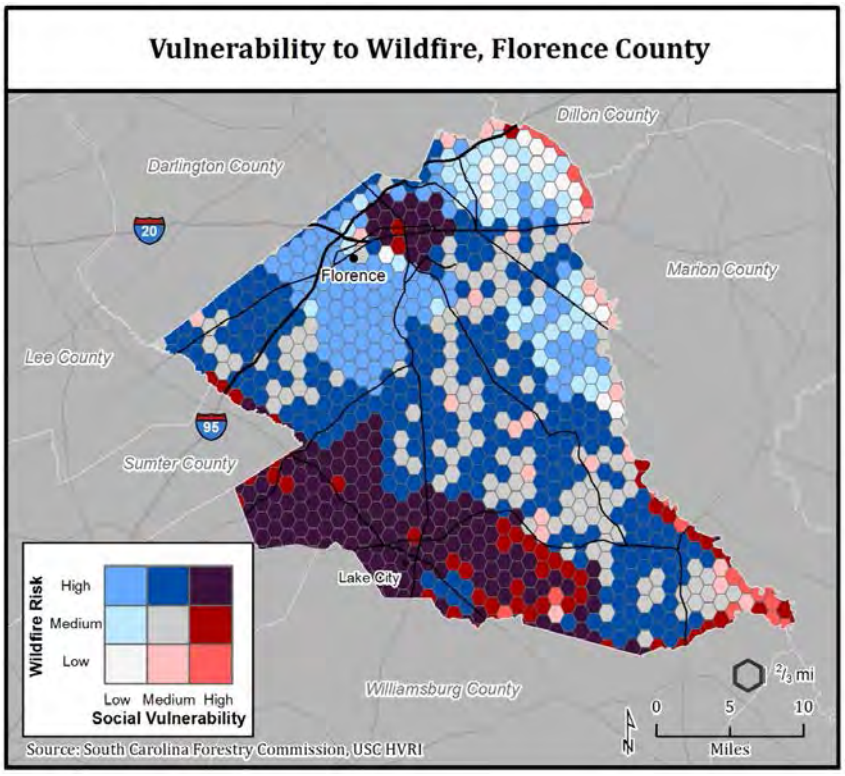
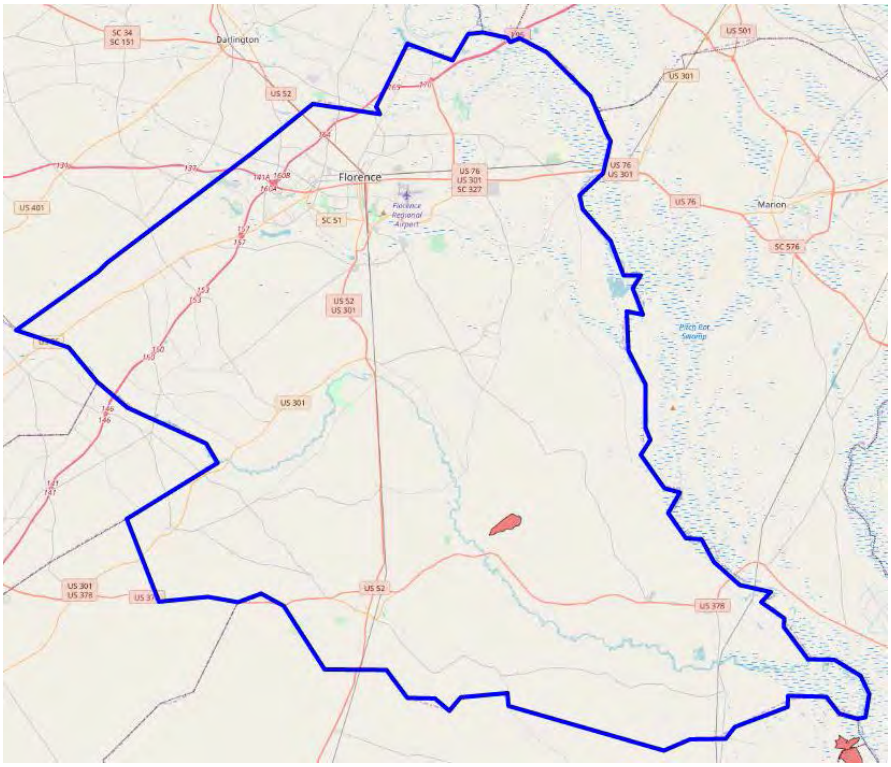


Figure 4-21



Thunderstorms and Lightning:

Strong winds are a common ingredient to most thunderstorms, tornados, hurricanes and other severe storm activity. The region is in FEMA Wind Zone Category III, which indicates winds up to 200 mph could be felt.

Lightning is an electrical discharge resulting from the buildup of positive and negative charges within a thunderstorm, being manifest by a “bolt” between clouds or the clouds and the ground. The rapid heating and cooling of air near a bolt of lightning often creates thunder. Thunderstorms and lightning events can occur anywhere the conditions are favorable. All of Florence County and its municipalities are susceptible to thunderstorms and lightning events. Thunderstorms and lightning are the most familiar and dangerous of all natural hazards to most people in the Pee Dee region.

Historical data indicate the following thunderstorms and lightning events and damage from 1950 to 2018. Historically there have been over 400 instances and probabilities are illustrated in the graphics:

Historical and Notable Events

9/5/61 High winds and excessive lightning caused damage in Florence, S.C.

3/17/65 Damaging winds and hail caused significant damages in Florence County in excess of $50,000.00

6/15/71 Severe thunderstorms and hail caused damage across Florence County in excess of $20,000.00

1/25/78 Damaging winds and heavy rains caused damage in Florence, S.C.

4/27/80 Severe thunderstorm in Timmonsville, S.C. which caused wind and hail damage of $50,000.00.

6/10/82 Severe thunderstorms, lightning and hail caused approximately $120,000.00 in damages in the Florence and Timmonsville areas.

7/14/84 Lightning reportedly caused in excess of $40,000 in damage in Lake City, S.C.

6/2/85 Severe thunderstorms caused $71,000.00 in damage.

5/25/2000 Severe thunderstorms producing large hail and damaging winds across the eastern Carolinas led our office to issue over 20 severe thunderstorm warnings and 3 tornado warnings. The strongest storm impacted Florence, SC, where there were several reports of golf ball to softball size hail! In addition, trees were downed, homes were damaged, and a roof was blown off a building.

6/12/06 Reports of several lightning strikes causing damage near $100,000.00

7/12/2010 A line of severe thunderstorms ahead of a cold front produced widespread damaging winds across our forecast area. Trees were downed across highways and on top of homes and

cars. One person was injured near Yauhannah, SC when a tree limb fell on a car. The worst damage was in Florence County; numerous wind damage reports were relayed from Scranton, SC and Quinby, SC

5/10/2011 A warm front moving northward across the Carolinas combined with upper level support resulted in severe thunderstorms that produced damaging hail across our forecast area. Softball size hail (4.5 inches in diameter) in Conway, SC damaged vehicles and homes near Highway 501. Softball size hail also broke a car window in Florence County near Hannah, SC. Dozens of cars were damaged by baseball size hail in the Woodcreek community near Conway, SC. Baseball size hail covered the ground near Evergreen, SC. In Columbus County, golf ball size hail covered the ground near Clarkton, NC. Golf ball size hail even made it to Carolina and Kure Beach in New Hanover County. In total, our office received over 40 reports of at least quarter size hail during this severe event.

Vulnerability

The following section provides information on hazard vulnerability across Florence County. For severe thunderstorms Florence County has a future probability of 3,094 with a frequency interval of 0.03. The historical impact between 1960 to 2015 shows an annualized loss of $ 343,365 with no deaths and 6 injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $34,592 with no deaths or injuries reported. For lightning Florence County has a future probability of 1,113,648 with a frequency interval of 0. The historical impact between 1960 to 2015 shows an annualized loss of $ 49,125 with one death and 6 injuries. The recent impacts between 2016 and 2018 shows an annualized loss of $3,871 with no deaths and one injury reported. The data used for the analysis here come from a variety of sources. Historical loss and damage information comes from SHELDUS and The National Climatic Data Center (NCDC) Storm Events database.

Figure 4 - 22

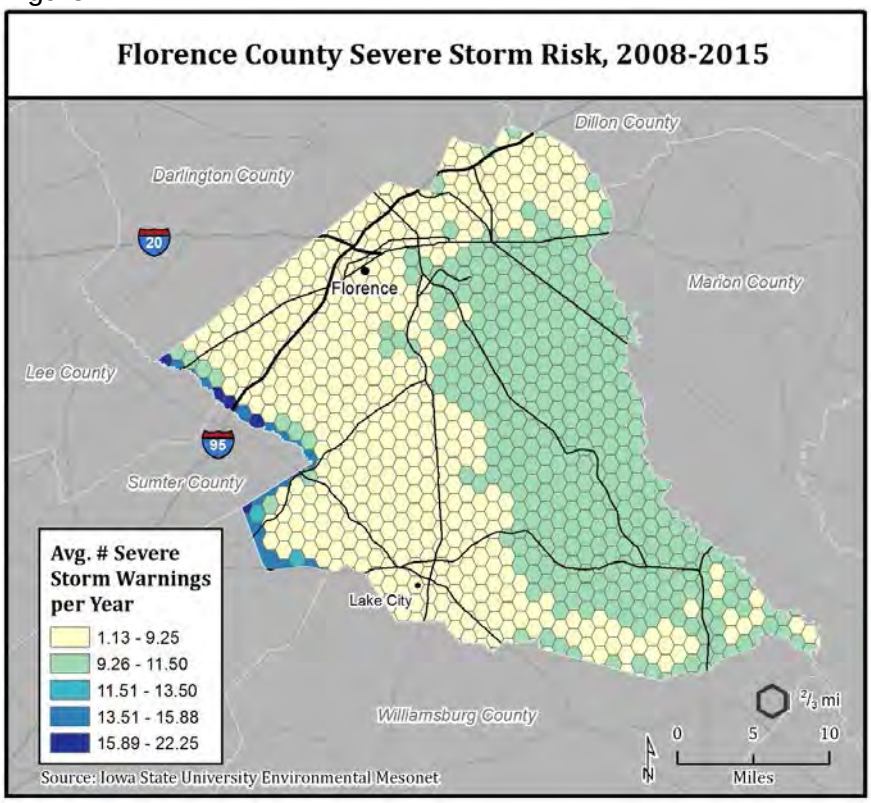


Figure 4 - 23

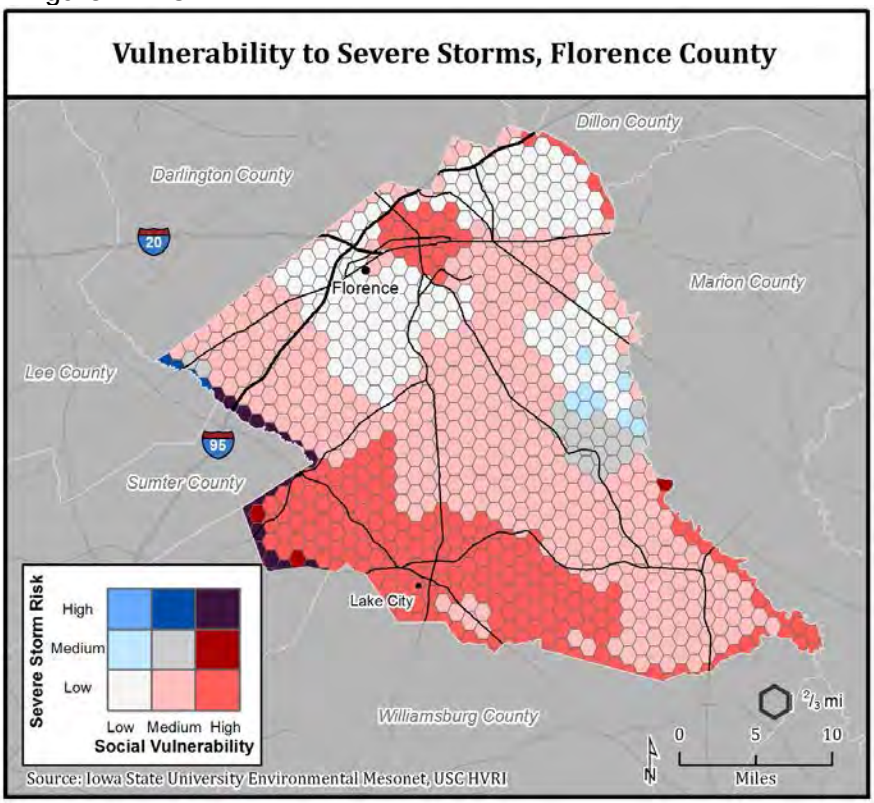


Figure 4 - 24

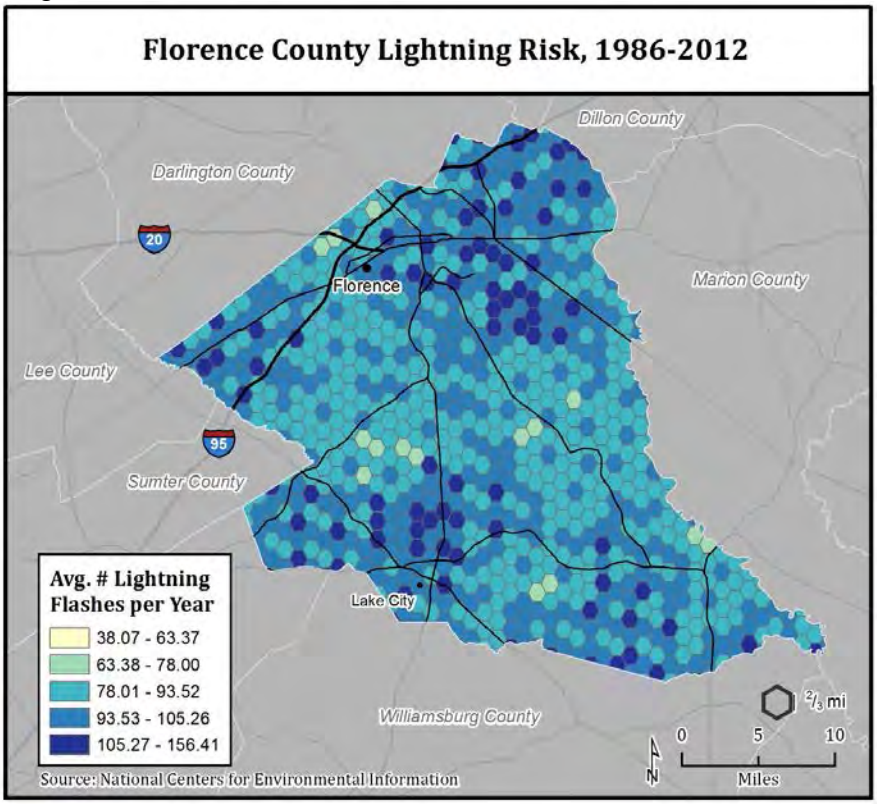
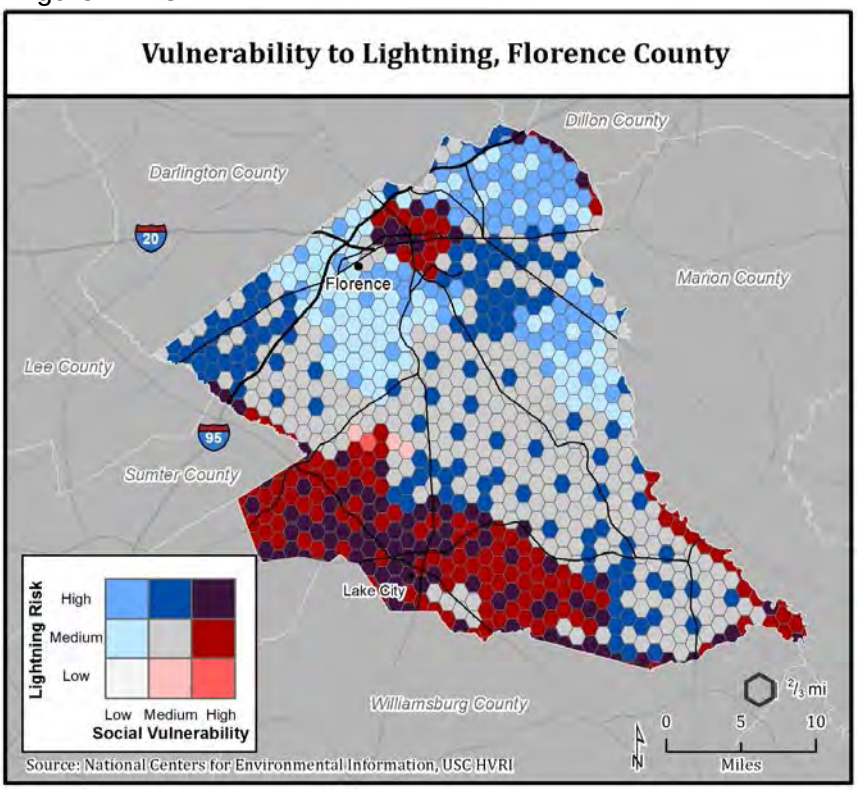


Figure 4 - 25



Severe Winter Storm/Ice Storm:

Winter ice storms consist of snow and sleet and freezing rain events and can be particularly damaging. Impacts of such storms are generally widespread. Winter weather is a widespread event and can equally affect all of Florence County and its municipalities. Florence County has a potential snow fall amount of 0" to 24" and an ice accumulation of 0" to 2". From 1950 through 2018 the following data is available.

Historical and Notable Events

February 1973: A snowstorm of historic proportions impacted the state, leaving behind a record 24 inches of snow in some areas. Approximately 30,000 motorists were stranded on the state's highways—many rescued by helicopter. Eight exposure-related fatalities were reported. Over 200 buildings, in addition to thousands of awnings and carports, collapsed under the weight of the snow. Property and road damages as well as the cost of snow removal and rescue operations were estimated to total approximately $30 million.

March 1993: This winter storm, which possessed an extremely low atmospheric pressure, passed across South Carolina bringing damaging winds, recorded snowfalls of as much as 11.5 feet in portions of the mountains, and snow flurries on the southeast tip of the coast. Preliminary damage assessments at the time were estimated at over $22 million. Two fatalities in South Carolina resulted from this event that is also known as the "Superstorm of the Century". This historic storm impacted 26 states and broke many historical weather records in the affected areas.

January 2000: Low pressure rapidly deepened near the Carolina coast, wrapping abundant moisture back across the Piedmont of the Carolinas. By the time snow ended, accumulations ranged from 12 to 20 inches. Due to the heavy wet snow, numerous power outages occurred and buildings collapsed. Precipitation, which briefly began as a light mixture of sleet and snow, quickly turned to freezing rain, resulting in a glaze 1/4 to 1/2 inch thick on exposed surfaces.

January 2014: A rare and significant winter storm impacted southeast North Carolina and northeast South Carolina on January 28-29, 2014. This storm brought a combination of sleet, snow, and even some freezing rain to our area - resulting in significant accumulations and impacts that were felt for several days after the event. Snow and sleet accumulations of 2 to 4 inches were reported in Florence County.

February 2014: Although substantial amounts of snow and sleet fell across interior portions of eastern North and South Carolina, damage from this storm was primarily attributed to a heavy accumulation of freezing rain that fell across the Pee Dee region of South Carolina into coastal North Carolina. A swath of ice accretion in excess of one inch occurred from northern Horry County through Marion County, southern Florence County, and into western Williamsburg County. Widespread damage occurred to trees and power lines, with electric service not fully restored in some areas for a week. South Carolina forestry officials compared the damage across parts of South Carolina to that of Hurricane Hugo back in September 1989. South Carolina Emergency Management declared a state of emergency during the storm; they and the American Red Cross opened emergency shelters. At one point nearly 350,000 South Carolina residents were without power. The severity of the damage led to 21 counties in South Carolina

being declared a federal "major disaster area" including Dillon, Florence, Georgetown, Horry, Marion, and Williamsburg counties.

Recent Activity

February 17, 2015: Arctic high pressure on February 16th brought a cold and very dry airmass into the Carolinas with reports of .05” of ice in Florence, S.C.

February 24, 2015: Low pressure moved northeast along a front well offshore, spreading moisture over cold dry air that covered the Carolinas. Precipitation began as snow before sunrise on February 24, 2015, but transitioned over to sleet and finally to freezing rain during the late morning hours. Florence County received a trace of snow and .21” of freezing rain.

March 2, 2017: Between a trace to 1” of snow fell across Florence County, S.C.

January 2018: On the morning of January 7th the temperature in Florence fell to 8 degrees. This is tied for the third coldest temperature in Florence's history and was the coldest recorded since January 21, 1985. Temperature records began in Florence in 1948. This was the coldest start to a year ever in Florence's history. The first seven days of 2018 had an average temperature of 24.2 degrees, beating the previous coldest start in 2010 by over eight degrees. High temperatures for eight straight days (December 31, 2017 through January 7, 2018) failed to reach 40 degrees, becoming the longest streak of cold days in Florence's history. Eight straight nights of low temperatures of 20 or colder also broke the record for consecutive very cold nights. Snowfall of 2.5 inches in Florence was the largest storm recorded since 3.0 inches fell January 10-11, 2011.

Vulnerability

The following section provides information on hazard vulnerability across Florence County. For winter weather Florence County has a future probability of 313 with a frequency interval of 0.32. The historical impact between 1960 to 2015 shows an annualized loss of $ 375,461 with 4 deaths and 1 injury. The recent impacts between 2016 and 2018 shows an annualized loss of $0 with no deaths or injuries reported. The data used for the analysis here come from a variety of sources. Historical loss and damage information comes from SHELDUS and The National Climatic Data Center (NCDC) Storm Events database.

Figure 4 - 26

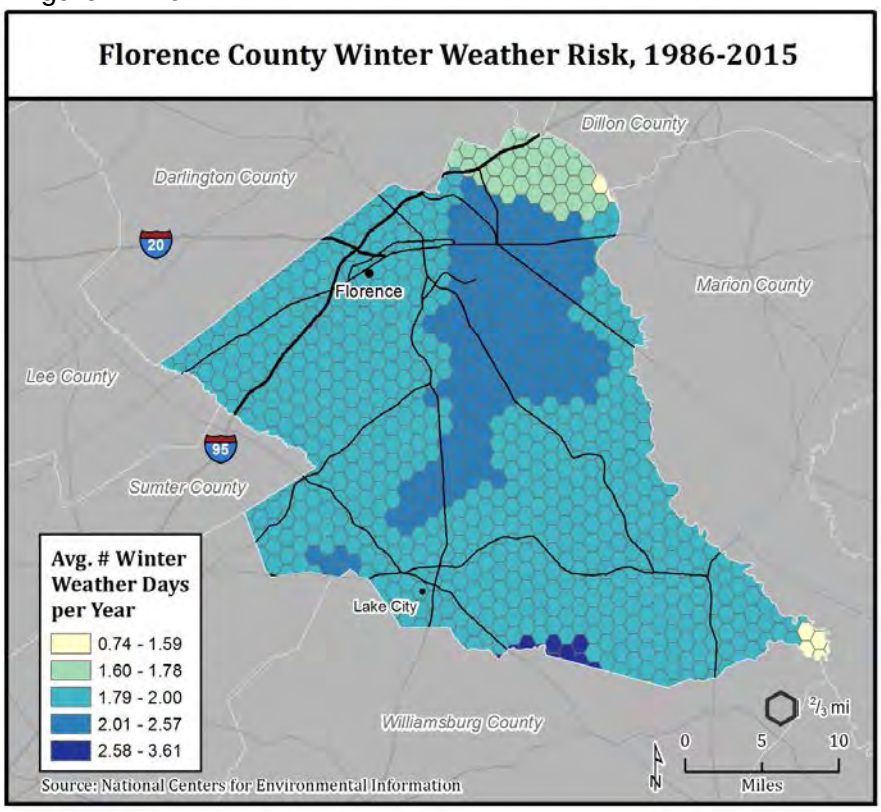
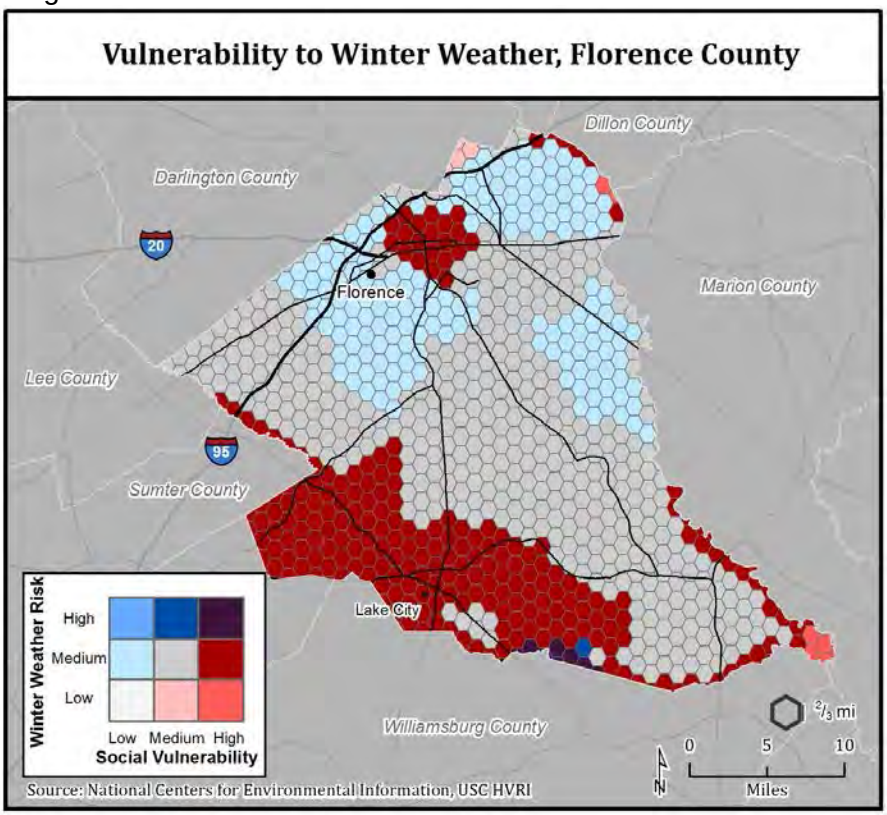
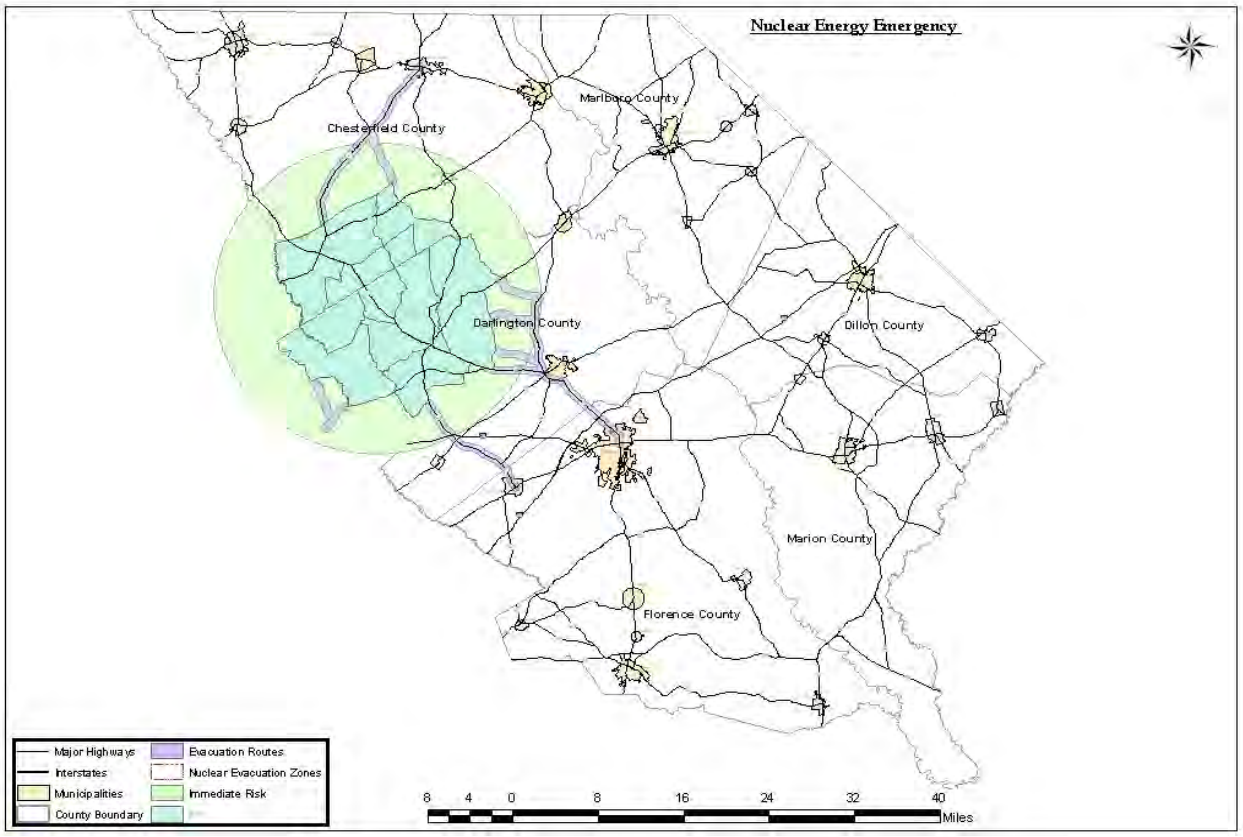


Figure 4 - 27



Nuclear Energy Emergency:

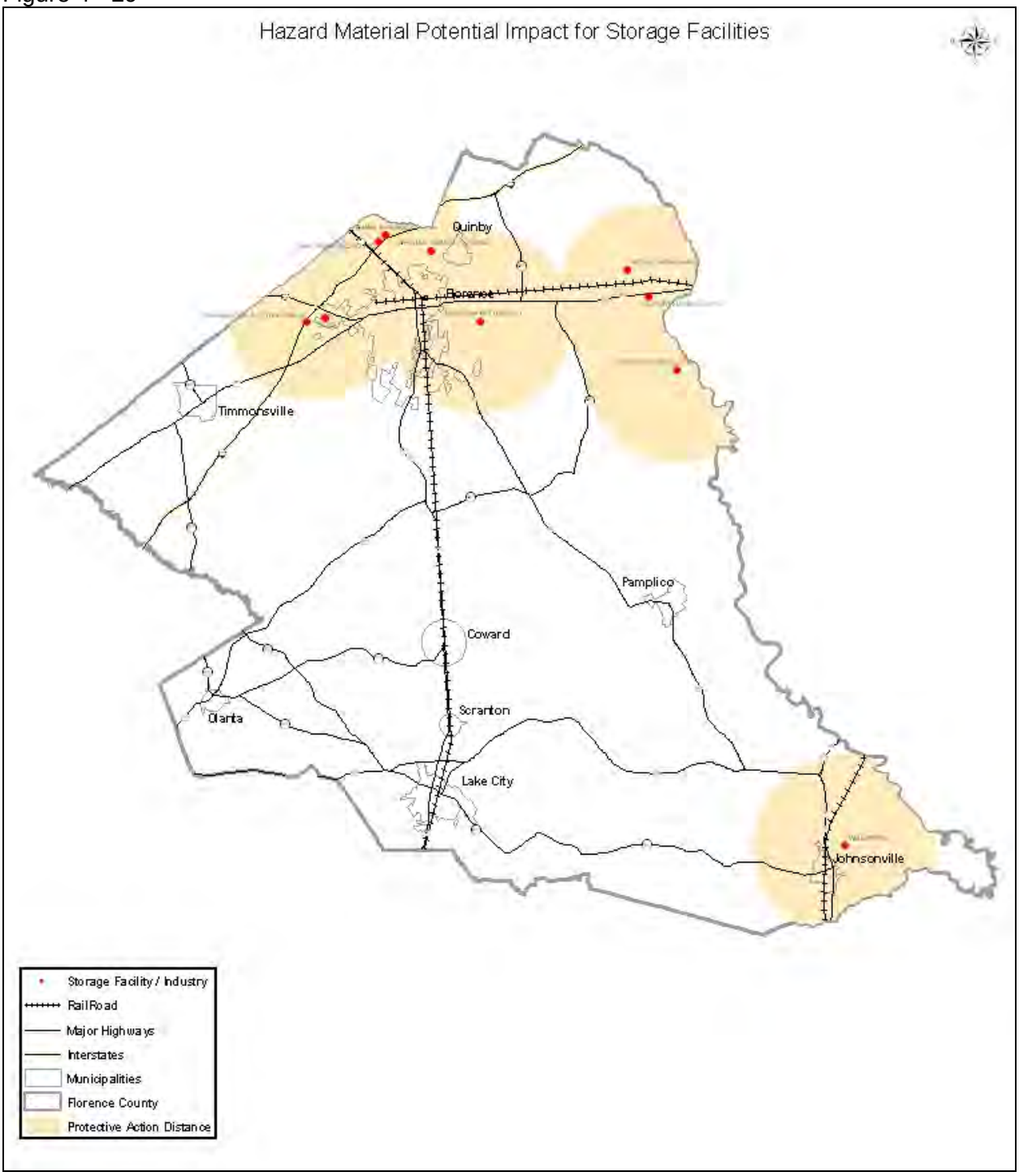
The region contains a nuclear-powered electric generating station, the Lake Robinson facility of Progress Energy, located North of the City of Hartsville. While it is a well-operated facility with an excellent safety record, the facility has some risk. The attached graphic illustrates a 15-mile safety zone and somewhat smaller evacuation area and evacuation routes, covering portions of three counties. Based on these immediate risk and evacuation areas, the estimated risks are location within the 50 MPZ and the Ingestion Exposure Pathway.
Figure 4 - 28



Hazardous Material Storage:

First, the types of hazardous materials stored at (mostly) industrial facilities are illustrated. The illustration shows materials storage sites and the “protective action distance”, or potential impact area of a spill or release.

Figure 4 - 29

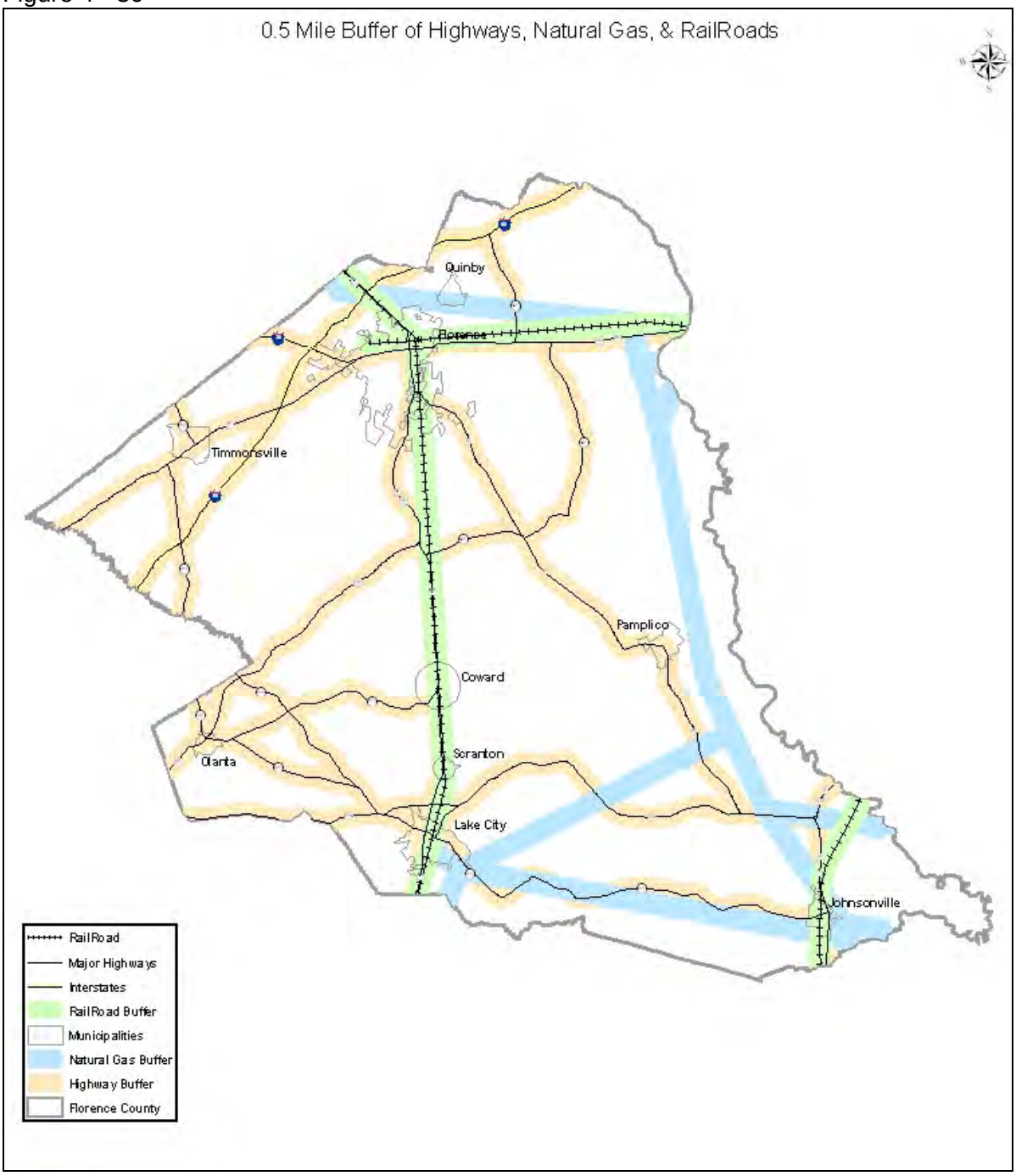


Hazardous Materials Transportation:

Secondly, major highways, rail lines and natural gas transmission lines represent potential spill or release points or corridors for hazardous materials. On the accompanying pages are maps showing these transportation and transmission corridors.

Following the transportation corridors graphic, a composite map of the first two factors is provided, showing vulnerability points. This graphic completes the hazardous materials risk picture.

Figure 4 - 30



Composite Assessment of Risks:

The following chart graphically displays the probabilities of occurrence discussed in the proceeding narratives, using a scale of none, low, medium and high. Low probability means that the likelihood of an event occurring is minimal and occurring not more than every five years. Medium probability means that the likelihood of an event occurring is moderate and probability of an event occurring every is every one to five years. And high probability means that you will likely have an event occur and a probability of it occurring at least once a year.

Table 4 - 14

OVERALL RISK: None Low Medium High

Jurisdiction/ Community	DROUGHT	EARTHQUAKE	FLOODING	HAILSTORM	HURRICANE	WINTER STORM	TORNADO	WILDFIRE	SEVERE THUNDERSTORM	NUCLEAR EMER.
Florence County (Un)										
Coward Town										
Florence City										
Johnsonville City										
Lake City										
Olanta Town										
Pamplico Town										
Quinby Town										
Scranton Town										
Timmonsville Town										

To supplement the understanding of overall jurisdictional vulnerability to hazards, the following brief narratives are provided by community:

Florence County (unincorporated area): The unincorporated portions of the County have mostly moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Coward Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards. .

Florence City: The City is the largest municipality in the region and County and has moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards

Johnsonville Town: The Town has moderate to high vulnerability to most hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

City of Lake City: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Olanta Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards..

Pamplico Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Quinby Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to flooding due to many areas within the flood plain as well as older storm water runoff systems in low lying areas; hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential,

commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Scranton Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Timmonsville Town: The Town has moderate to high vulnerability to hazards. Of most concern are high susceptibility to hailstorms which occur annually and historically can be moderate to extreme in levels of damage to which there is little to no mitigating efforts available; tornados which occur yearly however tend to be E-0 to E-1 with minimal damage; wildfires which occur annually with the potential to cause damage to large areas of residential, commercial, timber areas and farm land; and thunderstorms which occur annually with minor to major damage potential and has at least some vulnerability to all other hazards.

Critical Facilities Assessment

Some facilities and systems in the community are very important to the health, safety and welfare of the community. Therefore, high priority is given to assessing their vulnerabilities to future disasters and proposing mitigation initiatives to address identified vulnerabilities. For purposes of this plan, these facilities are considered to be “critical facilities,” and, as a part of the planning process, the participating jurisdictions have identified selected facilities to warrant this designation as “critical.

Critical facilities have been defined in this plan as those facilities that (1) should not lose operational status during a disaster, (2) should return to operational status within 24 hours following a disaster, or (3) should return to operational status within 72 hours following a disaster. Other definitions exist, including that of the State Hazard Mitigation Plan: (1) the facility should continue to operate during a hazard event or (2) the facility should return to operational status within forty-eight [48] hours if it loses operational status during a hazard event. From this critical facilities database, tables are attached that describe facilities and indicate the vulnerability for these critical facilities to natural and man-made hazards. The tables that follow at the end of this chapter include:

1 Critical Facility Inventory
2 Critical Facility Assessment

The participating jurisdictions have conducted vulnerability assessments for designated critical facilities. These vulnerability assessments are being utilized to evaluate the need for proposing mitigation initiatives to address the defined vulnerabilities, if any, and include any proposed initiatives in the Florence County plan. The participating jurisdictions have attempted to identify and assess those of most concern. As the planning process continues, the participating jurisdictions will continue to add more facility vulnerability assessments to the database, and to consider those with highest vulnerabilities as warranting proposing of mitigation initiatives.

Individual Vulnerability Assessment Results

Within the planning concept, vulnerability assessments are conducted by personnel from the department, agency or neighborhood whose property is being evaluated or, when necessary, by the committee. While the reports attached to this section are basically summaries of the efforts by participants from throughout the county, specific and detailed results of the vulnerability assessments are presented later in this document. These specific vulnerability assessments provide the detailed basis for identifying the needs for mitigation initiatives, which can then be formulated and proposed for incorporation into the plan.

Jurisdiction Policies for Control of Vulnerabilities

An important aspect of the vulnerability assessment process is to determine if the local jurisdictions have policies, plans, codes or requirements in place that are intended to avoid or minimize the vulnerability of the community to the hazards that threaten it. These policies and programs can take many forms, such as building and land use codes, hazard mitigation and emergency response plans, requirements for facility operations and maintenance, etc. If local government's policies, plans and requirements effectively address the hazards posing the greatest risk to the community, then the vulnerability to future disasters can be reduced.

Just like the vulnerability assessment process being undertaken by the committee, for facilities, systems and neighborhoods, the assessment of the extent to which the policy framework responds to the hazards of concern is another vehicle to identify the need for mitigation initiatives. In this case, however, the mitigation initiatives proposed would be non-structural in concept, i.e., the development of new plans, codes or policies to address the identified hazards and to reduce the presence of future vulnerabilities of the community. The first map demonstrates the overall hazard vulnerability.

Social Vulnerability: With preceding analyses pinpointing natural and man-made hazards risk by geographic area, another graphic analysis has mapped population vulnerability, illustrating the extent of population groups and property that is at risk from these natural and man-made hazards. For this GIS analysis, populations that are most vulnerable from impact of especially natural hazards included:

- Concentrations of women
- Concentrations of children: <18 years
- Concentrations of elderly: > 65 years
- Concentrations of minorities.
- Concentrations of the poor (low income areas)

In like fashion, vulnerable places and property have been mapped, included:

- High density areas
- Total housing units
- Total mobile homes
- Median housing value

It should be noted that the places and property vulnerability takes a different philosophical approach that the population factors. The population groups mapped are those that would have greater difficulty preparing for, coping with and recovering from natural disasters. Women, children, the elderly, the poor and other listed populations do not have as much ability or the resources to survive or recover as well as other population groups.

Overall Social and Place Vulnerability.

The committee has also analyzed three aspects of “place” vulnerability to demonstrate the types of issues related to critical facilities and overall population susceptibility to impacts from natural and man-made disasters. Maps are provided that summarize such vulnerability.

Figure 4 - 31

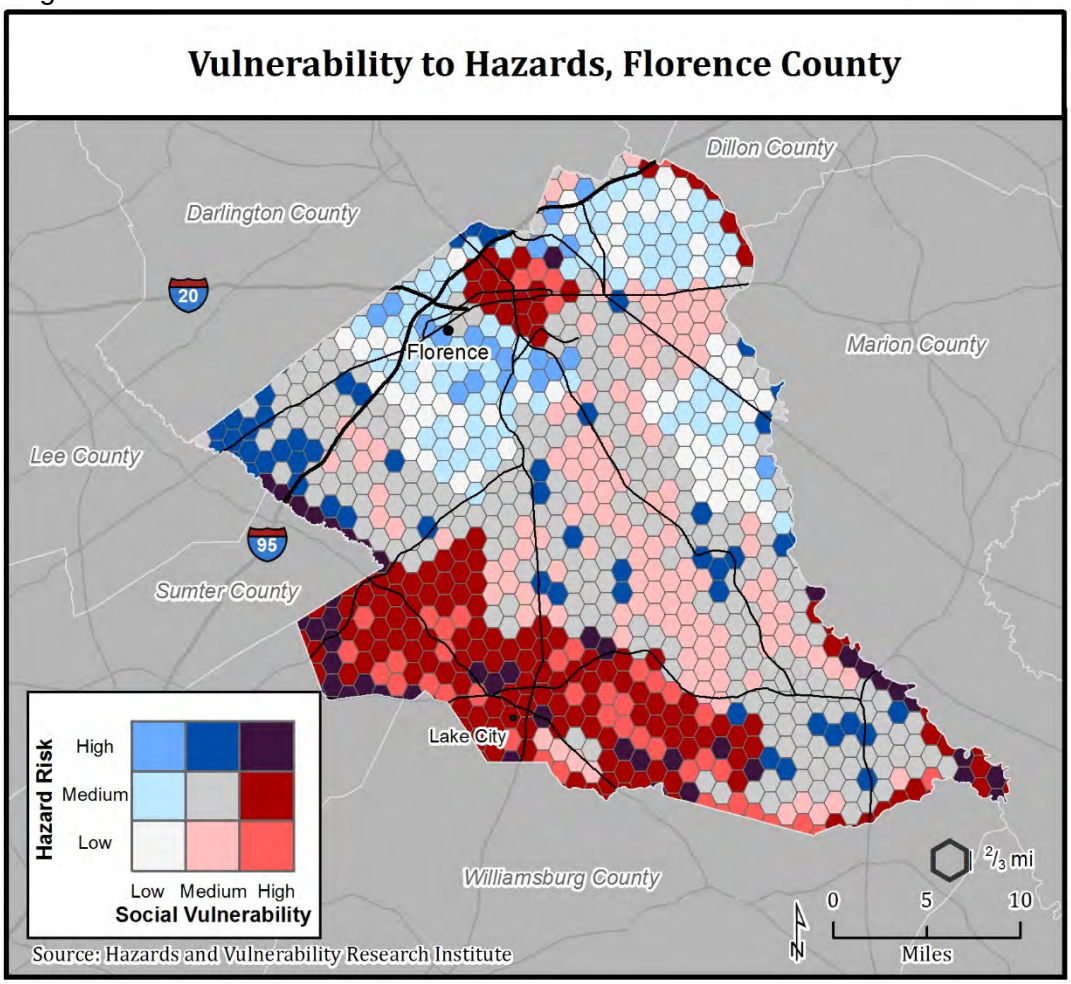


Figure 4 - 32

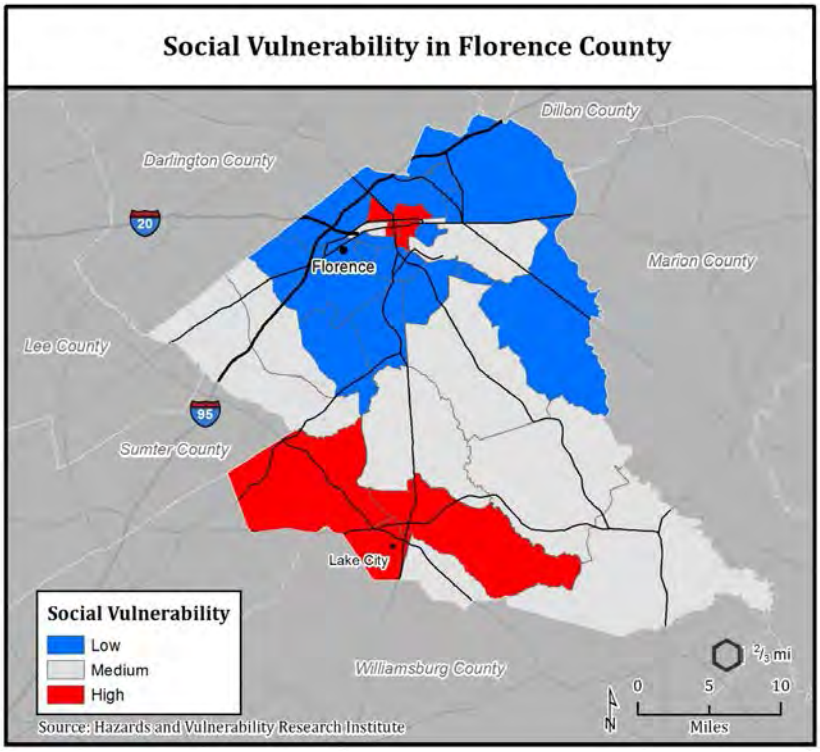
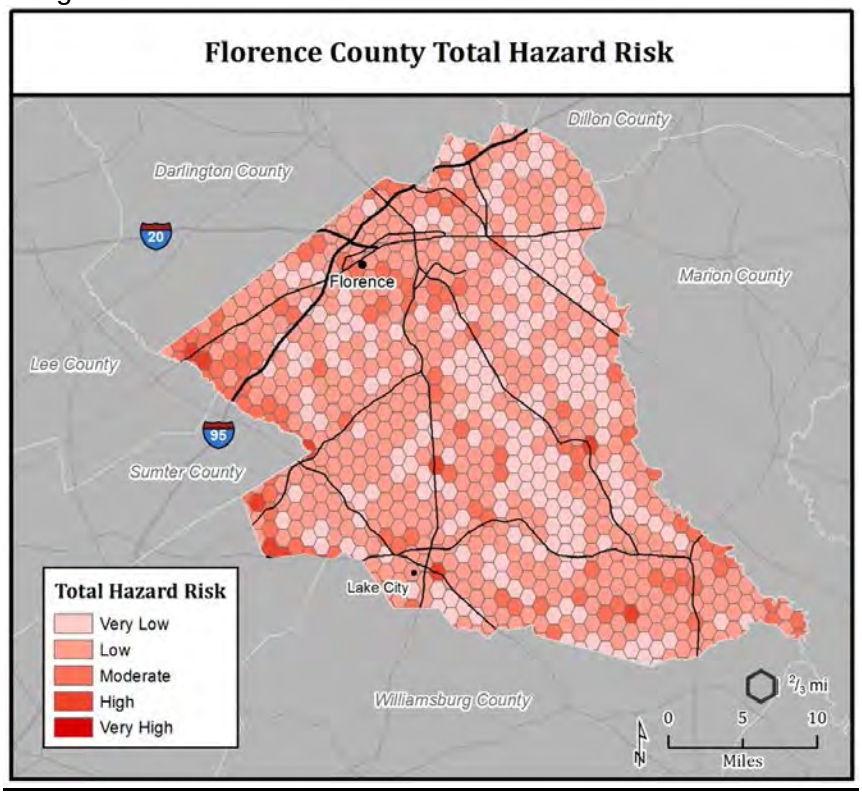

Social Vulnerability in Florence County
Dillon County
Darlington County
20
Florence
Marion County
Lee County
95
Sumter County
Lake City
Social Vulnerability
Low
Medium
High
Williamsburg County
2/3 mi
0
5
10
N
Miles
Source: Hazards and Vulnerability Research Institute

Figure 4 – 33


Florence County Total Hazard Risk
Dillon County
Darlington County
20
Florence
Marion County
Lee County
95
Sumter County
Lake City
Total Hazard Risk
Very Low
Low
Moderate
High
Very High
Williamsburg County
2/3 mi
0
5
10
N
Miles

Summary

It must be emphasized that the fundamental reason for undertaking the hazard identification and vulnerability assessment process is to highlight vulnerabilities that need to be addressed by the development of proposed mitigation initiatives for incorporation into the mitigation plan. Because of the numerous locations, facilities, and systems in Florence County that need to be assessed for their vulnerability to disasters, this component of the mitigation planning process can be expected to be continued in future updates of the plan.

FACILITY NAME	FACILITY TYPE	Drought	Earthquake	Flooding	Hailstorm	Hurricane	Tornado	Wildfire	Thunderstorm Lightning	Winter Weather	Nuclear Emergency
FIRE STATIONS											
City of Florence Station 1	Fire Station	X	X	X	X	X	X		X	X	X
City of Florence Station 2	Fire Station	X	X	X	X	X	X		X	X	X
City of Florence Station 3	Fire Station	X	X	X	X	X	X		X	X	X
City of Florence Station 4	Fire Station	X	X	X	X	X	X		X	X	X
City of Florence Station 5	Fire Station	X	X	X	X	X	X		X	X	X
Hannah-Salem Friendfield Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
Hannah-Salem Friendfield Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Hannah-Salem Friendfield Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Hannah-Salem Friendfield Station 4	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 4	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 5	Fire Station	X	X	X	X	X	X	X	X	X	X
Howe Springs Station 6	Fire Station	X	X	X	X	X	X	X	X	X	X
Johnsonville Station 1	Fire Station	X	X	X	X	X	X		X	X	X
Johnsonville Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Lake City Fire Station 1	Fire Station	X	X	X	X	X	X		X	X	X
Olanta Station 1	Fire Station	X	X	X	X	X	X		X	X	X
Olanta Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Olanta Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Sardis-Timmonsville Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
Sardis-Timmonsville Station 2	Fire Station	X	X	X	X	X	X		X	X	X
Sardis-Timmonsville Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
South Lynches Station 1	Fire Station	X	X	X	X	X	X		X	X	X
South Lynches Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
South Lynches Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X

South Lynches Station 5	Fire Station	X	X	X	X	X	X	X	X	X	X
South Lynches Station 6	Fire Station	X	X	X	X	X	X	X	X	X	X
Timmonsville Station 1	Fire Station	X	X	X	X	X	X		X	X	X
West Florence Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
West Florence Station 2	Fire Station	X	X	X	X	X	X		X	X	X
West Florence Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 1	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 2	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 3	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 4	Fire Station	X	X	X	X	X	X	X	X	X	X
Windy Hill Station 5	Fire Station	X	X	X	X	X	X	X	X	X	X
LAW ENFORCEMENT											
City of Florence Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Coward Police Department	Law Enforcement	X	X	X	X	X	X	X	X	X	X
Florence County LEC	Law Enforcement	X	X	X	X	X	X	X	X	X	X
Johnsonville Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Lake City Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Olanta Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Pamplico Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
Quinby Police Department	Law Enforcement	X	X	X	X	X	X	X	X	X	X
Scranton Police Department	Law Enforcement	X	X	X	X	X	X		X	X	X
EMS/RESCUE											
Florence County EMS Station 1	EMS/Rescue	X	X	X	X	X	X		X	X	X
Florence County EMS Station 2	EMS/Rescue	X	X	X	X	X	X		X	X	X
Florence County EMS Station 3	EMS/Rescue	X	X	X	X	X	X	X	X	X	X
Florence County EMS Station 4	EMS/Rescue	X	X	X	X	X	X		X	X	X
Florence County EMS Station 5	EMS/Rescue	X	X	X	X	X	X	X	X	X	X
Florence County EMS Station 6	EMS/Rescue	X	X	X	X	X	X	X	X	X	X
Florence County EMS Station 7	EMS/Rescue	X	X	X	X	X	X	X	X	X	X
Johnsonville Rescue Station 1	EMS/Rescue	X	X	X	X	X	X		X	X	X

Pamplico Rescue Station 1	EMS/Rescue	X	X	X	X	X	X		X	X	X
Timmonsville Rescue Station 1	EMS/Rescue	X	X	X	X	X	X		X	X	X
HOSPITALS											
MUSC Florence	Hospital	X	X	X	X	X	X		X	X	X
Lake City Community Hospital	Hospital	X	X	X	X	X	X		X	X	X
McLeod Regional Medical Center	Hospital	X	X	X	X	X	X		X	X	X
EMERGENCY OPERATIONS CENTER											
City of Florence EOC	EOC	X	X	X	X	X	X		X	X	X
Florence County EOC	EOC	X	X	X	X	X	X	X	X	X	X
COMMUNICATIONS			X								
Florence County E-911	Communications	X	X	X	X	X	X	X	X	X	X
Effingham Tower Site	Communications	X	X	X	X	X	X		X	X	X
Lake City Tower Site	Communications	X	X	X	X	X	X		X	X	X
Pamplico Tower Site	Communications	X	X	X	X	X	X	X	X	X	X
E. Florence Tower Site	Communications	X	X	X	X	X	X	X	X	X	X
Florence Tower Site	Communications	X	X	X	X	X	X		X	X	X
Olanta Tower Site	Communications	X	X	X	X	X	X	X	X	X	X
PUBLIC WORKS											
Florence County Public Works	Public Works	X	X	X	X	X	X	X	X	X	X
City of Florence	Public Works	X	X	X	X	X	X	X	X	X	X
City of Lake City	Public Works	X	X	X	X	X	X		X	X	X
Town of Coward Water Department	Public Works	X	X	X	X	X	X		X	X	X
Town of Pamplico Public Works	Public Works	X	X	X	X	X	X		X	X	X
Town of Olanta Water Department	Public Works	X	X	X	X	X	X		X	X	X
GOVERNMENT											
Florence County Complex	Government	X	X	X	X	X	X		X	X	X
City of Florence	Government	X	X	X	X	X	X		X	X	X
City of Lake City	Government	X	X	X	X	X	X		X	X	X
Lower Florence Co. Public Services Bldg	Government	X	X	X	X	X	X		X	X	X
Town of Coward	Government	X	X	X	X	X	X		X	X	X
Town of Johnsonville	Government	X	X	X	X	X	X		X	X	X
Town of Olanta	Government	X	X	X	X	X	X		X	X	X
Town of Pamplico	Government	X	X	X	X	X	X		X	X	X

Town of Quinby	Government	X	X	X	X	X	X	X	X	X	X
Town of Scranton	Government	X	X	X	X	X	X		X	X	X
Town of Timmonsville	Government	X	X	X	X	X	X		X	X	X

Florence County
Hazard Mitigation Plan

Section Five

PROGRESS IN PLAN IMPLEMENTATION

Introduction

This section discusses the current status of implementation of the Florence County Hazard Mitigation Plan. There are several aspects of plan implementation that need to be addressed:

- The status of promulgation or formal adoption of the plan by the participating jurisdictions,
- The previously proposed mitigation initiatives that have been implemented,
- The activities of the FCHMPC to engage the public and the community at large in the mitigation planning process
- The FCHMPC priorities for implementation of approved mitigation initiatives now incorporated into the plan, and
- How recent disaster experience has illustrated the need for and success of the Florence County Hazard Mitigation Plan.

Status of Plan Promulgation and Approval

Promulgation and approval of the plan is a very important step in assuring its implementation. It is the expectation of the FCHMPC that the governing body of each participating jurisdiction or organization will review, consider and act on their section of this plan. If the governing body acts in a positive manner, this is basically an approval or endorsement of the proposed mitigation initiatives contained in the corresponding individual section of the plan. This approval or endorsement, with or without modification by the governing body, represents both consent and commitment by the representatives of that organization or jurisdiction to seek the resources needed to implement the priority initiatives contained therein. Only through actual implementation of the proposed mitigation initiatives contained in this plan can it actually help to make Florence County a disaster resistant area.

As the FCHMPC continues the planning efforts in the future, it is intended that additional updates of the mitigation plan will be published to provide both the participating organizations and the public current information regarding the mitigation planning process. Further, approximately every five years, the FCHMPC will again seek the review and updating of the individual jurisdictional plans. This interval has been selected to provide a sufficient period for the FCHMPC to have made significant progress in further technical analysis, implementation of currently proposed initiatives, and development of new proposals, prior to again seeking formal local approval of the plan. In this way, the plan can be kept up-to-date on a continuing basis by FCHMPC, while nevertheless assuring that the jurisdictions' governing bodies routinely review the plan and approve its implementation.

Public Information and Participation

The FCHMPC, as well as individual participating agencies and organizations, have been active in attempting to engage the general public in the planning process. Public information activities have been undertaken to explain the mitigation planning process to the community and to solicit their input and involvement in the planning process, as well as to provide mitigation awareness and educational information. The FCHMPC welcomes public input to the planning process, and fosters public participation through the issuance of media releases, holding public meetings and hearings, etc.

Public information activities by the FCHMPC have included: conducting an orientation meeting for all jurisdictions in the planning area; encouraging officials, community leaders and emergency service providers including representatives from local governments, business and industry, law enforcement, fire and rescue, health care, and others to be involved in the planning effort. A more direct involvement of the general public was addressed with a public hearing on the draft plan prior to formal adoption of the plan by the local county and municipal governments held on April 22, 2019 and May 15, 2019 at the Florence County Emergency Management Division. Appendix B "Notice of Public Meeting" is attached at the end of this plan. Public input was considered but not included.

Public information activities by the FCHMPC include: inviting the participation of all municipalities, and ensuring that there was broad representation and participation by emergency service provider organizations in the committee proceedings. Every year the FCHMPC will hold one public meeting and any feedback from the meeting will be incorporated in future mitigation plans.

FCHMPC will continue efforts to develop and implement a year-round program to engage the community in the mitigation planning process and to provide them with mitigation-related information and education. These efforts will be to continually invite public comments and recommendations regarding the mitigation goals for the community, the priorities for the planning, and the unique needs of each community for mitigation-related public information.

Completed Mitigation Initiatives

The implementation of the mitigation initiatives proposed as a result of the planning process followed by the FCHMPC is an important measure of the progress in implementation of the plan. As the participants in the planning are able to implement more and more of the proposed initiatives that have been incorporated into the plan, the facilities, systems and neighborhoods of the county can become more and more resistant to the impacts of future disasters.

The Priority for Initiative Implementation

As a part of its future planning process, the FCHMPC also will periodically review the proposed mitigation initiatives approved for incorporation into the plan to determine their priority for implementation during the next planning period. This assessment will provide guidance to the individual jurisdictions and organizations proposing the initiatives to encourage them to focus on those designated as priority. However, because each participating jurisdiction or organization has independent authority and responsibility for implementation of their proposed mitigation initiatives under the mitigation planning approach used by the FCHMPC the jurisdictions and organizations retain the prerogative to act in their own interests, using their own priorities for mitigation initiative implementation.

In many ways, the priority for implementation assigned to proposed mitigation initiatives could be considered a suggestion or recommendation to the proposal sponsors to seek the resources for implementation. These resources may range from the normal budgeting process for the jurisdiction or organization to seeking state or federal financial or technical support for implementation of the initiative.

The designation "priority for implementation" means that the FCHMPC recommends that sponsors of those initiatives so classified focus on their implementation as soon as feasible. As such, this recommendation for priority represents input from the jurisdictions and organizations throughout the county to individual sponsors of proposed mitigation initiatives and therefore the recommendation should be given appropriate weight in the jurisdiction's decision process regarding implementation.

The designation "On Going" for implementation status means that the sponsoring organization or agency is currently working toward securing funding or actual work on this initiative. The designation "No Change" means that the subject mitigation initiative should continue to be included in the plan. FCHMPC believes that a continuing effort should be made to secure the funding for, or create the opportunity for, implementation of the proposed mitigation initiative within the normal business activities of the sponsoring organization or agency. The designation "deleted" means that re-review of the proposed initiative has resulted in the conclusion that the initiative should be removed from the mitigation plan, because it is no longer desirable or necessary. Of course, when a mitigation initiative is actually completed, it is so indicated as within the program. The designation "New" indicates an initiative that the FCHMPC has identified as a new initiative to be added to the plan.

A report entitled "Initiatives By Priority" is provided in an attachment to Section 7, which identifies the implementation priority desired. The operating procedure also calls for the FCHMPC planning staff to recommend an implementation schedule for any proposed mitigation initiative considered to be "On Going" or "priority for implementation." This schedule, which represents the FCHMPC suggestion to the sponsoring organization, gives a recommended date for initiation of implementation as well as a recommended date for completion of the initiative.

Effectiveness of Mitigation Initiatives

Of course, the true measure of progress in the implementation of mitigation initiatives is their success in saving lives, avoiding property damage and protecting valuable or irreplaceable resources in the community. As the mitigation initiatives that have been incorporated into the plan are implemented, there will be more opportunities to measure the "success" of the mitigation efforts.

The best opportunity for measuring this success is to evaluate the community's experience with actual disasters and to attempt to estimate the number of lives that were saved by the implemented initiatives or the value of the property protected from disaster-related damage.

In addition, however, recent disaster events can be very helpful in highlighting the mitigation needs of the community based on the type, location or magnitude of the impacts experienced. In turn, this can be a major factor in the future progress of implementation of the plan, as the FCHMPC considers and acts on actual disaster experience by the community. Such recommendations can be referred to a "lead" agency with the intention that that organization will use the information to propose additional mitigation initiatives for incorporation into the plan.

Compiling data on the "success" of existing and/or completed mitigation initiatives is an activity undertaken by the FCHMPC members on an ongoing basis and is an integral component of the process used to implement and maintain the plan.

To date, the participating organizations have not had an opportunity to conduct extensive analysis of the effectiveness of the previously implemented mitigation initiatives. This is a planning activity, however, to be included in the process to continue to expand and maintain this plan.

Plan Implementation and Plan Maintenance Procedures

This portion of the plan discusses the manner in which the plan will continue to be implemented and maintained over time. "Plan implementation" is considered as the implementation of the proposed mitigation initiatives now included in the plan. "Plan maintenance" is considered to be the process by which the FCHMPC will continue to update, improve and expand the mitigation planning process. It also includes the technical analyses needed for the process to propose more mitigation initiatives for incorporation into the plan. "Plan maintenance" further includes the group's activities to monitor implementation of the plan, to evaluate the effectiveness of implemented mitigation initiatives, and to continually strive to engage the community in the planning process. The basic elements of the FCHMPC actions to implement and maintain the plan are also described in the operating procedures.

Planning and regulatory capability is based on the implementation of plans, ordinances and programs that demonstrate a local jurisdiction's commitment to guiding and managing growth, development and redevelopment in a responsible manner, while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning and transportation planning, in addition to the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built, as well as protecting environmental, historic and cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate hazard mitigation principles and practices into the local decision making process. This mitigation plan will be integrated into the following plans Florence County Comprehensive Land Use Plan, Florence County Emergency Operations Plan, Florence County Zoning and Planning, and Florence County Building Codes as appropriate. As each municipality is covered in a comprehensive planning process under the above listed plans, Florence County will ensure the updated hazard mitigation plan is integrated.

Implementation of these actions is dependent on financial resources and the fiscal capabilities of each jurisdiction. Each will pursue outside funding from outside sources from Federal and State agencies.

Florence County will distribute one copy of the plan in the community or jurisdiction. Each of the jurisdictions in Florence County utilizes a variety of ordinances, policies and plans to guide and control development. These ordinances, policies and plans as identified in this plan in Section 2 vary from jurisdiction to jurisdiction. After each jurisdiction officially adopts the Hazard Mitigation Plan, these existing mechanisms will have hazard mitigation strategies integrated into them, as they are applicable to the ordinance, policy and plan. The Florence County Hazard Mitigation Plan will be available on the Florence County Emergency Management website. www.fcemd.org and also at the Florence County Emergency Management office at 1221 Justice Way, Effingham, S.C. 29541.

Plan Implementation Responsibility and Schedules

As noted above, implementation of the plan is basically through implementation of the approved mitigation initiatives incorporated into the plan. As these initiatives are implemented over the years, the facilities, systems and neighborhoods of the participating jurisdictions will become less vulnerable to the impacts of future disasters, and the communities of the county will become increasingly more disaster resistant.

Upon adoption of this plan, local jurisdictions accept the responsibility to implement the strategies and actions of this plan in concert with all other community development plans and activities where applicable.

As a part of the planning process, on a periodic basis, (after each disaster event or annually, whichever occurs first) approved mitigation initiatives included in the plan are re-evaluated as to their continuing value and the need for their implementation. The purpose of this re-evaluation is to assure that a proposed mitigation initiative remains a valuable component of the plan, and whether any unique or unanticipated conditions warrant extra efforts to implement the initiative.

Plan Maintenance and Monitoring of Plan Implementation

Mitigation planning is a dynamic process that must be continually adjusted to account for changes in the community and to further refine the information, judgments and proposals documented in the local mitigation plan. The process used by the FCHMPC to maintain the plan consists primarily of four functions.

The first is to continue to expand and improve the mitigation plan by accomplishing additional technical analyses, such as vulnerability assessments, evaluation of the policy framework of the participating jurisdictions, and post-event analysis of disasters, etc. The second is to continue to expand participation in the planning process by soliciting the involvement of additional agencies from the participating jurisdictions, by implementing public information programs, and by inviting expanded participation by the private sector. The third is to routinely monitor implementation of the initiatives in the plan until each is completed and in-place, and to assess their actual effectiveness following the next relevant disaster event. The fourth is to issue an updated plan document for use by the participating jurisdictions, to inform the community, and when appropriate for submittal to state and federal agencies for approval pursuant to the Disaster Mitigation Act of 2000. This portion of the plan describes these four activities to maintain the plan.

The technical analyses conducted by the participating jurisdictions will be an ongoing effort to continually assess the hazards threatening the community, the vulnerabilities to those hazards, and the adequacy of the participating jurisdictions' policy and program framework to control those vulnerabilities. When indicated, the technical analysis also includes formulating proposed mitigation initiatives to eliminate or minimize the identified vulnerabilities. Therefore, the extent to which all of the vulnerabilities of the important facilities and neighborhoods in the planning area have been identified is a direct indicator of the mitigation planning remaining to be done.

Another technical analysis important to maintenance of the plan is the expanded and refined evaluation of the policy and program framework of the participating jurisdictions and the

adequacy of this framework to control the vulnerabilities of the community. The emphasis of this plan maintenance activity during the upcoming planning cycle will be to evaluate the effectiveness of hazard specific local ordinances and the adequacy of their enforcement.

The next type of activity to continue to maintain the plan will be to continue to expand participation in the FCHMPC and the mitigation planning process. The current participants in the planning are listed at the end of Section 2. Gaining additional participation in the planning is also part of the public information and community outreach component of the approach to plan development. The planned public information activities are attached as Appendix B entitled "Notice of Public Meeting."

As part of the plan maintenance process, the FCHMPC intends to encourage expanded participation in the planning through active recruitment and involvement of additional local agencies, community groups, and private sector interests in the planning. Also, public hearings will be encouraged at the beginning of future editions of the plan.

The third category of plan maintenance activities that will be undertaken by the FCHMPC will be to monitor the implementation of mitigation initiatives by the participating jurisdictions and their agencies. The FCHMPC will document the efforts to fund the initiative, to conduct required studies, and to obtain any needed permits, as well as to estimate the time remaining to complete design, needed studies and purchasing or construction. When an initiative is completed, this fact is noted in the program as well. The current status of initiative implementation has been discussed in Section 7 of this plan, and this section will again be updated for the next publication of the plan.

As a part of monitoring the implementation of mitigation initiatives, following a disaster and as a part of the post-event analysis that the FCHMPC will conduct the effectiveness of completed mitigation initiatives, or any pre-existing mitigation initiatives, in reducing the human and economic impacts of the event can be estimated. As time passes and disaster events occur, this will enable the FCHMPC to accumulate a database of "mitigation success stories" with regard to the value of the property losses avoided and the number of fatalities, injuries or illnesses prevented.

Monitoring of the effectiveness of plan implementation and maintenance also involves assessing the effectiveness of the mitigation goals and objectives established for the planning process. As noted above, the FCHMPC proposed general goals and a number of specific objectives to guide the participants in the mitigation planning process, and these are given in Section 6. The committee's attempts to address the established objectives, with the intent of achieving the associated mitigation goals for the community, is a key measure of the effectiveness of the continuing plan maintenance and plan implementation. In future planning cycles, these goals will be reviewed and re-evaluated to ensure they are still relevant to the unique needs of the community and continue to address current and expected conditions.

The fourth category of plan maintenance activities is to actually incorporate the results of all technical analyses, including the development of new mitigation initiatives, and to publish another, updated edition of the plan. In addition to documenting additional technical analysis, the FCHMPC will document the efforts to continue to engage the public in the planning process, to expand direct participation in the planning, and to increase representation on the FCHMPC.

Plan Updating, Review and Approval

This plan will be reviewed, updated and approved at least every 5 years beginning with the date of the initial plan approval by FEMA**.** In addition to the start date for the planning cycle, this planning timeline also documents the intended deadlines for completion of key activities in the planning approach. When determined necessary, the FCHMPC shall meet yearly to evaluate the progress attained and to revise, where needed, the activities set forth in the plan. The findings and recommendations of the FCHMPC shall be documented in the form of a report that can be shared with interested City and County Council members. The FCHMPC will also meet following any disaster events warranting a re-examination of the mitigation actions being implemented or proposed for future implementation. This will ensure that the plan is continuously updated to reflect changing conditions and needs within the county which includes the participating jurisdictions.

At the conclusion of the planning cycle, a draft of the updated mitigation plan will be prepared and distributed for public comment and input. Several public hearings will be advertised and conducted on the draft update. Copies of the draft will be placed at Florence County's Emergency Management office for review by interested persons, and its availability for review will be advertised in the local media.

The Next Planning Cycles

As given in this section, the FCHMPC has established a schedule and procedure for both plan implementation and plan maintenance that is expected to be very helpful in improving and expanding the mitigation planning process. Initially, the planning efforts will seek to build on the analyses and proposals included in this edition of the mitigation plan, primarily by completing more vulnerability assessments, evaluations of plans and programs, and proposing additional mitigation initiatives. During these continuing efforts, the FCHMPC will prioritize their efforts towards focusing on facilities and neighborhoods in known hazard areas, assessing all critical facilities, etc.

In addition to these activities for plan maintenance, the FCHMPC has established recommended schedules for implementation of the proposed priority initiatives included in this edition of the plan. It is expected that the agencies and organizations that sponsored these initiatives for the plan will, during the next planning cycles, take advantage of timely opportunities and available resources to implement them on the desired schedule, if it is possible to do so.

The plan is a dynamic document, reflecting a continuing and expanding planning process. The efforts of the FCHMPC will continue into the future, striving to make all of the jurisdictions of county truly disaster resistant communities.

Summary

The FCHMPC recognizes that it will take a long period of time and implementation of many if not all of the proposed initiatives approved for this plan, to make the county a truly disaster-resistant community. However, the continuing dedication to the safety and welfare of the community shown by the participants in this planning process will make this ambitious goal possible.

Florence County

Hazard Mitigation Plan

Section Six

MITIGATION GOALS AND OBJECTIVES

Introduction

This section of the Florence County Hazard Mitigation Plan describes the goals and objectives established by the FCHMPC, and the completed and anticipated actions for implementation and maintenance of this plan in an ongoing effort to achieve these goals.

Goals and Objectives for the Mitigation Plan

The FCHMPC has established a number of goals and objectives to guide their work in the development of this plan. The goals and objectives help to focus the efforts of the groups in the mitigation planning effort to achieve an end result that matches the unique needs, capabilities and desires of the participating jurisdictions.

The goals and objectives selected for the planning process are those listed in an attachment of this section, in a report entitled “Goals and Objectives”. In this planning approach, the goals are established for both the entire planning area and all of the participating jurisdictions. FCHMPC has reviewed the current goals and objectives. The committee feels these goals and objectives reflect the current needs for Florence County.

Using a “Goal-based” Planning Process

The goals established and adopted by the FCHMPC are considered to be broad, general guidance that define the long-term direction of the planning. As indicated in the list of goals and objectives attached to this section, each goal statement has one or more objectives that provide a more specific framework for actions to be taken. The objectives define actions or results that can be placed into measurable and translated into specific assignments for implementation by the associated agencies and organizations.

The objectives selected by the FCHMPC are intended to create a specific framework for guiding the development of proposed mitigation initiatives for incorporation into the plan. Whenever feasible, the planning participants have attempted to associate each proposed mitigation initiative with the objective statement the initiative is intended to achieve. By associating a mitigation initiative with a specific objective, the proposed initiative is also, of course, intended to help achieve the broader goal statement to which the objective corresponds. Proposing mitigation initiatives that are consistent with the selected objectives is a principal mechanism for the participants to achieve the stated goals of the mitigation planning program.

As the plan is reviewed and updated by the FCHMPC, the goals and objectives are also reviewed to ensure they are still applicable to meeting the unique needs, interests and desires of the community.

Addressing Known Risks and Vulnerabilities

In addition to developing proposed mitigation initiatives to achieve the established goals and objectives, an important emphasis of the FCHMPC is to also include proposed mitigation initiatives in this plan that will address known vulnerabilities of important facilities and neighborhoods to the impacts of future disasters. Basically, because the goals and objectives have been established to make the communities of the planning area more "disaster resistant" by reducing known vulnerabilities to future disasters, it is important in the plan to document those initiatives that are intended to address identified vulnerabilities of facilities, systems and neighborhoods, as well as to strengthen the mitigation-related policy framework of the participating jurisdictions.

Mitigation Planning for Critical Facilities

Another indication of this approach to goal-based mitigation planning in the county is that critical facilities in the participating jurisdictions have been identified and, when applicable, their vulnerabilities to future disasters assessed, as explained in Section 6. To date, a number of mitigation initiatives have been proposed that are intended to benefit these designated critical facilities.

Goals and Objectives for the Local Mitigation Planning

OBJECTIVE	GOAL	
GOAL 1	**Local government will have the capability to develop, implement and maintain effective mitigation programs.**	**Unchanged**
Objective 1	Data and information needed for defining hazards, risk areas and vulnerabilities in the community will be obtained.	Unchanged
Objective 2	The capability to effectively utilize available data and information related to mitigation planning and program development will be available.	Unchanged
Objective 3	The effectiveness of mitigation initiatives implemented in the community will be measured and documented.	Unchanged
Objective 4	There will be a program to derive mitigation "lessons learned" from each significant disaster event occurring in or near the community.	Unchanged
Objective 5	Up to date technical skills in mitigation planning and programming will be available for the community.	Unchanged
GOAL 2	**All sectors of the community will work together to create a disaster resistant community by the year 2020.**	**Unchanged**
Objective 1	A business continuity and recovery program will be established and implemented in the community.	Unchanged
Objective 2	Local agencies and organizations will establish specific interagency agreements for the development and implementation of mitigation related projects and programs	Unchanged
Objective 3	Local elected governing bodies will promulgate the local mitigation plan and support community mitigation programming.	Unchanged
Objective 4	Outreach programs to gain participation in mitigation programs by business, industry, institutions and community groups will be developed and implemented.	Unchanged
Objective 5	The community will be periodically updated regarding local efforts in mitigation planning and programming.	Unchanged
Objective 6	The community's public and private sector organizations will partner to promote hazard mitigation programming throughout the community.	Unchanged
GOAL 3	**The community will have the capability to initiate and sustain emergency response operations during and after a disaster.**	**Unchanged**
Objective 1	Designated evacuation routes will be relocated, retrofitted or modified to remain open before, during and after disaster.	Unchanged
Objective 2	Designated evacuation shelters will be retrofitted or relocated to ensure their operability during and after disaster events.	Unchanged
Objective 3	Emergency services organizations will have the capability to detect emergency situations and promptly initiate emergency response operations.	Unchanged
Objective 4	Local emergency services facilities will be retrofitted or relocated to withstand the structural impacts of disasters.	Unchanged
Objective 5	Response capabilities will be available to protect visitors, special needs individuals, and the homeless from a disaster's health and safety impacts.	Unchanged

Objective 6	Shelters or structures for vehicles and equipment needed for emergency services operation will be retrofitted or relocated to withstand disaster impacts.	Unchanged
Objective 7	Utility and communications systems supporting emergency services operations will be retrofitted or relocated to withstand the impacts of disasters.	Unchanged
Objective 8	Vehicle access routes to key health care facilities will be protected from blockage as a result of a disaster.	Unchanged
GOAL 4	**The continuity of local government operations will not be significantly disrupted by disasters.**	**Unchanged**
Objective 1	Buildings and facilities used for the routine operations of government will be retrofitted or relocated to withstand the impacts of disasters.	Unchanged
Objective 2	Community redevelopment plans will be prepared to guide decision-making and resource allocation by local government in the aftermath of a disaster.	Unchanged
Objective 3	Important local government records and documents will be protected from the impacts of disasters.	Unchanged
Objective 4	Plans and programs will be available to assist local government employees in retrofitting or relocating their homes to ensure their availability during a disaster.	Unchanged
Objective 5	Plans will be developed, and resources identified, to facilitate reestablishing local government operations after a disaster.	Unchanged
Objective 6	Redundant equipment, facilities, and/or supplies will be obtained to facilitate reestablishing local government operations after a disaster.	Unchanged
GOAL 5	**The health, safety and welfare of the community's residents and visitors will not be threatened by disasters.**	**Unchanged**
Objective 1	Adequate systems for notifying the public at risk and providing emergency instruction during a disaster will be available in all identified hazard areas.	Unchanged
Objective 2	Effective structural measures will be developed to protect residential areas from the physical impacts of disasters.	Unchanged
Objective 3	Facilities in the community posing an extra health or safety risk when damaged or disrupted will be made less vulnerable to the impacts of a disaster.	Unchanged
Objective 4	Public and private medical and health care facilities in the community will be retrofitted or relocated to withstand the impacts of disasters.	Unchanged
Objective 5	Residential structures will be removed or relocated from defined hazard areas.	Unchanged
Objective 6	Residential structures will be retrofitted to withstand the physical impacts of disasters.	Unchanged
Objective 7	Safety devices on transportation networks will not fail because of a disaster.	Unchanged
Objective 8	Structures, facilities and systems serving visitors to the community will be prepared to meet their immediate health and safety needs.	Unchanged
Objective 9	There will be adequate resources, equipment and supplies to meet victims' health and safety needs after a disaster.	Unchanged

GOAL 6	**The policies and regulations of local government will support effective hazard mitigation programming throughout the community.**	**Unchanged**
Objective 1	All reconstruction or rehabilitation of local government facilities will incorporate techniques to minimize the physical or operational vulnerability to disasters.	Unchanged
Objective 2	Land use policies, plans and regulations will discourage or prohibit inappropriate location of structures or infrastructure components in areas of higher risk.	Unchanged
Objective 3	Local government will ensure that hazard mitigation needs and programs are given appropriate emphasis in resource allocation and decision-making.	Unchanged
Objective 4	Local governments will establish and enforce building and land development codes that are effective in addressing the hazards threatening the community.	Unchanged
Objective 5	Local governments will protect high hazard natural areas from new or continuing development.	Unchanged
Objective 6	Local jurisdictions will participate fully in the National Flood Insurance Program and the associated Community Rating.	Unchanged
Objective 7	New local government facilities will be located outside of hazard areas and/or will be designed to not be vulnerable to the impacts of such hazards.	Unchanged
Objective 8	Reconstruction and rehabilitation of structures and utilities in the community will incorporate appropriate hazard mitigation techniques.	Unchanged
Objective 9	Regulations will be established and enforced to ensure that public and private property maintenance is consistent with minimizing vulnerabilities to disaster.	Unchanged
GOAL 7	**Residents of the community will have homes, institutions and places of employment that are not vulnerable to disasters.**	**Unchanged**
Objective 1	Economic incentive programs for the general public, businesses and industry to implement structural and non-structural mitigation measures will be established.	Unchanged
Objective 2	Local government will support key employers in the community in the implementation of mitigation measures for their facilities and systems.	Unchanged
Objective 3	Programs for removal, relocation or retrofitting of vulnerable structures and utilities in hazard areas will be established and implemented.	Unchanged
Objective 4	The vulnerability to disasters of schools, libraries, museums, and other institutions important to the daily lives of the community will be minimized.	Unchanged
GOAL 8	**The economic vitality of the community will not be threatened by a disaster.**	**Unchanged**
Objective 1	Components of the infrastructure needed by the community's businesses and industries will be protected from the impacts of disaster.	Unchanged
Objective 2	Local government emergency response and disaster recovery plans will appropriately consider the needs of key employers in the community.	Unchanged
Objective 3	Local government will encourage community businesses and industries to make their facilities and operations disaster.	Unchanged
Objective 4	Local government will establish programs, facilities and resources to support business resumption activities by impacted local businesses and industry.	Unchanged

Objective 5	Local government will implement programs to address public perceptions of community condition and functioning in the aftermath of a disaster.	Unchanged
Objective 6	Local government will strive to diversify the employment base of the community.	Unchanged
GOAL 9	**The availability and functioning of the community's infrastructure will not be significantly disrupted by a disaster here.**	**Unchanged**
Objective 1	Local governments will encourage hazard mitigation programming by private sector organizations owning or operating key community utilities.	Unchanged
Objective 2	Routine maintenance of the community's infrastructure will be done to minimize the potential for system failure because of or during a disaster.	Unchanged
Objective 3	Sources of energy normally used by the community will not be unwarrantedly vulnerable to the impacts of a disaster.	Unchanged
Objective 4	The telecommunications systems and facilities serving the community will not be unwarrantedly vulnerable to the impacts of a disaster.	Unchanged
Objective 5	Transportation facilities and systems serving the community will be constructed and/or retrofitted to minimize the potential for disruption during a disaster.	Unchanged
Objective 6	Water and sewer services in the community will not fail because of a disaster.	Unchanged
GOAL 10	**All members of the community will understand the hazards threatening local areas and the techniques to minimize vulnerability to those hazards**	**Unchanged**
Objective 1	All interested individuals will be encouraged to participate in hazard mitigation planning and training activities.	Unchanged
Objective 2	Education programs in risk communication and hazard mitigation will be established and implemented.	Unchanged
Objective 3	Managers of public facilities will be knowledgeable in hazard mitigation techniques and the components of the community's mitigation plan.	Unchanged
Objective 4	Technical training in mitigation planning and programming will be given to appropriate local government employees.	Unchanged
Objective 5	The owners and operators of businesses and industries in the community will be knowledgeable in appropriate hazard mitigation techniques.	Unchanged
Objective 6	The public living or working in defined hazard areas will be aware of that fact, understand their vulnerability and know appropriate mitigation techniques.	Unchanged
Objective 7	The public will have facilitated access to information needed to understand their vulnerability to disasters and effective mitigation techniques.	Unchanged

Florence County

Hazard Mitigation Plan

Section Seven

COMPILATION OF PROPOSED MITIGATION INITIATIVES

This section of the plan contains the compilation of the proposed mitigation initiatives that have been formulated as the result of the planning efforts by the FCHMPC and the planning staff of the FCHMPC. These mitigation initiatives form the fundamental mechanism for the implementation of the local mitigation plan. That is, when the resources and opportunity to do so become available, the sponsoring organization implements an initiative to address the vulnerabilities of the facilities, systems and neighborhoods that have been identified through the mitigation planning process. After each successful implementation of an initiative, the benefited community will become that much more resistant to the impacts of future disasters.

Initiatives Incorporated into the Mitigation Plan

The compilation is given in the tables included in this section of the plan. This list is the complete compendium of proposed, specific mitigation actions and projects being considered to reduce the effects of each hazard addressed by the county planning committees. The first tables are listed by location.

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

When the FCHMPC reaches a favorable judgment regarding the proposal, it is considered adopted for incorporation into the Plan. The FCHMPC can then review the proposal for any other concerns, such as its consistency with other community-based plans, programs and political policies, and if appropriate, formally approve the proposal and its incorporation into the plan. In this way, each mitigation initiative is only incorporated into the plan after satisfactorily undergoing a "peer review" process considering both technical validity and policy compliance.

Priority Ranking for Proposed Mitigation Initiatives

For the Florence County Hazard Mitigation Plan, the FCHMPC members were tasked with establishing a priority for each action. Prioritization of the proposed mitigation actions was based on the following six (6) factors:

- Effect on overall risk to life and property
- Ease of implementation
- Political and community support
- A general economic cost/benefit review
- Funding availability
- Continued compliance with the NFIP (if applicable)

Using these criteria, actions were classified as high, moderate, or low priority by the participating jurisdiction officials. All of the initiatives listed, are as a result of the common process to characterize and prioritize mitigation initiatives that is used by all participants in the planning process. This priority is a long-term characterization value directly associated with each specific initiative based on its own merits at the time it was first proposed by the individual participant. The priority score is intended to serve as a guideline for the FCHMPC regarding the relative desirability of implementation of a specific mitigation initiative in relation to the other proposed initiatives incorporated into the plan. This also provides the estimated cost to implement each initiative, based on the calculations provided by the organization that would be responsible for this action. This cost can be used to assess funding opportunities as they arise to determine which of the higher priority initiatives could be implemented with the amount of financial support likely to be available.

Benefit-to-Cost Ratio

Only a general economic cost/benefit review was considered by the FCHMPC through the process of selecting and prioritizing mitigation actions. Mitigation actions with "high" priority were determined to be the most cost effective and most compatible with the participating jurisdictions' unique needs. A more detailed cost/benefit analysis will be applied to particular projects prior to the application for or obligation of funding, as appropriate. The format for listing the proposed mitigation initiatives included in the plan is given in the report entitled, "Initiatives by Priority" included as an attachment to this section. This report presents all mitigation initiatives by both priority and benefit-to-cost ratio estimated by the FCHMPC. For an initiative to be considered "cost effective," the dollar value of the benefits derived needs to exceed the costs to implement and maintain the initiative. A more sophisticated methodology for calculating a benefit to cost ratio will be necessary at the time of actual implementation, applying to state or federal agencies for funding, or for the design and construction stage of development. The objective of this analysis is to quickly and easily derive a simple annual economic benefit value that will be useful in the mitigation planning process to differentiate among the economic benefit value of different proposals.

Initiatives by Hazard

The second report attached to this section describe the proposed initiatives included in the plan to address the hazards that have been identified as threatening the participating jurisdictions. These reports are entitled "Initiatives by Hazard," and present the mitigation initiatives that have been proposed to address the identified hazards posing the most risk to the county and its jurisdictions. The reports reflect the attention that the participating jurisdictions have given to the highest risk hazards in formulating mitigation initiatives for incorporation into the plan and for implementation when the resources and opportunities to do so become available. This report is also another example of how the planning approach used by the FCHMPC has effectively used the hazard identification and risk estimation process to guide formulation of proposed initiatives.

Table 7-1describes the key elements of the Mitigation Initiatives

Key Elements of Mitigation Initiatives

Florence County Mitigation Action	Title of Action
Hazard Addressed	Hazard which the action addresses
Goal/Objective Addressed	Goal and objective addressed
Priority(High, Moderate and Low)	In preparing their own individual Mitigation Actions Place, each jurisdiction considered their overall hazard risk and capability to mitigate natural hazards as recorded through the risk and capability assessment process, in addition to meeting the adopted countywide mitigation goals and the unique needs of the unique needs of their community. Prioritizing mitigation actions for each jurisdiction was based on the following five (5) factors: (1) effect on overall risk to life and property; (2) ease of implementation; (3) political and community support; (4) a general economic cost/benefit review; and (5) funding availability. This process is also described on page 8:2, Section 8: Mitigation Strategy.
Lead Agency/Department Responsible	Department responsible for undertaking the action.
Estimated Cost	Anticipated cost of the action.
Potential Funding Source	Local, state or federal sources of funds are noted if applicable.
Implementation Schedule	Date by which the action should be completed.
Implementation Status	Completed, progress, deferment, deleted or no change since the previous plan. If the action is new that will also be noted.
Comments	

Initiatives by Location

City of Florence Initiatives

Florence County Mitigation Action 40	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 50	Retrofit critical facilities as identified for the City of Florence Project Impact study "Natural Hazard Evaluation of Public Facilities, June 2001.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	City of Florence Emergency Management
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal.
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 72	Make provisions for emergency power supply to water and sewer facilities in the event of power failure.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 84	The City of Florence continues to participate in the Community Rating System of the National Flood Insurance Program. The current rating is a Class 8; an improved rating would lower flood insurance premiums as well as help to minimize flood risks.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority	High
Lead Agency/Department Responsible	City of Florence Planning Department
Estimated Cost	$50,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 190	Involve business in community hazard mitigation planning.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 191	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 192	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 207	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and FC Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

City of Lake City Initiatives

Florence County Mitigation Action 3	Develop a reduced water usage plan for continuing operations of city facilities and services during a drought.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Lake City Public Works and utilities
Estimated Cost	Unknown
Potential Funding Source	Local funds
Implementation Schedule	3-5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 4	Install safe rooms in city facilities for the protection of city employees and visitors.
Hazard Addressed	Tornado and thunderstorms and lightning
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	City of Lake City
Estimated Cost	Unknown
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 8	Alter/remove previously damaged structures or components of city facilities to avoid future damage.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 5/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	City of Lake City
Estimated Cost	$100,000.00
Potential Funding Source	Unknown
Implementation Schedule	Unknown
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 12	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	City of Lake City
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds.
Implementation Schedule	2 to 3 years.
Implementation Status	No change
Comments	

Florence County Mitigation Action 15	Develop plan for city operations at alternate location(s) until access restored to city facilities.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	City of Lake City and Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 18	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Low
Lead Agency/Department Responsible	City of Lake City
Estimated Cost	$10,000.00
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	On Going
Comments	

Florence County Mitigation Action 20	Negotiate mutual aid agreements/contracts for substitute services to agriculture.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	Unknown
Potential Funding Source	Unknown
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 21	Identify alternative markets for use of salvage or damaged crops.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 8/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local, state and federal.
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 22	Plan for the rapid condemnation of contaminated food and animal feed products.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Environmental Services
Estimated Cost	$10,000.00
Potential Funding Source	Local and state
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 23	Develop approaches to rapid financial compensation of farmers impacted by disaster events.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 9
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 38	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	On Going
Comments	

Florence County Mitigation Action 44	Conduct a detailed engineering study of historical structures and sites to define vulnerabilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Low
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$25,000.00
Potential Funding Source	Local funds
Implementation Schedule	3 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 45	Ground all electrically-operated equipment at all city facilities.
Hazard Addressed	Lightning
Goal/Objective Addressed	Goal 3/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works and Lake City
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 47	Develop plans for prompt, careful restoration of disaster-caused damages to historical structures and sites.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local, state and federal.
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 52	Develop and implement contracts and agreements with backup suppliers for emergency delivery of critical materials and supplies.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Procurement
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 53	Develop a community wide plan to assist businesses to recover after an event.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	2 to 4 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 54	Involve business in community hazard mitigation planning.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 81	Develop plans to provide temporary pre-event protection for historical structures/contents.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 86	Insure city facilities and/or contents under the National Flood Insurance Program.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds.
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 87	Redesign/reconstruction for less wind resistance; stronger roof covering; strengthen sheathing; install hurricane clips/straps; reduce length of unsupported roof spans; and other roof strengthening techniques as needed for City facilities.
Hazard Addressed	Hurricanes
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 89	Educate community on structure/component vulnerability and actions taken.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 10/Objective 6
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 90	Develop a post-flood clean up, decontamination and recovery plan/procedure.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 92	Promote employee actions for flood protection of their homes and property.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 4/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 93	Inform employees of flood risks for city facilities and sites, and train employees in flood plans/procedures for the protection of city facilities.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$20,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 95	Conduct engineering plan of city structures to determine vulnerability to flooding.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$10,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 97	Enhance the standing of the jurisdiction in the NFIP Community Rating System to lower flooding insurance premiums.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Planning Department
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 99	Develop/apply criteria to future city buildings, sites, landscaping, etc for wind protection.
Hazard Addressed	Hurricane and tornado
Goal/Objective Addressed	Goal 4/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$5,000.00
Potential Funding Source	Local, state and federal
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 101	Train employees in pre-hurricane/storm plans/procedures for facility protection.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 104	Develop plan/procedure for pre-hurricane preparation of city facilities and systems to include removal/storage of exterior features; installing shutters on wall openings; and bracing large doors.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 105	Removal of unnecessary/unused outbuildings, sheds, decks, etc.; install tie-downs for portable outbuildings, sheds, etc.,; strengthen/brace/anchor external features, e.g. decks, etc.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 108	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; make temporary storm shutters and install placement fixtures; install laminated glass in windows/doors; install bracing for larger doors, e.g., garage doors.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$50,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 109	Determine/confirm the elevation of city structures and sites, and or flood height.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Planning Department
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 111	Install surge protection device(s) on the city facilities electrical systems or electronic devices.
Hazard Addressed	Lightning
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$1,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 year
Implementation Status	On Going
Comments	

Florence County Mitigation Action 117	Install standby electric power for city facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$50,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 3 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 118	Develop plans or procedures for modification or control of wastewater treatment facilities upon indication or warning that an infection or disease outbreak could occur.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 122	Construct improved drainage systems and other projects to modify the environmental conditions on city properties conducive to disease outbreak and/or spread.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 126	Relocate historical structures out of the area likely to be impacted where feasible.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 129	Develop Community Emergency Response Teams to provide immediate services following a disaster event.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 9
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 130	Implement a program of routine vegetation control to reduce wildfire risk in and around city properties and facilities.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 6/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 132	Conduct engineering/hydrologic studies to determine the extent of drought vulnerability of the city.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 1/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning Department
Estimated Cost	$25,000.00
Potential Funding Source	Local, state and federal funds.
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 135	Demolish and replace or relocate city structures subject to damage from high winds.
Hazard Addressed	Hurricane, tornado and Thunderstorms
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 136	Install or provide high wind warning equipment in all city facilities.
Hazard Addressed	Hurricane, tornado and thunderstorms
Goal/Objective Addressed	Goal 5/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500.00
Potential Funding Source	Local funds
Implementation Schedule	1 year
Implementation Status	No change
Comments	

Florence County Mitigation Action 139	Install standby water well and equip with generator.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 143	Prepare plan/procedure for relocation/restart of city operations after power loss.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 152	Develop a plan for emergency response to the consequences of a terrorist event at city facilities.
Hazard Addressed	Terrorism
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 156	Develop an emergency response plan/procedure to use in the event of a hazardous materials release.
Hazard Addressed	Hazardous Materials
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 162	Plan for damage assessment and restoration of city services after a lightning strike.
Hazard Addressed	Thunderstorms and lightning
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500.00
Potential Funding Source	Local funds
Implementation Schedule	1 year
Implementation Status	On Going
Comments	

Florence County Mitigation Action 164	Purchase and install fire/smoke alarms and/or sprinkler systems at all city facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$25,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 166	Retrofit city structures for current fire code compliance.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Low
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 170	Alter existing operational procedures at city facilities as appropriate to reduce fire risk.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 170	Ensure adequate/enhanced fire code enforcement at all city facilities and throughout the community.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 171	Install and wire city facilities with permanent generators with fuel storage.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$100,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 173	Provide a separate, uninterruptible monitoring and alarms for hazardous processes at city facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 174	Use prior damage experience to city facilities to prohibit similar construction after a disaster event.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 175	Use damage experience to design and implement city employees and community educational/awareness program.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds.
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 176	Take action on the most likely causes of access blockage for City facilities, including: Elevate roadways or improve drainage for flooding; reconstruct/protect roadway for erosion vulnerability; remove vegetation for mitigation of wildfire and/or wind damage to trees; and strengthen bridges and/or overpasses for flood and/or erosion vulnerability.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 3/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$50,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 208	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Florence County Initiatives

Florence County Mitigation Action 20	Negotiate mutual aid agreements/contracts for substitute services to agriculture.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	Unknown
Potential Funding Source	Unknown
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 21	Identify alternative markets for use of salvage or damaged crops.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 8/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local, state and federal.
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 22	Plan for the rapid condemnation of contaminated food and animal feed products.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Environmental Services
Estimated Cost	$10,000.00
Potential Funding Source	Local and state
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 23	Develop approaches to rapid financial compensation of farmers impacted by disaster events.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 9
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 34	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 54	Involve business in community hazard mitigation planning.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 57	Develop a plan for emergency response to the consequences of a terrorist event.
Hazard Addressed	Terrorism
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 59	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 60	Relocate critical facilities or system components to a less vulnerable area.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 6/Objective 8
Priority	Low
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 89	Educate community on structure/component vulnerability and actions taken.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 10/Objective 6
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 90	Develop a post-flood clean up, decontamination and recovery plan/procedure.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 178	Buyout and/or acquire homes, businesses and property in the floodplain to prevent future losses.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 7/Objective 3
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 179	Perform channel improvements. Examples include: Straighten undesirable bend ways; Deepen and widen stream beds to increase size of waterways; Remove brush, trees and other obstructions; etc.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 180	Utilize GIS to determine which homes in your community are in the floodplain or at risk to flooding. Alert residents and provide information about how they can mitigate their property and homes.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$20,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 181	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 182	Ensure individuals are aware of hurricane potential and review their homeowners or renters insurance policy to ensure they have coverage for wind and/or hurricane damage.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 183	Create a Water Supply Plan for the management of water conservation for rain water catchments and storage.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 184	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 3 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 185	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 186	Ensure citizens are aware of safe landscaping techniques such as using fire-resistant plants and non-flammable design features.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 187	Coordinate with local utility organizations to increase homeowner and community education about potential storm effects and possible mitigation activities.
Hazard Addressed	Severe Winter Weather
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	On Going
Comments	

Florence County Mitigation Action 188	Bury electrical lines where possible to resist damage from heavy snow, ice, sleet, and other hazards.
Hazard Addressed	Severe Winter Weather
Goal/Objective Addressed	Goal 2/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	Unknown
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 189	Ensure public and private buildings are designed, when possible, with structural bracing, shutters, laminated glass in window panes, and hail resistant roof shingles or flashing to minimize damage.
Hazard Addressed	Hail
Goal/Objective Addressed	Goal 6/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	Unknown
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 209	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Coward Initiatives

Florence County Mitigation Action 1	Establish a plan for activating a "Business Recovery Center" after an event.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 8/Objective 4
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500
Potential Funding Source	Local funds
Implementation Schedule	3-5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 9	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Low
Lead Agency/Department Responsible	Town of Coward
Estimated Cost	$25,000.00
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 13	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Town of Coward
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds.
Implementation Schedule	2 to 3 years.
Implementation Status	No change
Comments	

Florence County Mitigation Action 14	Develop a plan for alternate means for employees to receive information.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Town of Coward and Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local and state funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 16	Develop plan for city operations at alternate location(s) until access restored to city facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Town of Coward and Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	Unknown
Implementation Status	No change
Comments	

Florence County Mitigation Action 19	Protect or relocate essential utility and communications equipment serving town facilities from hailstone damage.
Hazard Addressed	Hail storms
Goal/Objective Addressed	Goal 3/Objective 7
Priority	Low
Lead Agency/Department Responsible	Florence County Public works and utilities
Estimated Cost	$10,000.00
Potential Funding Source	Local, state or federal.
Implementation Schedule	3 to 5 years.
Implementation Status	No change.
Comments	

Florence County Mitigation Action 25	Develop a reduced water usage plan for continuing facility operations during a drought.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 27	Conduct landscaping/vegetation control program at all town facilities to reduce wildfire risk.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 3/Objective 4
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$10,000.00
Potential Funding Source	Local
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 28	Promote employees taking action to protect their homes and property from flood damage.
Hazard Addressed	Flood
Goal/Objective Addressed	Goal 10/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 29	Develop a plan/procedure for flood damage control for town facilities.
Hazard Addressed	Flood
Goal/Objective Addressed	Goal 1/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 31	Train employees in pre-hurricane/storm plans/procedures for protection of town facilities.
Hazard Addressed	Flood
Goal/Objective Addressed	Goal 6/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 32	Develop plans/procedures for pre-hurricane preparation of town facilities.
Hazard Addressed	Hurricane
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 57	Develop a plan for emergency response to the consequences of a terrorist event.
Hazard Addressed	Terrorism
Goal/Objective Addressed	Goal 4/Objective 5
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 59	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 60	Relocate critical facilities or system components to a less vulnerable area.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 6/Objective 8
Priority	Low
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$250,000.00
Potential Funding Source	Local, state and federal
Implementation Schedule	3 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 61	Protect computers and telecommunications capabilities against power loss.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 4
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$5,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 64	Install and wire Town facilities with permanent generator with fuel storage. (Alternatives to this initiative include relocating critical operations to another facility equipped with generator, or negotiating contracts for rental of portable generators. Purchase of permanent generators is preferred.)
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 3/Objective 7
Priority	Low
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$80,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 65	Ensure adequate/enhanced fire code enforcement at town facilities.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 9/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Fire Department and Codes Enforcement
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 66	Purchase and install fire/smoke alarm and/or sprinkler system.
Hazard Addressed	Wildfire
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Fire Department
Estimated Cost	$10,000.00
Potential Funding Source	Local and state funds.
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 69	Prepare a plan for sheltering/evacuation of town facilities personnel.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 5/Objective 8
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Town of Johnsonville Initiatives

Florence County Mitigation Action 36	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 201	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 202	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 203	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 210	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Olanta Initiatives

Florence County Mitigation Action 33	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 198	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 199	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 200	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Town of Pamplico Initiatives

Florence County Mitigation Action 37	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 204	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 205	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 206	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 211	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Quinby Initiatives

Florence County Mitigation Action 38	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	Ongoing
Comments	

Florence County Mitigation Action 196	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 197	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 208	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Scranton Initiatives

Florence County Mitigation Action 2	Harden utility services to town facilities by replacing/burying above-grade utility services and by strengthening utility poles/conductor fixtures.
Hazard Addressed	All hazards except drought.
Goal/Objective Addressed	Goal 3/Objective 7
Priority	High
Lead Agency/Department Responsible	Florence County Public Works and utilities
Estimated Cost	Unknown
Potential Funding Source	Unknown
Implementation Schedule	Planning stage
Implementation Status	No change
Comments	

Florence County Mitigation Action 39	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	No Change
Comments	

Florence County Mitigation Action 74	Negotiate contract with alternate water supplier for emergency services.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 3/Objective 7
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 75	Install portable generator with wiring for water system and police department operations.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works
Estimated Cost	$40,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 76	Maintain the reduced water usage plan (Drought Ordinance) for continuing facility operations during a drought.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Town of Scranton
Estimated Cost	Unknown
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 77	Install equipment or modify processes to reduce the water dependency of town facilities.
Hazard Addressed	Drought
Goal/Objective Addressed	Goal 9/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Public Works
Estimated Cost	$1,000.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 80	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; install laminated glass in windows/doors; and install bracing for larger doors at town facilities.
Hazard Addressed	All hazards
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Public Works and Florence County Emergency Management
Estimated Cost	$5,500.00
Potential Funding Source	Local funds
Implementation Schedule	2 to 5 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 85	Protect town facilities from flood damage by improving drainage in proximity to the facilities.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 4/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$10,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	1 to 2 years
Implementation Status	No change
Comments	

Florence County Mitigation Action 212	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Town of Timmonsville Initiatives

Florence County Mitigation Action 177	Conduct a hazard vulnerability assessment for all town facilities and sites.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 1/Objective 1
Priority	High
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local and state funds
Implementation Schedule	1 year
Implementation Status	No Change
Comments	

Florence County Mitigation Action 193	Involve business in community hazard mitigation planning.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 2/Objective 1
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$5,000.00
Potential Funding Source	Local Funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 194	Develop a plan/procedure for employee/community education on potential disaster impacts.
Hazard Addressed	Drought, Earthquake, Flooding, Hailstorm, Hurricane, Winter Storm, Tornado, Wildfire, and Severe Thunderstorm & Lightning
Goal/Objective Addressed	Goal 10/Objective 6
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$2,500.00
Potential Funding Source	Local funds
Implementation Schedule	1 to 2 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 195	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.
Hazard Addressed	Earthquake
Goal/Objective Addressed	Goal 4/Objective 2
Priority	Moderate
Lead Agency/Department Responsible	Florence County Emergency Management
Estimated Cost	$500,000.00
Potential Funding Source	Local, state and federal funds
Implementation Schedule	2 to 5 years
Implementation Status	No Change
Comments	

Florence County Mitigation Action 213	Maintain compliance with the NFIP.
Hazard Addressed	Flooding
Goal/Objective Addressed	Goal 6/Objective 6
Priority(High, Moderate and Low)	High
Lead Agency/Department Responsible	Florence County Emergency Management and Florence County Planning
Estimated Cost	Unknown
Potential Funding Source	Local, State and Federal
Implementation Schedule	Yearly
Implementation Status	On Going
Comments	

Initiatives By Priority

Priority	Initiative	Location
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Lake City
High	Develop a community wide plan to assist businesses to recover after an event.	Lake City
High	Educate community on structure/component vulnerability and actions taken.	Lake City
High	Develop/apply criteria to future city buildings, sites, landscaping, etc for wind protection.	Lake City
High	Removal of unnecessary/unused outbuildings, sheds, decks, etc.; install tie-downs for portable outbuildings, sheds, etc.,; strengthen/brace/anchor external features, e.g. decks, etc.	Lake City
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	City of Florence
High	The City of Florence continues to participate in the Community Rating System of the National Flood Insurance Program. The current rating is a Class 8; an improved rating would lower flood insurance premiums as well as help to minimize flood risks.	City of Florence
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Florence County
High	Educate community on structure/component vulnerability and actions taken.	Florence County
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Johnsonville
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Olanta
High	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Pamplico
High	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Quinby
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Timmonsville
High	Harden utility services to town facilities by replacing/burying above-grade utility services and by strengthening utility poles/conductor fixtures.	Town of Scranton
High	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Scranton
Moderate	Develop a reduced water usage plan for continuing operations of city facilities and services during a drought.	Lake City
Moderate	Install safe rooms in city facilities for the protection of city employees and visitors.	Lake City

Moderate	Alter/remove previously damaged structures or components of city facilities to avoid future damage.	Lake City
Moderate	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.	Lake City
Moderate	Develop plan for city operations at alternate location(s) until access restored to city facilities.	Lake City
Moderate	Negotiate mutual aid agreements/contracts for substitute services to agriculture.	Lake City
Moderate	Identify alternative markets for use of salvage or damaged crops.	Lake City
Moderate	Plan for the rapid condemnation of contaminated food and animal feed products.	Lake City
Moderate	Develop approaches to rapid financial compensation of farmers impacted by disaster events.	Lake City
Moderate	Ground all electrically-operated equipment at all city facilities.	Lake City
Moderate	Develop plans for prompt, careful restoration of disaster-caused damages to historical structures and sites.	Lake City
Moderate	Develop and implement contracts and agreements with backup suppliers for emergency delivery of critical materials and supplies.	Lake City
Moderate	Involve business in community hazard mitigation planning.	Lake City
Moderate	Develop plans to provide temporary pre-event protection for historical structures/contents.	Lake City
Moderate	Insure city facilities and/or contents under the National Flood Insurance Program.	Lake City
Moderate	Redesign/reconstruction for less wind resistance; stronger roof covering; strengthen sheathing; install hurricane clips/straps; reduce length of unsupported roof spans; and other roof strengthening techniques as needed for City facilities.	Lake City
Moderate	Develop a post-flood clean up, decontamination and recovery plan/procedure.	Lake City
Moderate	Promote employee actions for flood protection of their homes and property.	Lake City
Moderate	Inform employees of flood risks for city facilities and sites, and train employees in flood plans/procedures for the protection of city facilities.	Lake City
Moderate	Conduct engineering plan of city structures to determine vulnerability to flooding.	Lake City
Moderate	Enhance the standing of the jurisdiction in the NFIP Community Rating System to lower flooding insurance premiums.	Lake City
Moderate	Train employees in pre-hurricane/storm plans/procedures for facility protection.	Lake City
Moderate	Develop plan for pre-hurricane preparation of city facilities and systems to include removal/storage of exterior features; installing shutters on wall openings; and bracing large doors.	Lake City

Moderate	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; make temporary storm shutters and install placement fixtures; install laminated glass in windows/doors; install bracing for larger doors, e.g., garage doors.	Lake City
Moderate	Determine/confirm the elevation of city structures and sites, and or flood height.	Lake City
Moderate	Install surge protection device(s) on the city facilities electrical systems or electronic devices.	Lake City
Moderate	Install standby electric power for city facilities.	Lake City
Moderate	Develop plans or procedures for modification or control of wastewater treatment facilities upon indication or warning that an infection or disease outbreak could occur.	Lake City
Moderate	Relocate historical structures out of the area likely to be impacted where feasible.	Lake City
Moderate	Develop Community Emergency Response Teams to provide immediate services following a disaster event.	Lake City
Moderate	Implement a program of routine vegetation control to reduce wildfire risk in and around city properties and facilities.	Lake City
Moderate	Conduct engineering/hydrologic studies to determine the extent of drought vulnerability of the city.	Lake City
Moderate	Demolish and replace or relocate city structures subject to damage from high winds.	Lake City
Moderate	Install or provide high wind warning equipment in all city facilities.	Lake City
Moderate	Prepare plan/procedure for relocation/restart of city operations after power loss.	Lake City
Moderate	Develop a plan for emergency response to the consequences of a terrorist event at city facilities.	Lake City
Moderate	Develop an emergency response plan/procedure to use in the event of a hazardous materials release.	Lake City
Moderate	Plan for damage assessment and restoration of city services after a lightning strike.	Lake City
Moderate	Purchase and install fire/smoke alarms and/or sprinkler systems at all city facilities.	Lake City
Moderate	Alter existing operational procedures at city facilities as appropriate to reduce fire risk.	Lake City
Moderate	Ensure adequate/enhanced fire code enforcement at all city facilities and throughout the community.	Lake City
Moderate	Provide a separate, uninterruptible monitoring and alarms for hazardous processes at city facilities.	Lake City
Moderate	Use prior damage experience to city facilities to prohibit similar construction after a disaster event.	Lake City
Moderate	Use damage experience to design and implement city employees and community educational/awareness program.	Lake City

Moderate	Take action on the most likely causes of access blockage for City facilities, including: Elevate roadways or improve drainage for flooding; reconstruct/protect roadway for erosion vulnerability; remove vegetation for mitigation of wildfire and/or wind damage to trees; and strengthen bridges and/or overpasses for flood and/or erosion vulnerability.	Lake City
Moderate	Retrofit critical facilities as identified for the City of Florence Project Impact study "Natural Hazard Evaluation of Public Facilities, June 2001.	City of Florence
Moderate	Make provisions for emergency power supply to water and sewer facilities in the event of power failure.	City of Florence
Moderate	Involve business in community hazard mitigation planning.	City of Florence
Moderate	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.	City of Florence
Moderate	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.	City of Florence
Moderate	Negotiate mutual aid agreements/contracts for substitute services to agriculture.	Florence County
Moderate	Identify alternative markets for use of salvage or damaged crops.	Florence County
Moderate	Plan for the rapid condemnation of contaminated food and animal feed products.	Florence County
Moderate	Develop approaches to rapid financial compensation of farmers impacted by disaster events.	Florence County
Moderate	Involve business in community hazard mitigation planning.	Florence County
Moderate	Develop a plan for emergency response to the consequences of a terrorist event.	Florence County
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Florence County
Moderate	Develop a post-flood clean up, decontamination and recovery plan/procedure.	Florence County
Moderate	Buyout and/or acquire homes, businesses and property in the floodplain to prevent future losses.	Florence County
Moderate	Perform channel improvements. Examples include: Straighten undesirable bend ways; Deepen and widen stream beds to increase size of waterways; Remove brush, trees and other obstructions; etc.	Florence County
Moderate	Utilize GIS to determine which homes in your community are in the floodplain or at risk to flooding. Alert residents and provide information about how they can mitigate their property and homes.	Florence County
Moderate	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.	Florence County

Moderate	Ensure individuals are aware of hurricane potential and review their homeowners or renters insurance policy to ensure they have coverage for wind and/or hurricane damage.	Florence County
Moderate	Create a Water Supply Plan for the management of water conservation for rain water catchments and storage.	Florence County
Moderate	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.	Florence County
Moderate	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Florence County
Moderate	Ensure citizens are aware of safe landscaping techniques such as using fire-resistant plants and non-flammable design features.	Florence County
Moderate	Coordinate with local utility organizations to increase homeowner and community education about potential storm effects and possible mitigation activities.	Florence County
Moderate	Bury electrical lines where possible to resist damage from heavy snow, ice, sleet, and other hazards.	Florence County
Moderate	Ensure public and private buildings are designed, when possible, with structural bracing, shutters, laminated glass in window panes, and hail resistant roof shingles or flashing to minimize damage.	Florence County
Moderate	Establish a plan for activating a “Business Recovery Center” after an event.	Town of Coward
Moderate	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.	Town of Coward
Moderate	Develop a plan for alternate means for employees to receive information.	Town of Coward
Moderate	Develop plan for city operations at alternate location(s) until access restored to city facilities.	Town of Coward
Moderate	Develop a reduced water usage plan for continuing facility operations during a drought.	Town of Coward
Moderate	Promote employees taking action to protect their homes and property from flood damage.	Town of Coward
Moderate	Develop a plan/procedure for flood damage control for town facilities.	Town of Coward
Moderate	Train employees in pre-hurricane/storm plans/procedures for protection of town facilities.	Town of Coward
Moderate	Develop plans/procedures for pre-hurricane preparation of town facilities.	Town of Coward
Moderate	Develop a plan for emergency response to the consequences of a terrorist event.	Town of Coward
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Coward
Moderate	Ensure adequate/enhanced fire code enforcement at town facilities.	Town of Coward

Moderate	Purchase and install fire/smoke alarm and/or sprinkler system.	Town of Coward
Moderate	Prepare a plan for sheltering/evacuation of town facilities personnel.	Town of Coward
Moderate	Involve business in community hazard mitigation planning.	Town of Johnsonville
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Johnsonville
Moderate	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Johnsonville
Moderate	Involve business in community hazard mitigation planning.	Town of Olanta
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Olanta
Moderate	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Olanta
Moderate	Involve business in community hazard mitigation planning.	Town of Pamplico
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Pamplico
Moderate	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Pamplico
Moderate	Involve business in community hazard mitigation planning.	Town of Quinby
Moderate	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Quinby
Moderate	Involve business in community hazard mitigation planning.	Town of Timmonsville
Moderate	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Timmonsville
Moderate	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Timmonsville
Moderate	Negotiate contract with alternate water supplier for emergency services.	Town of Scranton
Moderate	Install portable generator with wiring for water system and police department operations.	Town of Scranton
Moderate	Maintain the reduced water usage plan (Drought Ordinance) for continuing facility operations during a drought.	Town of Scranton
Moderate	Install equipment or modify processes to reduce the water dependency of town facilities.	Town of Scranton
Moderate	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; install laminated glass in windows/doors; and install bracing for larger doors at town facilities.	Town of Scranton
Moderate	Protect town facilities from flood damage by improving drainage in proximity to the facilities.	Town of Scranton

Low	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.	Lake City
Low	Conduct a detailed engineering study of historical structures and sites to define vulnerabilities.	Lake City
Low	Construct improved drainage systems and other projects to modify the environmental conditions on city properties conducive to disease outbreak and/or spread.	Lake City
Low	Install standby water well and equip with generator.	Lake City
Low	Retrofit city structures for current fire code compliance.	Lake City
Low	Install and wire city facilities with permanent generators with fuel storage.	Lake City
Low	Relocate critical facilities or system components to a less vulnerable area.	Florence County
Low	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.	Town of Coward
Low	Protect or relocate essential utility and communications equipment serving town facilities from hailstone damage.	Town of Coward
Low	Conduct landscaping/vegetation control program at all town facilities to reduce wildfire risk.	Town of Coward
Low	Relocate critical facilities or system components to a less vulnerable area.	Town of Coward
Low	Protect computers and telecommunications capabilities against power loss.	Town of Coward
Low	Install and wire Town facilities with permanent generator with fuel storage. (Alternatives to this initiative include relocating critical operations to another facility equipped with generator, or negotiating contracts for rental of portable generators. Purchase of permanent generats is preferred.)	Town of Coward

Initiatives By Hazard

Hazard	Initiative	Location
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	City of Florence
All Hazards	Retrofit critical facilities as identified for the City of Florence Project Impact study "Natural Hazard Evaluation of Public Facilities, June 2001.	City of Florence
All Hazards	Make provisions for emergency power supply to water and sewer facilities in the event of power failure.	City of Florence
All Hazards	Involve business in community hazard mitigation planning.	City of Florence
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Florence County
All Hazards	Negotiate mutual aid agreements/contracts for substitute services to agriculture.	Florence County
All Hazards	Identify alternative markets for use of salvage or damaged crops.	Florence County
All Hazards	Plan for the rapid condemnation of contaminated food and animal feed products.	Florence County
All Hazards	Develop approaches to rapid financial compensation of farmers impacted by disaster events.	Florence County
All Hazards	Involve business in community hazard mitigation planning.	Florence County
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Florence County
All Hazards	Relocate critical facilities or system components to a less vulnerable area.	Florence County
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Lake City
All Hazards	Develop a community wide plan to assist businesses to recover after an event.	Lake City
All Hazards	Alter/remove previously damaged structures or components of city facilities to avoid future damage.	Lake City
All Hazards	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.	Lake City
All Hazards	Develop plan for city operations at alternate location(s) until access restored to city facilities.	Lake City
All Hazards	Negotiate mutual aid agreements/contracts for substitute services to agriculture.	Lake City
All Hazards	Identify alternative markets for use of salvage or damaged crops.	Lake City
All Hazards	Plan for the rapid condemnation of contaminated food and animal feed products.	Lake City
All Hazards	Develop approaches to rapid financial compensation of farmers impacted by disaster events.	Lake City

All Hazards	Develop plans for prompt, careful restoration of disaster-caused damages to historical structures and sites.	Lake City
All Hazards	Develop and implement contracts and agreements with backup suppliers for emergency delivery of critical materials and supplies.	Lake City
All Hazards	Involve business in community hazard mitigation planning.	Lake City
All Hazards	Develop plans to provide temporary pre-event protection for historical structures/contents.	Lake City
All Hazards	Install standby electric power for city facilities.	Lake City
All Hazards	Develop plans or procedures for modification or control of wastewater treatment facilities upon indication or warning that an infection or disease outbreak could occur.	Lake City
All Hazards	Relocate historical structures out of the area likely to be impacted where feasible.	Lake City
All Hazards	Develop Community Emergency Response Teams to provide immediate services following a disaster event.	Lake City
All Hazards	Prepare plan/procedure for relocation/restart of city operations after power loss.	Lake City
All Hazards	Purchase and install fire/smoke alarms and/or sprinkler systems at all city facilities.	Lake City
All Hazards	Alter existing operational procedures at city facilities as appropriate to reduce fire risk.	Lake City
All Hazards	Ensure adequate/enhanced fire code enforcement at all city facilities and throughout the community.	Lake City
All Hazards	Use prior damage experience to city facilities to prohibit similar construction after a disaster event.	Lake City
All Hazards	Use damage experience to design and implement city employees and community educational/awareness program.	Lake City
All Hazards	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.	Lake City
All Hazards	Conduct a detailed engineering study of historical structures and sites to define vulnerabilities.	Lake City
All Hazards	Construct improved drainage systems and other projects to modify the environmental conditions on city properties conducive to disease outbreak and/or spread.	Lake City
All Hazards	Retrofit city structures for current fire code compliance.	Lake City
All Hazards	Install and wire city facilities with permanent generators with fuel storage.	Lake City
All Hazards	Establish a plan for activating a “Business Recovery Center” after an event.	Town of Coward
All Hazards	Purchase an alternate communication system to prevent major disruptions to normal city operations until communications are restored following a disaster event.	Town of Coward

All Hazards	Develop a plan for alternate means for employees to receive information.	Town of Coward
All Hazards	Develop plan for city operations at alternate location(s) until access restored to city facilities.	Town of Coward
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Coward
All Hazards	Ensure adequate/enhanced fire code enforcement at town facilities.	Town of Coward
All Hazards	Purchase and install fire/smoke alarm and/or sprinkler system.	Town of Coward
All Hazards	Prepare a plan for sheltering/evacuation of town facilities personnel.	Town of Coward
All Hazards	Construct an alternate/redundant access route to town facilities to allow operational capabilities when the primary access route becomes blocked.	Town of Coward
All Hazards	Relocate critical facilities or system components to a less vulnerable area.	Town of Coward
All Hazards	Protect computers and telecommunications capabilities against power loss.	Town of Coward
All Hazards	Install and wire Town facilities with permanent generator with fuel storage. (Alternatives to this initiative include relocating critical operations to another facility equipped with generator, or negotiating contracts for rental of portable generators. Purchase of permanent generator is preferred.)	Town of Coward
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Johnsonville
All Hazards	Involve business in community hazard mitigation planning.	Town of Johnsonville
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Johnsonville
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Olanta
All Hazards	Involve business in community hazard mitigation planning.	Town of Olanta
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Olanta
All Hazards	Involve business in community hazard mitigation planning.	Town of Pamplico
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Pamplico
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Pamplico
All Hazards	Involve business in community hazard mitigation planning.	Town of Quinby
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Quinby

All Hazards	Harden utility services to town facilities by replacing/burying above-grade utility services and by strengthening utility poles/conductor fixtures.	Town of Scranton
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Scranton
All Hazards	Negotiate contract with alternate water supplier for emergency services.	Town of Scranton
All Hazards	Install portable generator with wiring for water system and police department operations.	Town of Scranton
All Hazards	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; install laminated glass in windows/doors; and install bracing for larger doors at town facilities.	Town of Scranton
All Hazards	Conduct a hazard vulnerability assessment for all town facilities and sites.	Town of Timmonsville
All Hazards	Involve business in community hazard mitigation planning.	Town of Timmonsville
All Hazards	Develop a plan/procedure for employee/community education on potential disaster impacts.	Town of Timmonsville
Drought	Create a Water Supply Plan for the management of water conservation for rain water catchments and storage.	Florence County
Drought	Develop a reduced water usage plan for continuing operations of city facilities and services during a drought.	Lake City
Drought	Conduct engineering/hydrologic studies to determine the extent of drought vulnerability of the city.	Lake City
Drought	Install standby water well and equip with generator.	Lake City
Drought	Develop a reduced water usage plan for continuing facility operations during a drought.	Town of Coward
Drought	Maintain the reduced water usage plan (Drought Ordinance) for continuing facility operations during a drought.	Town of Scranton
Drought	Install equipment or modify processes to reduce the water dependency of town facilities.	Town of Scranton
Earthquake	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.	City of Florence
Earthquake	Ensure individuals are aware of earthquake potential and review their homeowners or renters insurance policy to ensure they have coverage for earthquake damage.	Florence County
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Florence County
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Johnsonville
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Olanta

Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Pamplico
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Quinby
Earthquake	Retrofit critical facilities to ensure they remain operational post-earthquake, i.e., schools, local governments and corporations.	Town of Timmonsville
Flooding	The City of Florence continues to participate in the Community Rating System of the National Flood Insurance Program. The current rating is a Class 8; an improved rating would lower flood insurance premiums as well as help to minimize flood risks.	City of Florence
Flooding	Educate community on structure/component vulnerability and actions taken.	Florence County
Flooding	Develop a post-flood clean up, decontamination and recovery plan/procedure.	Florence County
Flooding	Buyout and/or acquire homes, businesses and property in the floodplain to prevent future losses.	Florence County
Flooding	Perform channel improvements. Examples include: Straighten undesirable bend ways; Deepen and widen stream beds to increase size of waterways; Remove brush, trees and other obstructions; etc.	Florence County
Flooding	Utilize GIS to determine which homes in your community are in the floodplain or at risk to flooding. Alert residents and provide information about how they can mitigate their property and homes.	Florence County
Flooding	Educate community on structure/component vulnerability and actions taken.	Lake City
Flooding	Insure city facilities and/or contents under the National Flood Insurance Program.	Lake City
Flooding	Develop a post-flood clean up, decontamination and recovery plan/procedure.	Lake City
Flooding	Promote employee actions for flood protection of their homes and property.	Lake City
Flooding	Inform employees of flood risks for city facilities and sites, and train employees in flood plans/procedures for the protection of city facilities.	Lake City
Flooding	Conduct engineering plan of city structures to determine vulnerability to flooding.	Lake City
Flooding	Enhance the standing of the jurisdiction in the NFIP Community Rating System to lower flooding insurance premiums.	Lake City
Flooding	Determine/confirm the elevation of city structures and sites, and or flood height.	Lake City

Flooding	Take action on the most likely causes of access blockage for City facilities, including: Elevate roadways or improve drainage for flooding; reconstruct/protect roadway for erosion vulnerability; remove vegetation for mitigation of wildfire and/or wind damage to trees; and strengthen bridges and/or overpasses for flood and/or erosion vulnerability.	Lake City
Flooding	Promote employees taking action to protect their homes and property from flood damage.	Town of Coward
Flooding	Develop a plan/procedure for flood damage control for town facilities.	Town of Coward
Flooding	Protect town facilities from flood damage by improving drainage in proximity to the facilities.	Town of Scranton
Hail	Ensure public and private buildings are designed, when possible, with structural bracing, shutters, laminated glass in window panes, and hail resistant roof shingles or flashing to minimize damage.	Florence County
Hail	Protect or relocate essential utility and communications equipment serving town facilities from hailstone damage.	Town of Coward
Hazardous Materials	Develop an emergency response plan/procedure to use in the event of a hazardous materials release.	Lake City
Hazardous Materials	Provide a separate, uninterruptible monitoring and alarms for hazardous processes at city facilities.	Lake City
Hurricane	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.	City of Florence
Hurricane	Retrofit local and state government facilities with storm shutters, laminated or impact-resistant glass, anchor bolts, hurricane straps and clips.	Florence County
Hurricane	Ensure individuals are aware of hurricane potential and review their homeowners or renters insurance policy to ensure they have coverage for wind and/or hurricane damage.	Florence County
Hurricane	Removal of unnecessary/unused outbuildings, sheds, decks, etc.; install tie-downs for portable outbuildings, sheds, etc.,; strengthen/brace/anchor external features, e.g. decks, etc.	Lake City
Hurricane	Train employees in pre-hurricane/storm plans/procedures for facility protection.	Lake City
Hurricane	Develop plan/procedure for pre-hurricane preparation of city facilities and systems to include removal/storage of exterior features; installing shutters on wall openings; and bracing large doors.	Lake City
Hurricane	Redesign/reconstruct smaller wall openings; install permanent storm shutters on windows and doors; make temporary storm shutters and install placement fixtures; install laminated glass in windows/doors; install bracing for larger doors, e.g., garage doors.	Lake City

Hurricane	Train employees in pre-hurricane/storm plans/procedures for protection of town facilities.	Town of Coward
Hurricane	Develop plans/procedures for pre-hurricane preparation of town facilities.	Town of Coward
Hurricane Tornado	Develop/apply criteria to future city buildings, sites, landscaping, etc for wind protection.	Lake City
Hurricane Tornado	Demolish and replace or relocate city structures subject to damage from high winds.	Lake City
Hurricanes	Redesign/reconstruction for less wind resistance; stronger roof covering; strengthen sheathing; install hurricane clips/straps; reduce length of unsupported roof spans; and other roof strengthening techniques as needed for City facilities.	Lake City
Lightning	Ground all electrically-operated equipment at all city facilities.	Lake City
Lightning	Install surge protection device(s) on the city facilities electrical systems or electronic devices.	Lake City
Lightning	Plan for damage assessment and restoration of city services after a lightning strike.	Lake City
Terrorism	Develop a plan for emergency response to the consequences of a terrorist event.	Florence County
Terrorism	Develop a plan for emergency response to the consequences of a terrorist event at city facilities.	Lake City
Terrorism	Develop a plan for emergency response to the consequences of a terrorist event.	Town of Coward
Tornado Thunderstorms	Install safe rooms in city facilities for the protection of city employees and visitors.	Lake City
Tornado Thunderstorms	Install or provide high wind warning equipment in all city facilities.	Lake City
Wildfires	Ensure citizens are aware of safe landscaping techniques such as using fire-resistant plants and non-flammable design features.	Florence County
Wildfires	Implement a program of routine vegetation control to reduce wildfire risk in and around city properties and facilities.	Lake City
Wildfires	Conduct landscaping/vegetation control program at all town facilities to reduce wildfire risk.	Town of Coward
Winter Weather	Coordinate with local utility organizations to increase homeowner and community education about potential storm effects and possible mitigation activities.	Florence County
Winter Weather	Bury electrical lines where possible to resist damage from heavy snow, ice, sleet, and other hazards.	Florence County

Appendix A
Florence County Stakeholders

Marion Joyner, Florence County Public Works
Dianne Thomas, Mayor, Town of Coward
Terry Knotts, Mayor, Town of Scranton
Steve Dukes, Town of Johnsonville
Ashby Greg, Mayor, Town of Quinby
Michael Welch, Mayor, Town of Olanta
Darrick Jackson, Mayor, Town of Timmonsville
Gene Gainey, Mayor, Town of Pamplico
Lovith Anderson, Mayor, City of Lake City
Drew Griffin, City of Florence Manager
Aubrey Carroll, Florence County Library System
Scott Tanner, City of Johnsonville
Ryon Watkins, Florence County EMS
Herbie Christmas, Florence County Environmental Services
Ronnie Pridgen, Florence County Parks and Recreation
Shawn Brashear, Florence County Building and Planning
Crys Hoge, Florence County GIS Department
Robbie Ervin, Florence County GIS Department
Mike Puckett, McLeod Regional Medical Center
Chief Michael King, Coward Police Department
Chief Donald Tarbell, Francis Marion University Public
Safety Capt. George Mack, Florence Police Department
Johnathan Atkinson, Florence County Floodplain Manager
Curt Whaley, Florence County Building and Planning
Doug Nunnaly, FSD1
Chief Howard Worrell, West Florence Fire Department Jeff
DeLung, City of Florence Fire Department
Adam Swindler, City of Florence
Neal Vincent, FSD2
Ryan Guerry, SCEMD
Chief John DeLung, Windy Hill Fire Department
Chief Ron Douglas, Johnsonville Police Department
Mike Patterson, Salvation Army
Emmanuel Igwe, Hope Network
Cliff Satterwhite, SC Baptist Disaster Relief
Michael Murphy, Harvest Hope
Wendy Byrd, United Way of Florence County
Chris Collins, ARC
Greg Haseldon, SCEMD
RJ Bean, SCDOT
CH Coleman, SCDOT
James Grant, SCEMD
Elizabeth Faulk, SC DSS
Charlotte Krugler, Clemson Extension
Orbree Friday, SC DSS
Harrison Ford, FDTC
Randy Smiley, FSD5
Pam Little-McDaniel, FSD1
Chad Reel, Maranatha School
Ed Hoffman, Trinity Byrnes School
Joan Pennstrom, All Saints School

Don Wilson, Kings Academy
Charles Hyman, FSD2
Jay Alexander, FSD3
Ken Hyman, FSD4
Dr Richard O'Malley, FSD1
Chief Donnie Windham, Timmonsville Rescue
Celeste Johnson, Hope Health
Alisha Jeff, Regency Hospital
Brandon Hooks, MUSC Florence
Chief Randy Osterman, City of Florence Fire
Chief Randy Driggers, Lake City FD
Chief Jimmy Coker, Olanta FD
Chief John DeLung, Windy Hill FD
Chief M. Tedder, Hanna-Salem FD
Chief Jeff Dennis, Sardis-Timmonsville FD
Sunny Collins, SCHP
Chief Coker, Lake City PD
Glenn Kirby, FCSO
Chief Kenney Coxe, Quinby PD
Chief Ron Douglas, Johnsonville PD
Nathan Emery, Otis Elevator
Deandre Stallworth, GE
Henry Swink, McCall Farms
Jim Anderson, Ingram Lumber
Chad Hensley, Honda of SC
Dustin Harcrow, IFH
Brian Kelley, Pee Dee Electric
Kim Davis, PFGC
Beth O'Shields, Duke Energy
Ronald McVoy, QVC
Benny Mullins, PDRTA
Rick Wilder, IFH
Nick Jacobs, Vulcraft
R Cooper, Santee Electric
Carl Smith, Monster
AJ Shortall, Pepsi of Florence
David Morris, CSX
Ignacio Albarran, Ruiz Foods
John Northup, Irix Pharmaceuticals
Ken Acker, Rock Tenn
Ryan Owens, Koppers

ACADEMIA

1. Name of your Academic Institution (school, district, higher education institution):

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your academic institution been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

6. Do your facilities provide sheltering services during hazard events?

7. Do you believe that your facilities and associated infrastructure are disaster-resistant, or capable of withstanding a natural disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?

8. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

9. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your academic functions during and after hazard events?

10. If your facilities are American Red Cross designated shelters, do you believe they are adequately designed and equipped to support sheltering during and after hazard events? Do your facilities have generator capabilities to support the American Red Cross shelter?

11. Do you think that weather forecasts and announcements of road closures and pending road closures are sufficiently accurate and available to support your institution's operation and student transportation decisions in the event of hazard events?

12. Do you believe that emergency response planning, services, and equipment are capable of managing and responding properly to disasters in your community?

13. Do you believe that local government understands, supports, and possesses adequate resources for hazard risk reduction efforts in the community?

14. Is your institution covered by a Continuity of Operations (COOP) Plan? COOP plans examine an institution’s ability to perform minimum essential functions during any situation, and support the continuance of institution functions.

15. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service to hazard events?

16. Do you have any other comments, questions, or concerns?

Business and Industry

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects businesses and commercial interests within Florence County. Provide as much detail as possible to support your choice in the Comments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your Business:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Unincorporated County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your business been impacted by disaster events (damaged, closed for extended periods, etc.)?

6. Do you believe that your facilities are disaster-resistant, or capable of withstanding a disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?

8. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to disaster events, and thus provides long term support for your business and commercial needs?

9. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your business and commercial needs?

10. Do you believe that hazard risks (e.g. flood zones, wildfire risk zones) are considered when developing or expanding commercial or industrial areas?

11. Do you believe that business organizations/associations, chambers of commerce, etc., are a valuable resource in helping business owners protect themselves pre-disaster, and/or recover post-disaster?

12. Do you believe that emergency planning, services, and equipment are adequate to manage and respond properly to disasters that may impact your business or commercial interests?

13. Do you believe that local government understands, supports, and possesses adequate resources for hazard risk reduction efforts in the community?

14. Is your business covered by a Continuity of Operations / Continuity of Government (COOP / COG) plan? COOP / COG plans examine a business's ability to perform minimum essential functions during any situation. COOP activities support the continuance of business functions, while COG activities support the continuance of business governance.

15. Do you test or drill your COOP?

16. If you have a COOP, how often is the plan updated, reviewed and/or revised?

○ Monthly ○ Quarterly ○ Bi-annual ○ Annually ○ Never

17. Based upon past experiences with disasters, what do you believe is needed to assist you in continuing your business/organization operations during disasters? Please be as specific as possible.

18. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

19. Do you have any other comments, questions, or concerns?

Emergency Services

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects businesses and commercial interests within Florence County. Provide as much detail as possible to support your choice in the comments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your Agency:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your facility(ies) been impacted by disaster events (damaged, closed for extended periods, etc.)?

6. Do you think that critical and essential facilities (incl. EMS facilities, fire, law enforcement, hospitals and medical centers) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

7. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to hazards?

8. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support EMS functions during and after hazard events?

9. Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to disasters, so as not to increase the need for EMS during hazard events?

10. Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support emergency functions during hazard events?

11. Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services,)?

12. Do you think that your agency works to inform your constituents of how they can better manage their risk to hazards?

13. Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to disasters in your community?

14. Do you think that local government understands, supports, and possess the resources for hazard risk reduction efforts in the community?

15. Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.

16. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

17. Do you have any other comments, questions, or concerns?

Social Services

Hazard Mitigation: Any action taken to reduce the loss of life and property by lessening the impact of disasters (natural, technological and man-made).

Florence County is in the process of updating their Hazard Mitigation Plan (HMP). This plan is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects. The plan must provide an outline so we can make coordinated, cost-effective decision towards reducing losses from future disasters. More information about this planning process may be found at the Florence County HMP website by going to www.fcemd.org

The following survey is designed to help identify general needs for mitigation within the County from your perspective, as well as to identify specific projects that may be included in the mitigation plan. Please review and answer the following questions regarding potential mitigation that affects social service interests within Florence County. Provide as much detail as possible to support your choice in the cvomments box. Where possible, identify specific areas (locations, facilities, programs, policies, etc.) that need to be improved, and your suggestions for possible improvements. If there are other important issues that you feel are not covered by these survey questions, please let us know.

1. Name of your facility:

2. Name of Respondent:

3. Contact information (email address or phone number) - optional:

4. Please identify the location of your facility(ies) and or primary service area:

- ○ Entire County
- ○ City of Lake City
- ○ City of Florence
- ○ Town of Scranton
- ○ Town of Coward
- ○ Town of Olanta
- ○ Town of Johnsonville
- ○ Town of Pamplico
- ○ Town of Quinby
- ○ Town of Timmonsville

5. Has your facilities been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

6. Do you think that your facilities are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?

7. Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to hazards?

8. Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support fire functions during and after hazard events?

9. Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to disasters, so as not to increase the need for health care during hazard events?

10. Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support fire department functions during hazard events?

11. Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, audible alerts, cell and text services,)?

12. Do you think that your department works to inform your constituents of how they can better manage their risk to hazards?

13. Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to disasters in your community?

14. Do you think that local government understands, supports, and possess the resources for hazard risk reduction efforts in the community?

15. Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.

16. Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

17. Do you have any other comments, questions, or concerns?

U. S. Department of Homeland Security
Region IV
3003 Chamblee Tucker Road
Atlanta, GA 30341

FEMA

November 4, 2019

Ms. Elizabeth Melton
State Hazard Mitigation Officer
South Carolina Emergency Management Division
2779 Fish Hatchery Road
West Columbia, South Carolina 29172

Reference: Multi-jurisdictional Hazard Mitigation Plan: Florence County

Dear Ms. Melton:

This is to confirm that FEMA has completed a review of the Florence County Multi-jurisdictional Hazard Mitigation Plan for compliance with the Federal hazard mitigation planning requirements as contained in 44 CFR 201.6(d)(3). The Florence County Multi-jurisdictional Hazard Mitigation Plan is in Needs Revision status.

The mitigation planning regulations state the following:
"A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within five (5) years in order to continue to be eligible for mitigation project grant funding" which includes the following FEMA programs:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)

The *Local Mitigation Plan Review Guide* (October 1, 2011) describes elements of the five-year plan updates as required in the regulations. The mitigation planning regulations require that local jurisdictions submit mitigation plans to the State Hazard Mitigation Officer (SHMO) for initial review and coordination, with the State then forwarding the plans to FEMA for formal review and approval. A plan update is NOT an annex to the previously approved plan; it stands on its own as a complete and current plan.

To reduce paper volume, the plan review is being provided to your staff via email. In order for the plan to be brought into compliance with the Federal Requirements, the Florence County Multi-jurisdictional Hazard Mitigation Plan must address the deficiencies as indicated within the review. As a reminder, when the plan is resubmitted, the transmittal letter should indicate what corrections were made and identify where these corrections are located in the plan document. In addition, please provide an updated Plan Review Tool.

If you or the participants in the Florence County Multi-jurisdictional Hazard Mitigation Plan have any questions or need any additional information, please do not hesitate to contact Kenya Grant, of the Hazard Mitigation Assistance Branch, at (770) 220-8893 or Marlene Dawkins, of my staff, at (770) 220-8715.

Sincerely,

Kristen M. Martinenza

Kristen M. Martinenza, P.E., CFM
Branch Chief
Risk Analysis
FEMA Region IV

U. S. Department of Homeland Security
Region IV
3003 Chamblee Tucker Road
Atlanta, GA 30341

FEMA

January 31, 2020

Ms. Elizabeth Melton
State Hazard Mitigation Officer
South Carolina Emergency Management Division
2779 Fish Hatchery Road
West Columbia, South Carolina 29172

Reference: Multi-jurisdictional Hazard Mitigation Plan: Florence County

Dear Ms. Melton:

This is to confirm that we have completed a Federal review of the draft Florence County Multi-jurisdictional Hazard Mitigation Plan for compliance with the Federal hazard mitigation planning requirements contained in 44 CFR 201.6(b)-(d). We have determined that the Florence County Multi-jurisdictional Hazard Mitigation Plan is now compliant with Federal requirements, subject to formal community adoption.

In order for our office to issue formal approval of the plan, the Florence County must submit adoption documentation. Upon submittal of a copy of documentation of the adoption resolution(s) to our office, we will issue formal approval of the Florence County Multi-jurisdictional Hazard Mitigation Plan. Please have Florence County submit a final copy of their Plan, without draft notations and track changes.

For further information, please do not hesitate to contact Kenya Grant, of the Hazard Mitigation Assistance Branch, at (770) 220-8893 or Marlene Dawkins, of my staff, at (770) 220-8715.

Sincerely,

Kristen M. Martinenza, P.E., CFM
Branch Chief
Risk Analysis
FEMA Region IV