BERKELEY COUNTY HAZARD MITIGATION PLAN

BERKELEY-CHARLESTON-DORCHESTER COUNCIL OF GOVERNMENTS

1362 McMillan Avenue - Suite 100
North Charleston, SC 29405
www.bcdcog.com

This plan was prepared by the BCD Council of Governments and Berkeley County Emergency Preparedness Department and associated jurisdictions in accordance to the Disaster Mitigation Act of 2000 (P.L.106-390).

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

FEMA

November 17, 2015

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

Reference: Berkeley County Hazard Mitigation Plan Update

Dear Ms. Norris:

We are pleased to inform you that the Berkeley County Hazard Mitigation Plan Update is in compliance with the Federal hazard mitigation planning requirements resulting from the Disaster Mitigation Act of 2000, as contained in 44 CFR 201.6. The plan is approved for a period of five (5) years, to November 16, 2020.

This plan approval extends to the following participating jurisdiction that provided a copy of its resolution adopting the plan:

- City of Hanahan

The approved participating jurisdiction is hereby an eligible applicant through the State for the following mitigation grant programs administered by the Federal Emergency Management Agency (FEMA):

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)

National Flood Insurance Program (NFIP) participation is required for some programs.

We commend the participants of Berkeley County Plan for the development of a solid, workable plan that will guide hazard mitigation activities over the coming years. Please note that all requests for funding will be evaluated individually according to the specific eligibility and other requirements of the particular program under which the application is submitted. For example, a specific mitigation activity or project identified in the plan may not meet the eligibility requirements for FEMA funding, and even eligible mitigation activities are not automatically approved for FEMA funding under any of the aforementioned programs.

We strongly encourage each community to perform an annual review and assessment of the effectiveness of their hazard mitigation plan; however, a formal plan update is required at least every five (5) years.

We also encourage each community to conduct a plan update process within one (1) year of being included in a Presidential Disaster Declaration or of the adoption of major modifications to their local Comprehensive Land Use Plan or other plans that affect hazard mitigation or land use and development.

When the plan is amended or revised, it must be resubmitted through the State as a "plan update" and is subject to a formal review and approval process by our office. If the plan is not updated prior to the required five (5) year update, please ensure that the draft update is submitted at least six (6) months prior to expiration of this plan.

The State and the participants in the Berkeley County Plan should be commended for their close coordination and communications with our office in the review and subsequent approval of the plan.

If you or Berkeley County have any questions or need any additional information, please do not hesitate to contact Ashanti Smith of the Hazard Mitigation Assistance Branch at (770) 220-5236, or Linda L. Byers of my staff at (770) 220-5498.

Sincerely,

Robert E. Lowe, Chief
Risk Analysis Branch
Mitigation Division

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EXECUTIVE SUMMARY

Berkeley County is threatened by various natural hazards. These hazards endanger the health and safety of the population of the County, jeopardize the economic vitality, and imperil the quality of the environment. Because of the importance of mitigating the loss of life and property, Berkeley County contracted with the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) to facilitate a comprehensive planning process for the update of the 2015 Berkeley County Hazard Mitigation Plan (BCHMP). This "Berkeley County Hazard Mitigation Plan, 2015 Update" documents the process for local governments as well as South Carolina's Emergency Management Department, which will incorporate the County plan into its statewide hazard mitigation plan.

The Berkeley County and BCDCOG staff conducted a detailed analysis to identify the hazards threatening Berkeley County to estimate the relative risks posed by those hazards. Staff collected data sets of hazard events from the Hazards and Vulnerability Institute at the University of South Carolina, the SC Forestry Commission and the College of Charleston. Staff used these data sets to assess the vulnerabilities of infrastructure, critical facilities, and socially vulnerable communities to impacts of future hazard events.

The BCDCOG and Berkeley County Emergency Preparedness Department convened a committee and met individually with stakeholders that included local government planners, emergency managers, administrators, utilities and others to assist in steering the planning process. This planning group and community representatives worked with BCDCOG and Berkeley County staff as part of a committee or individually to identify projects and programs that will avoid or reduce these vulnerabilities and make Berkeley County more resistant to the impacts of future hazard events.

The projects and programs designed to reduce the impacts of future hazard events are entered as "mitigation action plans" in this document. Mitigation action plans have been developed by each jurisdiction for implementation whenever the resources to do so become available. These mitigation action plans intend to make the communities of Berkeley County more "disaster resistant."

This document details the work of the Berkeley County and BCDCOG staff and the Hazard Mitigation Planning Committee to develop the planning organization, undertake the required technical analyses, and coordinate the mitigation initiatives proposed by the participating jurisdictions. The 2015 document is an update to the 2010 Berkeley-Dorchester Hazard Mitigation Plan approved by the Federal Emergency Management Agency and adopted by the local governments in 2010. When implemented, it is anticipated that the 2015 Berkeley County Hazard Mitigation Plan will make the people, neighborhoods, businesses and institutions of Berkeley County safer from the impacts of future hazard events.

INTRODUCTION

A natural hazard may strike at any time and has the potential to cause enormous loss of life and property. Although a community cannot predict when and where a hazard will occur, it can plan ways to reduce both structural and nonstructural damage during a hazard event. "Local hazard mitigation planning" can save a community from loss of life, property, natural resources, and money.

I. HAZARD MITIGATION PLAN BACKGROUND

Berkeley County, located in the South Carolina Lowcountry, is 1,098.86 square miles. It is the fastest growing county in South Carolina and is one of the 50 fastest growing counties in the country by population. The County is susceptible to a number of hazard events and has features that make it more susceptible to certain types of hazards. The Francis Marion National Forest and the dams of three reservoirs – Lake Marion, Lake Moultrie, and the Goose Creek Reservoir – introduce potential hazards of wildfires and flooding due to dam failure. Berkeley County may also feel the effects of hazard that directly or indirectly impact its geography, such as earthquakes and hurricanes. Berkeley County and its characteristics will be further discussed in the Community Vulnerability Assessment.

The Federal Emergency Management Agency (FEMA) defines local mitigation planning as follows:

> "The representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards." (FEMA Interim Rule)

The Disaster Mitigation Act of 2000 amended the Stafford Act and requires that local jurisdictions and states must have an FEMA approved hazard mitigation plan to receive funding from the Hazard Mitigation Grant Program, which is implemented under Section 404 of the Stafford Act. This amendment shifts emergency management programs away from the response and recovery role and encourages "the identification of hazard before they occur, preventing future losses, and minimizing the impacts of disasters." FEMA concludes that hazard mitigation planning is "a process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and human-caused hazards" (FEMA How-To Guide – Getting Started). The Act further requires local governments to update their hazard mitigation plans every five years. The federal deadline for local governments operating under the previous hazard mitigation plans was March 27, 2010.

The BCDCOG coordinated the Berkeley-Dorchester Counties' Hazard Mitigation Plan (BDCHMP) in 2005 and then again in 2010 on behalf of Berkeley and Dorchester Counties and their member local governments to achieve the requirements of the Disaster Mitigation Act. The planning process for this 2015 document update includes a comprehensive evaluation of the vulnerabilities of Berkeley County natural hazards only in order to identify ways to make this county and communities therein more resistant to the impacts of natural hazards.

II. RELATED PLANNING EFFORTS IN THE REGION

HOMELAND SECURITY CLIMATE CHANGE ADAPTATION EXERCISE

In the summer of 2014, the Berkeley County Emergency Preparedness staff participated in a Homeland Security Climate Change Adaptation Exercise conducted in Charleston, South Carolina; the purpose of the exercise and subsequent After-Action Report is to help emergency managers plan every day for natural hazard risks today as they face new challenges in the future due to climate change.

OUR REGION, OUR PLAN

The "Our Region, Our Plan," is a regional land use planning initiative of the BCDCOG completed in 2013. This Vision Plan defined the future of the Berkeley-Charleston-Dorchester (BCD) region to serve as a guide for the next 30 years and set the stage for individual actions that leading to long-term success in growth management. The regional land-use plan employs a scenario-based approach, wherein several disparate growth scenarios are evaluated; and the strategies were developed so that the region will grow more resilient to natural hazards. The evaluation and implementation strategies are based on social and other area vulnerabilities. Performance measures include evaluating cost effectiveness, public service efficiency, and environmental sensitivity, among others.

CREATING RESILIENT COMMUNITIES AND COMMUNITY AND REGIONAL RESILIENCE INITIATIVE (CARRI)

Through the BCDCOG, the local governments in Berkeley County were involved in two efforts in the last ten years that studied the resiliency of the Charleston metropolitan area that includes Berkeley County. The Creating Resilient Communities and Community and Regional Resilience Initiative (CARRI) was funded through the United States Department of Homeland Security; the project a common framework including processes and tools that communities and regions can use to assess their resilience, determine a resilience vision and take concrete actions that will have positive economic and social results.

III. PURPOSE OF HAZARD MITIGATION PLANNING

According to FEMA, the benefits of hazard mitigation planning are as follows:

- *Leads to cost-effective selection of risk reduction actions*
- *Builds partnerships*
- *Contributes to sustainable communities*
- *Establishes funding priorities*

THE PURPOSE OF THE BCHMP IS AS FOLLOWS:

Provide a Methodical, Substantive Approach to Mitigation Planning

The approach utilized for the BCHMP relies on the application of sound planning concepts in a methodical process to identify vulnerabilities to future disasters and to propose the mitigation initiatives necessary to avoid or minimize those vulnerabilities. Each step in the planning process builds upon the previous step, so that there is a high level of assurance that the mitigation initiatives proposed by the participants have a valid basis for their justification and priority for implementation. One key purpose of this plan is to document that process and to present its results to the community.

Enhance Public Awareness and Understanding

Berkeley County is interested in finding ways to make the community more aware of the natural, technological and societal hazards that threaten the public health and safety, the economic vitality of businesses, and the operational capability of the government. The plan identifies the hazards threatening Berkeley County and provides an assessment of the relative level of risk they pose. The plan also includes a number of proposals to avoid or minimize those vulnerabilities. This information will be helpful to individuals that wish to understand how the community could become safer from the impacts of future disasters.

Create a Decision Making Tool for Management

The 2015 Berkeley Hazard Mitigation Plan provides information needed by the managers and leaders of local government, business and industry, community associations and other key institutions and organizations to take actions to address vulnerabilities to future hazards. It also provides proposals for specific projects and programs that are needed to eliminate or minimize those vulnerabilities.

These proposals, called "action plans" were created by each participating jurisdiction and include strategies ranked as high, medium, or low priority. This ranking will show which action plans are the highest priority for completion and, therefore, which activities should be given a priority for funding. This ranking can be reviewed and modified after hazard events and during the update of the BCHMP. These action plans are for community leaders to use as roadmaps for the allocation of resources.

Promote Compliance with State and Federal Program Requirements

A number of state and federal grant programs, policies, and regulations encourage or mandate local governments to develop and maintain comprehensive hazard mitigation plans. This planning process specifically intends to assist each participating local government in complying with these requirements and to enable them to more fully and quickly respond to state and federal funding opportunities for mitigation-related projects. Because the plan defines, justifies, and prioritizes mitigation initiatives that have been formulated through a technically valid hazard analysis and vulnerability assessment process, the participating organizations are better prepared to more quickly and easily develop the necessary grant application content for seeking state and federal funding.

Enhance Local Policies for Hazard Mitigation Capability

A component of the hazard mitigation planning process conducted by the BCDCOG and Berkeley County staff is the analysis of the existing policy, program, and regulatory basis for management of growth and development. This process involves cataloging the current mitigation related policies of local governments so that they can be compared to hazards that threaten the jurisdiction and the relative risks they pose to the community. When the risks posed to the community by a specific hazard are not adequately addressed in the community's policy or regulatory framework, the impacts of hazard events can be more severe.

Assure Inter-Jurisdictional Coordination of Mitigation-Related Programming

A key purpose of the planning process is to ensure that proposals for mitigation initiatives are reviewed and coordinated among the participating jurisdictions within the county. In this way, there is a high level of confidence that mitigation initiatives proposed by one jurisdiction or participating organization, when implemented, will be compatible with the interests of adjacent jurisdictions and even mutually beneficial.

The following sections of the multi-jurisdictional hazard mitigation plan present the detailed information to support these purposes. The remainder of the plan describes the planning process developed by Berkeley County and BCDCOG staff. It then summarizes the results of the hazard identification and vulnerability assessment process and addresses the current policy basis for hazard management by the participating jurisdictions and organizations. The plan also documents the structural and non-structural mitigation initiatives proposed by the participating jurisdiction to address the identified vulnerabilities.

IV. HAZARD MITIGATION PLAN SCOPE

The BCHMP has been created and will be maintained to address the hazards determined to affect Berkeley County. Other hazards may be considered and defined but will not be fully assessed in this plan. The geographic scope of the BCHMP includes all participating jurisdictions within Berkeley County as follows:

• Town of Bonneau	• Town of Jamestown
• City of Goose Creek	• Town of Moncks Corner
• City of Hanahan	• Town of St. Stephen

Small areas of the Cities of Charleston, North Charleston and the Town of Summerville are located in Berkeley County; because the majority of these municipal boundaries are in Charleston and Dorchester County, these communities fall under the respective hazard mitigation plans of the county within which the majority of the municipality is located and so were not included in this document.

The BCHMP was developed in accordance with the current regulations governing local hazard mitigation. The BCHMP is monitored and updated to ensure compliance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by the Disaster Mitigation Act of 2000 (Public Law 106-390, October 30, 2000).

V. PARTICIPANTS IN THE PLANNING PROCESS

This section describes the local jurisdictions and organizations participating in the Berkeley Hazard Mitigation Plan and discusses the organizational structure used to guide the planning process.

The Berkeley County Council consists of nine elected officials including the county supervisor who is also elected. The council is the group that makes the official decisions regarding the planning process. The Berkeley County Council will approve the final BCHMP after the review by SC EMD and FEMA.

A Planning Committee, to which BCDCOG staff provided technical support and professional assistance, led the hazard mitigation planning process for 2015. The Planning Committee members were appointed by local governments, agencies and other organizations to guide the planning process for the BCHMP participants. As public-sector planners and administrators and private-sector stakeholders, Planning Committee members are a representative cross-section of Berkeley County with regard to hazard mitigation.

The Planning Committee coordinated the actual technical analyses and planning activities that were fundamental to development of this plan. These activities included conducting the hazard identification and vulnerability assessment processes, as well as receiving and coordinating the mitigation initiatives from the participating jurisdictions for incorporation into this plan. This group was also responsible for updating the mitigation goals and objectives for the 2010 update of the BCHMP. The members of the Committee include the following (see table on next page):

NAME	POSITION	ORGANIZATION
Eric Greenway	Planning & Zoning Administrator	Berkeley County Government
Tom Smith	Emergency Preparedness Director	Berkeley County Government
Lori Kidwell	Emergency Management & Homeland Security Specialist	Berkeley County Government
Craig Nessel	GIS Analyst II	Berkeley County Government
Eric Greenway	Planning Director	Berkeley County Government
Edward Rogers	Customer Service Director	Berkeley County Water & Sanitation Authority
Jerry Barham	Fire Department	City of Hanahan
J. Watson	Engineering Supervisor	Berkeley County Water & Sanitation Authority
Eddie Plowden	Marketing Manager	Berkeley County Electric Coop
Todd Musselman	Disaster Specialist	American Red Cross
Eric Shuler	Operations Manager	BCD-RTMA (dba TriCounty Link)
William Gaither	Engineer	Santee Cooper
Ken Childers	Administrator	Berkeley County School District
Mike Cochran	Police Chief	City of Hanahan
Tricia Lisinski	211 Coordinator	Trident United Way
Johnny Broome	Public Works Director	Town of St. Stephen
David Miller	Fire Chief	Town of Moncks Corner

There are no new jurisdictions participating in the planning process. All six local jurisdictions continue to participate.

The planning team reviewed and analyzed each section of the plan, incorporating elements of prior planning efforts while adding or revising elements that had changed over time or had grown in terms of public awareness or priority.

Due to staffing and other constraints, every jurisdiction could not provide participation on the committee but each jurisdiction participated in the review of the plan as represented by the staff or elected official noted below.

Dennis Harmon	City Administrator	City of Goose Creek
Rembert Wrenn	Mayor	Town of Bonneau
Roy P. Pipkin	Mayor	Town of Jamestown
Johny Broom	Public Works Director	Town of St. Stephen

VI. PUBLIC PARTICIPATION

The BCDCOG and Berkeley County staff conducted three phases of outreach for the 2015 BCHMP:

1. An inclusive planning committee,
2. Project web page, and
3. Public presentations

Identifying and assembling stakeholders was an early step in the hazard mitigation planning process. Staff first contacted those persons and organizations that participated in the 2010 BCHMP and then identified additional stakeholders to participate based upon their involvement with prior, similar initiatives. Contact was made with local government staff, including planners, emergency managers, and emergency responders from Berkeley County and all six municipalities located within the County.

The general public was made aware of the hazard mitigation planning process and how they may participate through community calendar and public announcements. All meetings and agendas were announced in advance and open to the general public. All meetings of the BCHMP Planning Committee were conducted in Berkeley County and are open to the public. Meeting times and dates were made available online, posted at the town halls or posted to a special BCDCOG web page dedicated to the 2015 BCHMP Update.

Three planning and public meetings were held throughout the hazard mitigation planning process, as detailed in the project timeline in Section I.I and the table below. Berkeley County Hazard Mitigation Planning Committee members who were unable to attend working sessions were contacted by staff, individually interviewed, given and made aware of additional online resources.

MEETING DATE	PLACE	MEETING PURPOSE	ATTENDING
December 2013	BCDCOG and Berkley County	Initial scoping meetings with Berkeley County Staff	BCDCOG and County Staff
February 28, 2014	Berkeley County Council Chamber	Planning Team Session #1	BCHMP Committee
May 6, 2014	Berkeley County Council Chamber	Planning Team Session #2	BCHMP Committee
June 16, 2014	BCDCOG	Plan Presentation and Public Input	BCDCOG Board and General Public
September 22, 2014	Berkeley County Council Meeting	Plan Presentation and Public Input	County Council and General Public
September 30, 2014	Berkeley County EOC	Planning Team Session #3	BCHMP Committee
October 7, 2014	Daniel Island	Plan Presentation- Public Input	General Public
October 26, 2014	Berkeley County Council Meeting	Plan update to County Council and Public Input	County Council and General Public

MEETING DATE	PLACE	MEETING PURPOSE	ATTENDING
March 23, 2015	Berkeley County Council Meeting	Plan update to County Council	County Council and General Public
June 20, 2016	*Berkeley County Council and individual jurisdiction adoptions*	*Final Plan adoption by County Council and jurisdictions*	*County Council and individual jurisdictions*

Planning Committee meeting updates and presentations appear on the website hosted by the Berkeley-Charleston-Dorchester Council of Governments, www.bcdcog.com. The website includes contact links for key BCDCOG staff members working on the project.

The BCDCOG staff provided multiple opportunities for public input at committee meetings, town council meetings, county council meetings, community meetings and online. Drafts of the plan were made available online and at the county offices before Berkeley County Council's final approval of the plan. Staff made a presentation summarizing the plan and opened the floor the public for questions. The final draft of the BCHMP 2015 Update will be available for public inspection at the Berkeley County Administration Center in Moncks Corner at the meeting and will be available for public inspection. Notice of these meetings via media outlets throughout the BCD Region, are listed in Appendix I: Public Notifications.

The public was given the opportunity to provide public input on the final draft plan prior to the final plan adoption; copies of the final plan were available online and at the respective county/city/town office prior to jurisdiction's public hearing and council approval in accordance to the jurisdiction's public notice requirements.

VII. PLANNING PROCESS

Berkeley County and all the municipalities participated in a hazard mitigation planning process that incorporated the following steps:

1. Hazard Identification and Analysis
2. Community Hazard Vulnerability Assessment
3. Mitigation Capabilities Assessment
4. Community Goals
5. Mitigation Action Plans

STEP 1

The Hazard Identification and Analysis identifies the natural hazards events that occur in Berkeley County. It includes historical data on past hazard events and establishes hazard profiles for each hazard event. Representatives for the jurisdictions reviewed the data for their respective jurisdictions and revised the list of hazard events and ranking of priorities accordingly.

STEP 2

After identifying natural hazards, participating communities assessed the vulnerability of their jurisdiction using a new methodology. The methodology for the Community Hazard Vulnerability Assessment for the BCHMP was created by the University of South Carolina Hazards Research Lab. This assessment process

provides the community an objective way to look at hazard preparedness, as well as establish a basis for hazard mitigation. It also provides the existing conditions of hazards and the population and property at-risk in the community.

The hazard vulnerability assessment addresses the biophysical vulnerability and the social vulnerability for Berkeley County. The assessment utilizes geographical, economic, demographic data and development trends to determine the characteristics of the community and how those characteristics may affect the community's hazard vulnerability. The assessment also generates clear, geographic depictions of the hazard vulnerability in Berkeley County, which are published in this 2015 BCHMP Update.

STEP 3

The Mitigation Capabilities Assessment examines the existing capability of Berkeley County to address hazard vulnerability and hazard mitigation. The communities evaluated their current regulations and adopted plans for their jurisdictions in terms of suitable mitigation activities and other pertinent considerations. This assessment process identified any local mitigation activities and policies that may be further developed to make their communities more hazard-resistant. These included suitable amendment and adoption of local building codes, zoning ordinances, flood plain regulations, comprehensive plans, and capital improvement programs; among other local planning, programming and budgeting tools available to public officials (see Step 5).

The above three assessments form the base of knowledge required to design the hazard mitigation strategies of Berkeley County. These assessments are included as appendices to the BCHMP.

STEP 4

The Community Goals have been reviewed and updated by the Planning Committee and individual communities for the BCHMP. The goals were reviewed and re-prioritized during this process.

STEP 5

The Mitigation Action Plans were created by each participating jurisdiction. These action plans represent a full spectrum of activities that a jurisdiction could undertake to mitigate loss during a disaster, if funding for the activity becomes available. The activities included in each jurisdiction's action plans achieve one or more of the goals or objectives of the BCHMP. The inclusion of an action plan is one of the requirements for a jurisdiction for satisfactory participation in the BCHMP.

The planning process included a review of all existing planning documents for the associated jurisdictions, summarized in the matrix represented on the next page:

JURISDICTION	COMPREHENSIVE PLAN	CAPITAL IMPROVEMENTS PROGRAM	REGIONAL DEVELOPMENT PLAN	TRANSPORTATION IMPROVEMENTS	WATER AND SEWER CONSTRUCTION	BUILDING CODE ENFORCEMENT	ZONING ORDINANCE	FLOODPLAIN ORDINANCE	SUBDIVISION REGULATIONS
Berkeley County	●	●	●	●	●	●	●	●	●
Town of Bonneau	●		●	●		●	●		●
City of Goose Creek	●	●	●	●	●	●	●	●	●
City of Hanahan	●		●	●	●	●	●	●	●
Town of Jamestown			●	●		●	●	●	●
Town of Moncks Corner	●	●	●	●	●	●	●	●	●
Town of St. Stephen	●		●	●		●	●	●	●

The goals and priorities of existing plans and policies provided guidance for the goals and actions associated with this plan. Documents that provided pertinent information and guidance include emergency operations plans, comprehensive plans, redevelopment plans (including tax-increment financing districts), capital improvement programs, zoning ordinances, land development regulations, and storm water management ordinances.

VIII. PROJECT TIMELINE

The work flow and milestones that demarcate the planning process for the 2010 BCHMP 2015 are described herein.

Project Timeline and Scope of Work for Berkeley County Hazard Mitigation Plan Update 2015:

SCOPE AND TIMELINE OF WORK JANUARY 2014 - FEBRUARY 2015	
Description of Task	**Timeline**
Hazard Mitigation Planning Committee Meetings	January-September 2014
Public Involvement	March-October 2014
Natural Hazards Assessment Update	January- December 2014
BCHMP Goal Setting with Committee/Staff	January-September 2014
BCHMP Mitigation Strategies and Activities Update with Communities and Committee	March-October 2014
Draft of BCHMP Update to Committee	September 2014
Final BCHMP Update Approved by Committee	September 2014
Berkeley County/City/Town Adoption of Plan	Summer 2015
Project Closeout	Fall 2015

Organize Resources: January–September 2014

BCDCOG staff convened a planning committee, as described in previous sections, and assembled data sets and resources necessary to update the 2015 BCHMP.

- BCDCOG identified stakeholders and called the first meeting of the Berkeley County Hazard Mitigation Planning Committee on February 6, 2014. A list of participants in the Planning Committee appears in the Appendix.
  - Public notice was made in accordance with BCDCOG procedures for notification.
  - The first Hazard Mitigation Plan meeting in February entailed a brief review of the 2010 Plan and a discussion of the 2014 Update process.
- The BCDCOG established a web page dedicated to the 2015 BCHMP Update on its website, www.bcdcog.com. The 2010 Plan was posted on this page, as were other resources related to the 2015 BCHMP Update.

Assess Risks and Develop a Mitigation Plan: May–October 2014

- BCDCOG staff provided updates of the of 2015 BCHMP Update at the Berkeley County Council meeting. No public comments were received.
- BCDCOG staff presented an overview of the 2015 BCHMP Update at the BCDCOG Board of Directors meeting in June 2014.
  - Staff explained the purpose of the plan and the type of input sought from stakeholders.
  - No comments were made by the Board or the public in attendance.

- BCDCOG convened the Planning Committee's second meeting in May
  * Staff advised the group regarding its progress toward updating the risks assessment.
  * The Planning Committee revisited goals and objectives of the 2010 Plan for inclusion in the 2015 Plan Update.
- BCDCOG provided Berkeley County Council with the project update on September 22, 2014. There were not any questions from council or the public.
- The BCHMP Planning Committee gathered again in Berkeley County for a third time on September 30, 2014.
  * The group reviewed BCDCOG staff's completed risk assessment and received maps reporting the spatial analysis.
  * Staff guided the committee through the process and requirements for developing a local mitigation action plan, as required for plan participation. The presentation included a variety of innovative strategies underway throughout South Carolina that hazard mitigation grants could fund.
  * Committee completed the review and was asked to send in any comments within 30 days. No additional comments were received.
- BCDCOG and Berkeley County Emergency Management staff conducted a presentation on the BCHMP process on October 7, 2014 on Daniel Island; the presentation detailed the project planning process including how residents of Berkeley County could become engaged in providing public input. The public asked a number of questions related to evacuation.
- BCDCOG provided Berkeley County Council with the project update on, October 26, 2014, and March 23, 2015. There were not any questions from council or the public

COMMUNITY GOALS AND OBJECTIVES

This section of the BCHMP includes the review and update of the goals and objectives from 2010 Plan as established by the Berkeley Hazard Mitigation Planning Committee and individual community representatives. Each goal is a general statement of intent that may only be achieved in part or fully by the implementation of the related objectives and the mitigation action plans of each participating jurisdiction.

GOAL 1: The community will strive to minimize the threat from a hazard event in order to protect the health, safety and welfare of the community's residents and visitors.

Objective 1.1: Adequate warning systems will be put in place to notify the public at risk and provide emergency instruction during a hazard event.

Objective 1.2: Local governments will effectively administrate building codes as mandated by the State of South Carolina.

Objective 1.3: Local governments will implement land use regulations to minimize vulnerability of temporary recreational structures and vehicles.

GOAL 2: The community will strive to have the capability to initiate and sustain emergency response operations during and after a hazard event.

Objective 2.1: Utility and communications systems supporting emergency services will be retrofitted or relocated to withstand a hazard event and include ITS infrastructure.

Objective 2.2: *Each jurisdiction will continue its participation in the county command and control center.*

Objective 2.3: *Structures that provide storage and shelter for government equipment and vehicles will be retrofitted or relocated to withstand a hazard event.*

Objective 2.4: *Post-disaster communication plans will be updated to ensure communication of emergency workers after a hazard event.*

Objective 2.5: *Primary roads and access roads to emergency facilities will be retrofitted to ensure access after a hazard event.*

GOAL 3: *The availability and functioning of the community's infrastructure will not be significantly disrupted by a hazard event.*

Objective 3.1: *Retrofit or relocate public water and sewer lines and facilities to ensure their reliability during and after a hazard event.*

Objective 3.2: *Encourage routine maintenance of public facilities to ensure reliability during and after a hazard event.*

Objective 3.3: *Local governments will collaborate on hazard mitigation programs with private-sector organizations that own or operate key community facilities.*

Objective 3.4: *Local governments will further develop mutual aid agreements so they know where help is coming from and how reimbursement will work, including participation in the South Carolina Water/Wastewater Agency Response Network (SC WARN).*

GOAL 4: *The County will strive to educate the members of the community to understand the hazards threatening local areas and the techniques to minimize vulnerability to those hazards.*

Objective 4.1: *Private sector decision makers shall be educated about hazard mitigation techniques and the components of the community's mitigation plan.*

Objective 4.2: *The public living or working in defined hazard areas will be given awareness of and understand their vulnerability and know appropriate mitigation techniques.*

Objective 4.3: *The public will have access to information needed to understand their vulnerability to a hazard event and appropriate hazard mitigation techniques through enhanced relationships with neighborhood and community centers.*

GOAL 5: *The continuity of local government administration and services will not be significantly disrupted by a hazard event.*

Objective 5.1: *Buildings and facilities used for the routine operations of government will be retrofitted or relocated to withstand the impacts of a hazard event.*

Objective 5.2: *Government texts, records and documents will be backed up, relocated, and/or protected during and after a hazard event.*

Objective 5.3: *A contingency plan will be created and/or maintained to reestablish local government services after a hazard event in case of facility damage.*

GOAL 6: *Local government will have the capability to develop, implement and maintain effective hazard loss reduction programs.*

Objective 6.1: *Data and information needed, such as watershed studies, for defining hazards, risk areas and vulnerabilities in the community will be obtained and digitized as necessary.*

Objective 6.2: *Local governments will strive to have the capability to effectively utilize the available data and information related to mitigation planning and program development.*

Objective 6.3: *There will be a program to revisit the Berkeley County Hazard Mitigation Plan within three years and completely update the Plan in five years.*

Objective 6.4: *Local governments will guide new land development in a way that does not increase risk to existing developed areas.*

GOAL 7: *The community will strive to minimize the vulnerability of homes, institutions and places of business and employment to hazard events.*

Objective 7.1: *The community will strive to reduce the vulnerability of schools, libraries, museums, critical facilities and other institutions to a hazard event.*

Objective 7.2: *The community will establish a program for the removal, relocation or retrofitting of vulnerable structures and utilities in hazard areas.*

Objective 7.3: *New hazardous sites will be located at least 2,000 feet from schools and neighborhoods with preference given to locations ten miles from these places.*

GOAL 8: *The policies and regulations of local government will support effective hazard mitigation programming throughout the community.*

Objective 8.1: *Each local jurisdiction will comply with the requirements of participation in the National Flood Insurance Program (NFIP) and the associated Community Rating System, if applicable.*

Objective 8.2: *Efforts will be made to place all new government facilities outside of hazard prone areas and/or these facilities will be designed to withstand a hazard event.*

Objective 8.3: *Government officials will strive to give hazard mitigation needs and programs appropriate emphasis in resource allocation and decision-making.*

Objective 8.4: *The community will strive to have land use policies, plans, and regulations that discourage or prohibit the location of structures and infrastructure components in hazard prone areas.*

GOAL 9: *The community will continue to ensure minimal impact of a hazard event on the economic stability of the community.*

Objective 9.1: *Governmental officials will include the needs of the business and industrial community in emergency response and disaster recovery plans.*

Objective 9.2: *The community will implement programs to address public awareness and perception of the community condition and functionality after a hazard event.*

GOAL 10: *All sectors of the community will work together to create a disaster-resistant region.*

Objective 10.1: *The local governments will create outreach programs to gain participation in mitigation programs by business, industry, institutions and community groups.*

Objective 10.2: *Government officials will encourage and assist local businesses in the creation of a business continuity and recovery plan.*

GOAL 11: *The community will strive to reduce the impact of a hazard event on the natural and cultural resources of the community in order to protect quality of life.*

Objective 11.1: *Government officials will encourage the owners or caretakers of cultural resources to develop mitigation and response plans.*

Objective 11.2: *Local governments will strive to educate private, non-profit organizations about emergency response and hazard mitigation.*

Objective 11.3: *Local planning commissions will address cultural resources with regard to their jurisdiction's vulnerability in planning.*

MITIGATION ACTION PLANS

I. CATEGORY

Each element of the mitigation action plan falls under one or more of the following mitigation technique classifications. These classifications include a wide array of activities that can be considered to achieve the goals and objectives of the BCHMP. The mitigation techniques are included in the Mitigation Action Plan Worksheet. The identified projects and actions are designed to address the hazards on new and existing buildings and infrastructure.

Each jurisdiction used an internal cost benefit review during the prioritization process to identify the actions or projects with the greatest benefits. A primary criterion for prioritization of actions was based upon the precept that all local jurisdictions must continue to comply with the requirements of participation in the NFIP. The results listed in the individual action plans are those that provide the greatest level of protection to public health, safety, and welfare, and that are economically feasible through internal funding (i.e., general fund), grant funds (i.e. FEMA), or a combination of both sources. It should be clarified that the 2010 BCHMP listed goals as "completed" but a number of those goals are now listed in the 2015 BCHMP as "ongoing". This change was a result of the efforts by the county and jurisdictions to remove those actions that no longer could or would be implemented while recognizing that many goals for action will require ongoing maintenance.

1. Preventative Activities (PA)

Preventative activities are those activities that are intended to reduce a community's vulnerability to future hazard events. The following is a list of potential preventative activities and measures:

a. *Land-use and development regulations*
b. *Building codes*
c. *Floodplain regulations*
d. *Water quality regulations*
e. *Fire prevention codes*

f. Drainage system maintenance
g. Coastal erosion regulations
h. Capital improvement programming
i. Shoreline, riparian, fault-zone setbacks

2. Property Protection (PP)

Property protection activities are intended to protect existing structures by retrofitting, relocating or modifying the structure to withstand a hazard event. The following is a list of potential property protection measures:

a. Property acquisition
b. Property relocation
c. Building elevation
d. Critical facilities protection
e. Retrofitting vulnerable properties
f. Participation in an insurance program
g. Development of safe rooms

3. Natural Resource Protection (NR)

Natural resource protection activities reduce the effects of a hazard event on the natural resources within a region by preserving and/or restoring natural areas along with their mitigation functions. The following is a list of natural resource protection activities:

a. Floodplain protection
b. Riparian buffers
c. Fire resistant landscaping
d. Wetland preservation and restoration
e. Erosion and sediment control
f. Wastewater permitting
g. Open space preservation
h. Tree protection and landscaping ordinances

4. Structural Projects (SP)

Structural mitigation activities reduce the impacts of a hazard event by modifying the physical environment to withstand the particular hazard. The following is a list of structural mitigation activities:

a. Creation of reservoirs
b. Levees, dikes, floodwalls, seawalls
c. Diversion canals, detention areas, retention areas
d. Beach nourishment
e. Storm sewers
f. Dam construction
g. Channel modification/dredging
h. Infrastructure construction, modifications, repairs

5. Emergency Services (ES)

Emergency service measures minimize the impact of a hazard by preparing these services to respond efficiently and rapidly during and after a hazard event. The following is a list of potential emergency services activities:

a. Warning systems
b. Evacuation planning and management
c. Sandbagging for flood protection
d. Hurricane shutters
e. Debris removal plan
f. Emergency shelter preparation

6. Public Information and Awareness (PI)

Public information and awareness activities advise residents, potential buyers and visitors about hazards, potentially hazardous areas and mitigation techniques. The following is a list of potential public information and awareness activities:

a. Outreach projects
b. Speaker series and demonstration events
c. Hazard and flood map information
d. Real estate disclosure
e. Library materials
f. Hazard expositions
g. Warning system drills
h. Vulnerability inspections for residents and business owners
i. Radio advertisements

7. Activity

This section includes a brief description of the project or program that the participating jurisdiction proposes to undertake.

8. Objectives Addressed

Each mitigation action plan should work to achieve one or more of the objectives in the BCHMP. The number of each objective that an action plan could work to achieve should be placed in this category.

9. Priority

"1" is the highest priority element of a local Mitigation Action Plan, "3" is the lowest priority; as determined by officials representing each jurisdiction based on hazard, safety, population vulnerability, funding and other criteria as determined by each jurisdiction. This ranking will show which action plans are the highest priority for completion and, therefore, which activities should be given a priority for funding and implementation. This ranking can be reviewed and modified after a hazard event and during an update of the BCHMP.

The priorities were ranked 1-3 by the respective jurisdiction staff and recommendations were approved by BCHMP Committee based on criteria that included safety, population, density, existing zoning regulations and previous hazard experience.

10. Possible Funding Sources

This category will list possible funding sources that could be utilized to undertake or complete each particular action plan. It is important for each participating jurisdiction to determine any possible funding source, if excess funds or grants were to become available that could be used to achieve each mitigation action plan. This determination does not represent a commitment of these funds for a mitigation activity, but just an example of how the activity could be funded.

11. Responsible Agency

A participating jurisdiction must determine which agency or person has the expertise and responsibility to undertake each of the mitigation action plans. This will make implementation of a mitigation action plan efficient and effective.

12. Timeframe

The participating jurisdictions must determine whether each project is a short-term (S), 1 to 3 years, long-term (L), 3 to 5 years; or an ongoing (O) project. Timing will be important in the determination of potential funding sources, staffing, and other community resources.

II. JURISDICTIONAL MITIGATION PLANS

As part of the BCHMP, each participating jurisdiction provides a Hazard Mitigation Action Plan Worksheet. This worksheet contains proposed mitigation projects or programs that a participating jurisdiction would like to undertake when funding becomes available. To receive Hazard Mitigation Grant Program funding, the project must be generally or specifically included in the BCHMP as one of the jurisdiction's mitigation techniques.

On the following pages is a comprehensive list of the Mitigation Action Plans for each participating jurisdiction, by County; with an update of the status for each element of the Mitigation Action Plan.

Mitigation Action Plan Abbreviations:

Type

Preventive Activities (PA), Property Protection Activities (PP), Natural and Beneficial Functions/Resource Preservation Activities (NB), Emergency Services Activities (ES), Structural Projects Activities (SP), Public Information Activities (PI), and Geographic Information Systems Activities (GIS).

Status

Action Plan elements are indicated as Completed (C) if the activity has been successfully initiated, executed, and substantially completed; Unchanged (U) if the action plan element is unaltered or otherwise remains the same as previous reporting periods; Deferred (D) if the lack of adequate funding, staff or other resources dictates that no immediate (i.e., short-term) action may be taken.

Timeframe

Proposed Action Plan elements are scheduled as Short-term (S), 1 to 3-years to initiate; Long-term (L), 3 to 5-years to initiate; or Ongoing (O) in the case of Completed (C) activities that are maintained and/or sustained over time by the local jurisdiction.

MITIGATION ACTION PLAN TABLES

FOR

BERKELEY COUNTY

ACTION PLAN FOR BERKELEY COUNTY, SC

Following are the proposed projects/programs/actions to be undertaken by Berkeley County, South Carolina in an effort to achieve the goals and objectives identified through the Hazard Mitigation Plan:

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Jurisdiction will continue to participate in the National Flood Insurance Program (NFIP)	Building & Codes	General Fund	Minimize future flood damage; reduce existing flood damage; improve water quality; educating citizens regarding steps to take to reduce vulnerabilities; improve hazard resistance of infrastructure; reduce vulnerability of our infrastructure to natural and man-made hazards	1 - High	Ongoing- Berkeley County will continue review NFIP to keep current with federal mandates	Long Term	Flood
PA	County has adopted, and commenced enforcement January 1, 2004, the International series Building-related and Fire codes and the floodplain management (including the one foot freeboard and five year cumulative substantial improvement clause provisions) regulation.	Building & Codes	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards. Update codes to reflect changes in law.	1 - High	Ongoing- BC has hired a new flood plain manager and will continue to define the role of this position.	Short Term	Flood, tornado, hurricane, high wind, hail, earthquake

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue to provide coordination of County storm water management regulations	Engineering	General Fund & Storm Water Fee	Minimize future flood damage; reduce existing flood damage; improve water quality; educating citizens regarding steps to take to reduce vulnerabilities; improve hazard resistance of infrastructure; reduce vulnerability of our infrastructure to natural and man-made hazards	1 - High	Ongoing- Staff will continue to participate in the Ashley River Stormwater Management Consortium and other opportunities to receive training	Long Term	Flood
PA	Continue enforcement of zoning regulations, Subdivision and Land Development Regulations such as requiring buffers Review buffer and building within 100 feet of flood area.	Planning	General Fund	Minimize future flood damage; preserve environmental resources; promote long-term economic prosperity; preserve open space; encourage recreational activities; minimize future hurricane damage; minimize future earthquake damage; protecting the lives of our citizens from natural and man-made hazards	1 - High	Ongoing – BC will continue to coordinate with developers and new industry to insure code enforcement	Short Term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Conduct or co-sponsor training workshops regarding the International Building-related, flood, and Fire Prevention Codes and Regulations if there is interest in these workshops	Building & Codes	General Fund/self-supporting through workshop revenues	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; improve hazard resistance of infrastructure; minimize hurricane damage	1 - High	Ongoing – BC staff will review option to offer this training annually	Short term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Continue providing information to citizens regarding none structural mitigation actions.	Emergency preparedness	General Fund/ Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage	2 - Medium	Ongoing –BC Staff provides information online and through training	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Continue enforcing regulations requiring new manufactured homes brought into Berkeley County to be constructed to wind zone 2 requirements as required per State Law	Building & Codes	HUD	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1 - High	Ongoing	Long Term	Tornado, hurricane, high wind, hail,

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue prohibiting new manufactured homes to be installed in “V” flood zones and requiring manufacture homes installed in “A” flood zones to be on permanent foundations.	Building & Codes	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protecting lives of citizens from natural and man-made hazards	1 - High	Ongoing	Long Term	Flood
PP	Promote the use of voluntary standards for single family residences to exceed minimal building code requirements for wind and seismic design	Building & Codes	General Fund	Minimize future flood damage; minimize future damage; minimize future hurricane damage by requiring building be able to withstand 120 mph wind ; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; use licensed inspectors	2 - Medium	Ongoing	Short Term	Tornado, hurricane, high wind, hail, earthquake
PP	Promote standards for existing homes to be retrofitted to that exceed minimal codes	Building & Codes	General Fund	Reduce existing flood damage; preserve environmental resources; minimize future hurricane damages; minimize future earthquake damages; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	2 - Medium	Ongoing	Short Term	Flood, tornado, hurricane, high wind, hail, earthquake

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PP	Work toward eliminating flooding in existing subdivisions by adding flood plain staff person to insure code enforcement	Engineering	General Fund	Minimize future loss.	3 - Low	Ongoing	Short Term	Flood
PP	Continue demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor. Require demolition of existing unsafe structures before new structure can be built on same lot. Requires demolition of unsafe structures on site before new structure can be built	Building & Codes	General Fund	Reduce existing flood damages; promote long-term economic prosperity; encourage recreational activities; minimize future hurricane damage; minimize future flood damage; reducing vulnerability of infrastructure to hazards; work to update state law as it relates to counties demolishing dangerous structures	3 - Low	Ongoing – BCD staff evaluate structures on an ongoing basis to insure community safety	Short term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PP	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties if suitable candidates can be identified	Building & Codes	Grant Funding and general Fund	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1 - High	Ongoing – BC Staff will continue to review grant and other opportunities to remove structures	Long Term	Flood
PP	Distribute a brochure on protecting boats from damages during hurricanes to interested citizens through expos, offices, marinas and boat dealers	Emergency Preparedness	General Fund	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities	3 - Low	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
GIS	Develop and maintain storm drainage inventory maps and database.	GIS & Engineering	General Fund & Storm Water Fee	Reduce existing flood damage, minimize future flood drainage and improve water quality.	2 - Medium	Ongoing- GIS department coordinates with state and local jurisdiction to update data	Long Term	Flood, hurricane

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
	Continue working toward an established goal of fifty percent of County preserved as green (open) space.	County Supervisor & County Council	General Fund & partner with local conservation groups	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2 - Medium	Ongoing- BCD has completed a county wide green infrastruc-ture plan and is in the process of implementing recommenda-tions	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
ES	Continue hazardous material training	Emergency Preparedness	General Fund & Grant Funding	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; improve hazard resistance of infrastructure; assessing vulnerability to man-made hazards; establishing cooperative relationships between public, private and non-profit sectors to enhance response for hazard events.	1 - High	Ongoing – training is scheduled with state and local organizations throughout the year	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
ES	Continue Terrorist Response Training	Emergency Preparedness	Grant Funding	Protecting lives of our citizens from man-made hazards; minimize future terrorist activity incidents; preserve environmental resources; improve hazard resistance of infrastructure; assessing vulnerability to man-made hazards; establishing cooperative relationship between public, private and non-profit sectors to enhance response for hazard events; promote long-term economic prosperity.	1 - High	Ongoing training is scheduled with state and local organizations throughout the year	Long Term	All hazards
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event	Emergency Preparedness	General Fund	Protecting lives of citizens from natural and man-made hazards; establishing cooperative relationships between public, private and non-profit sectors to enhance response for hazard events; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; preserve environmental resources; promote long-term economic prosperity	1 - High	Ongoing in according with state and federal regulations	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
ES	Continue responding to hazard emergencies	EMS, Fire Departments, Police Department, Haz. Mat Coordinator, Emergency Preparedness	General Fund	Protecting lives of citizens from natural and man-made hazards; establishing cooperative relationships between public, private and non-profit sectors to enhance response for hazard events; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; preserve environmental resources; preserve historic building inventory; promote long-term economic prosperity	1 - High	Ongoing	Long Term	All hazards
ES	Continue to require construction practices for new County owned critical facilities that are sensitive to flood zone (e.g. avoiding “A” and “V” flood zones where feasible) and seismic considerations.	Capital Projects	General Fund Bond Funding	Protecting lives of citizens from natural and man-made hazards; reducing vulnerability of infrastructure and built environment to hazards; minimize future flood damage; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage	1 - High	Ongoing	Long Term	Flood, tornado, hurricane, high wind, earthquake

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
ES	Evaluate existing County owned facilities for hazard resistance and retrofit facilities if needed where feasible	Public Buildings & Engineering	General Fund/ Grant Funding/ Bond Funding	Protecting lives of citizens from natural and man-made hazards; reducing vulnerability of infrastructure and built-environment to hazards; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage	1 - High	Ongoing	Sort Term	Flood, tornado, hurricane, high wind, hail, earthquake
ES	Sponsor training programs for medical providers on topics of interest such as decontamination procedures, etc. if there is interest in these programs.	Emergency Preparedness; EMS	General Fund & Grant Funding	Protecting the lives of citizens from man-made hazards; Establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and response for hazard events; Minimize future hazardous materials incidents; minimize future terrorist activity incidents	2 - Medium	Ongoing	Short Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
ES	Continue working toward the National Weather Service Storm Ready Community designation	Emergency Preparedness	General Fund	Protecting lives of citizens from natural hazards; educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future tornado-related loss of life; minimize future flood damage; reduce existing flood damage; minimize future hurricane damage; reduce existing flood damage	1 - High	Ongoing BC staff will provide an update to the county supervisor on an annual basis	Short Term	Flood, tornado, hurricane, high wind, hail
ES	Continue coordinating the Anti-Terrorism Task Force of specially trained police, fire and EMS personnel to respond to terrorist acts.	Emergency Preparedness	Grant Funding	Protecting lives of our citizens from man-made hazards; minimize future terrorist activity incidents; preserve environmental resources; improve hazard resistance of infrastructure; assessing vulnerability to man-made hazards; establishing cooperative relationships between public, private and non-profit sectors to enhance response for hazard events; promote long-term economic prosperity	1 - High	Ongoing	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
ES	Continue to promote interest in the Community Emergency Response Training (CERT) program	Emergency Preparedness	General Fund/Grant Funding	Protecting lives of citizens from natural and man-made hazards, establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding vulnerability to hazards and steps to reduce that vulnerability to hazards and steps to reduce that vulnerability; minimize future terrorist activity incidents	1 - High	Ongoing Staff provides a minimum of one trainings a year	Long Term	All hazards
PA	Continue the drainage system maintenance and canal cleaning program	Engineering	General Fund	Protect the lives of our citizens from natural hazards; reduce existing flood damage; minimize future flood damage; improve water quality; improve hazard resistance of infrastructure; promote long-term economic prosperity	1 - High	Ongoing	Long Term	Flood, hurricane

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue right of way and drainage easement permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Engineering	General Fund	Protect the lives of our citizens from natural hazards; reduce existing flood damage; minimize future flood damage, improve hazard resistance of infrastructure; promote long-term economic prosperity	1 - High	Ongoing BC planning and zoning staff continues to work with developer to provide emergency access	Long Term	Flood, hurricane
PA	Continue the road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	Public Works	General Fund Grant Funding	Protect the lives of our citizens from natural hazards; reduce existing flood damage; minimize future flood damage; minimize future earthquake losses; improve hazard resistance of infrastructure; promote long-term economic prosperity	1 - High	Ongoing BC Planning staff continues to coordinate with SCDOT and other agencies	Long Term	All hazards
SP	Continue to distribute a generator safety brochure to interested generator retail outlets, utility companies and the general public	Emergency Preparedness	Partner donations/ General Fund	Protecting the lives of citizens from natural and man-made hazards; educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; improve hazard resistance of infrastructure; minimize future hurricane-related losses	2 - Medium	Ongoing – BC provides data at least annually	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
SP	Continue to promulgate hurricane storm surge information through the Emergency Management Web Site and through community meetings.	Emergency Preparedness	General Fund	Protecting the lives of citizens from natural hazards; reduce existing flood damage; minimize future flood damage; minimize future hurricane damage; educating citizens regarding their vulnerability to natural hazards	2 - Medium	Ongoing	Long Term	Hurricane, flood,
PI	Provide hazard related information to all residents of Berkeley via telephone book, internet, and social media	Emergency Preparedness	General Fund	Protecting the lives of citizens from natural hazards; reduce existing flood damage; minimize future flood damage; minimize future hurricane damage; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1 - High	Ongoing	Long Term	All hazards
PI	Continue providing hazard-related literature/information to citizens at County, Town & City offices	Emergency Preparedness	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; minimize future tornado-related loss of life; minimize future terrorist activity incidents	2 - Medium	Ongoing	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PI	Sponsor "Hazard Awareness Week" and assist other communities in participating in this activity	Emergency Preparedness	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; minimize future tornado-related loss of life; minimize future hurricane damage; minimize future terrorist activity incidents	2 - Medium	Ongoing	Short Term	All hazards
PI	Recognize "International Building Safety Week" to promote safety in the built environment	Building & Codes	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	3 - Low	Ongoing	Short Term	Flood, tornado, hurricane, high wind, earthquake
PI	Continue providing speakers to civics groups regarding hazard related activities. Update the Speakers Bureau list as needed	Emergency Preparedness	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1 - High	Ongoing	Short Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PI	Install a data information system enabling the public to determine the status of plan reviews and/ or inspections, flood hazard information, storm surge information, and other public data currently kept in paper format (e.g. building plans, elevation certificates, zoning information, drainage easement, etc.) via the internet	Building & Codes	General Fund	Protecting the lives of citizens from natural hazards; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and recovery from hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; minimize future flood damage; minimize future hurricane damage	1 - High	Deferred	Long Term	All hazards
PI	Conduct outreach initiatives to the small business community to encourage businesses to prepare for hazard events	Emergency Preparedness	General Fund	Protecting the lives of citizens from natural and man-made hazards; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and recovery for hazard events; reducing vulnerability of built-environment to natural and man-made hazards; promote long-term economic prosperity; preserve historic building inventory	2 - Medium	Ongoing	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PI	Continue programs aimed towards providing resources to local schools to enhance their ability to educate students regarding hazard events and hazard events preparation	Emergency Preparedness	Grand Funding/ Project Impact Resources	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and recovery for hazard events; reducing future flood damage, reducing vulnerability of infrastructure and built environment to natural and man-made hazards	1 - High	Ongoing	Long Term	All hazards
PA	Elevate the ultraviolet disinfection system at the Lower Berkeley WWTP to avoid flooding of the system and making it inoperative	Berkeley County Water and Sanitation	Enterprise fund or grant funding	Reconstruct to a higher elevation and provide pumps to transport treated effluent into the system	1 - High	Deferred pending funding	Long Term	Flood
PA	Effluent pumping stations for LBWWTP	Berkeley County Water and sanitation	Enterprise fund or grant funding	Constructing new wet wells and appurtenances and reinstall existing pumps will minimize hazards.	1 - High	Deferred pending funding	Long Term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Install pipe and valves for crossover connections for Pump stations 1 AND 2	Berkeley County Water and sanitation	Enterprise fund or grant funding	Near intersection of Pomflant Access Rd and Red Bank Road install 3 valves and necessary appurtenances to be able to utilize either force main if necessary. This proposed project will reduce the community's vulnerability by improving the drainage system.	2 - Medium	Deferred pending funding	Long Term	Flood
PA	Relocation of 10,700 linear feet of 12" SDR 26 under pavement along 17A	Berkeley County Water and sanitation	Enterprise fund or grant funding	Line constructed outside of pavement area along edge of R/W. This proposed project will reduce the community's vulnerability by improving the drainage system.	2 - Medium	Deferred pending funding	Long Term	Flood
PA	6,000 Linear feet of 6" water line to St Stephen WWTP for backup disinfection system	Berkeley County Water and sanitation	Enterprise fund or grant funding	Install line along access road to WWTP. This proposed project will reduce the community's vulnerability by improving the drainage system.	3 - Low	Deferred pending funding	Long Term	Flood

ACTION PLAN FOR THE TOWN OF BONNEAU, SC

Following are the proposed projects/programs/actions to be undertaken by the Town of Bonneau, South Carolina in an effort to achieve the goals and objectives identified through the Hazard Mitigation Plan:

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Town has adopted and enforces the International series Building related and fire codes and floodplain management regulations	Mayor's Office	General Fund	Improve codes, Standards and specifications applicable to repairs, alterations or new construction of structures and facilities to lesson effects of future disasters	1 - High	Ongoing town staff continues to coordinate with county and federal agencies	Long Term	Flood
PA	Continued enforcement of zoning regulations, Subdivision and Land Development Regulations	Mayor's Office	General Fund	Eliminate the threat of hazard through measures such as relocation or prohibition of construction with an area susceptible to a risk or danger. Through ordinances and zoning, limit or exclude critical infrastructure in identified hazard prone areas. Promote and expand green space acquisition of increase water shed and provide buffer zone between residents and potentially hazardous industry	1 - High	Ongoing town continues to en-force regulations but will review comprehensive plan before the next BCHMP	Long Term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Conduct or Co-sponsor training workshops regarding the International Building-related flood and Fire and Fire Prevention Codes and Regulations if there is interest in these workshops	Mayor's Office and Berkeley County	Berkeley County	A continuing educational process designed to keep local government and the private sector aware of measures that can be taken to protect themselves and the property before, during and after a disaster	2 - Medium	Ongoing BC staff will coordinate with the mayor's office in 2016	Long term	Flood and wildfire
PA	Continue providing information to citizens regarding home structural mitigation actions	Mayor's Office- Berkeley County EPD	General Fund	A continuing educational process designed to keep local government and the private sector aware of measures that can be taken to protect themselves and the property before, during and after a disaster	2 - Medium	Ongoing BC reviews grant funding opportunities that can impact the town	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
SP	Promote standards for existing homes and businesses to be retrofitted to exceed minimal codes	Mayor's Office and Berkeley County	General Fund- Grants sources	Promote retrofitting of buildings main structural support components; columns post; pillars beams girders joists foundations; roof sheathing and wall to foundation connection. Less expensive retrofitting projects include; installation of shingle standards for high winds; installation of gable end bracing; and installation of diagonal bracing on meal buildings.	2 Medium	Ongoing Staff is	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
ES	Continue hazardous material training	Police, Fire and Berkeley County	Berkeley County	A continuing educational process designed to keep local government and the private sector aware of measures that can be taken to protect themselves and the property before, during and after a disaster.	1 High	Ongoing Town staff coordinate with BC emergency management to participate in this training at least annually	Long Term	All hazards
ES	Continue terrorist response training	Mayor's Office, Police, Fire	Berkeley County	A continuing educational process designed to keep local government and the private sector aware of measures that can be taken to protect themselves and the property before, during and after a disaster	1 High	Ongoing	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
ES	Continue responding to hazard emergencies	Mayor's Office, Police, Fire	Grant funding sources, Berkeley County	A continuing educational process designed to keep local government and the private sector aware of measures that can be taken to protect themselves and the property before, during and after a disaster	1 High	Ongoing	Long Term	All hazards
PI	Provide pamphlets of various topics at Town Hall providing information regarding Hurricane and other natural and man-made disaster preparedness.	Berkeley County	Berkeley County	A continuing educational process designed to keep local government and the private sector aware of measures that can be taken to protect themselves and the property before, during and after a disaster (Goal #3)	2 - Medium	Ongoing BC provides this information at least annually to the town.	Long Term	All hazards

ACTION PLAN FOR THE CITY OF GOOSE CREEK, SC

Below are the proposed projects/programs/actions to be undertaken by the City of Goose Creek, South Carolina in an effort to achieve the goals and objectives identified through the Hazard Mitigation Plan. Priority rankings ranging from High (1) to Low (4) have been assigned to each activity and a timeframe for completion, either Short-Term (1-3 yrs) or Long-Term (3-5 yrs) has been established:

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
ES, PI	Interconnect all City facilities via a fiber optic communication and data network		Cooperative project with cable provider, General Fund	Emergency Services continue communication activities that will prepare citizens for a hazard event to minimize damages.	2 - Medium	Ongoing as funding allows	Long Term	All hazards
PA	Develop a Stormwater Management Plan	Public Works Department	General Fund Stormwater Mgmt Fee	Project addresses preventative activity goals of providing public information about hazards and potential hazards and mitigation activities.	1 - High	Ongoing City continues to work with the county and Ashley River Stormwater Consortium to improve stormwater mgmt	Short Term	Flood, Hurricane
ES	Continue Emergency Debris Removal Plan	Public Works Department	General Fund	City has MOUs with contractors and other contingencies that address goal of minimizing the impacts of a hazard by preparing services to respond effectively to minimize damages.	1 - High	Ongoing	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PP	Maintain Effective Building and Fire Codes	Building Inspection Department Planning Department	General Fund	Structural mitigation activities reduce the impacts of a hazard by modifying the physical environment to withstand hazards.	1 - High	Ongoing City reviews ordinance on an ongoing basis	Long Term	All hazards
PI	Provide hazard specific checklists to residents and business owners	Public Information Office Planning Dpt.	General Fund	Public information advisories and awareness about hazards can minimize future damages.	3 – Low	Ongoing	Long Term	All hazards
PA. ES	Maintain City of Goose Creek Emergency Preparedness Plan	All City Dpts	General Fund Enterprise Fund	Preventative activities such as emergency preparedness planning are intended to reduce vulnerability to hazards.	1 - High	Ongoing City reviews preparedness plan with county and state on an ongoing basis	Long Term	All hazards
PA	Develop and Maintain Stormwater and Floodplain Mapping using GPS and GIS Technology	Public Works Dpt. Planning Dpt.	General Fund Stormwater Management Fees	Preventative activities are intended to reduce vulnerability to hazards.	3 – Low	Ongoing	Long Term	Flood Hurricane
PA	Construct disaster resistant records storage facility	Admin. Dpt.	General Fund Bond Funding	Preventative activities are intended to reduce vulnerability to hazards	2 - Medium	Ongoing as funding allows	Short Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PP	Retrofit all municipal facilities to withstand impacts of a disaster	All Depart.	General Fund Enterprise Fund Bond Funding	Property protection activities protect existing structures to withstand a hazard event.	2 - Medium	Ongoing	Long Term	All hazards
PA	Extend Henry Brown Blvd. to create highway loop around City in order to provide additional ingress/egress to facilitate evacuation and disaster response	City Council Admin Dept. Planning Dept.	Federal Funding State Funding	Preventative activities such as road improvements are intended to reduce vulnerability to hazards.	1 - High	In progress	Long Term	All hazards
SP	Place all existing overhead utilities underground	Appropriate Utility Agencies Admin Dept Public Works Dept	Inter-agency Agreements General Fund	Structural mitigation activities reduce the impacts of a hazard event by modifying the physical environment to withstand the particular hazard.	2 - Medium	Ongoing as funding permits	Long Term	All hazards
PA	Map water system valves, hydrants, and mains using GPS and GIS Technology	Public Works Dept.	Grant Funding Enterprise Fund	Preventative activities such as ongoing updates of infrastructure locations are intended to reduce vulnerability to hazards.	3 - Low	Ongoing as new developments and businesses come in to the community	Short Term	Flood, tornado, hurricane, high wind, hail, earthquake,

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
SP	Construct interconnected stormwater and flood control detention/ retention pond system	City Council Admin Dept Planning Dept Public Works Dept	Grant Funding Stormwater Management Fees Bond Funding	Structural mitigation activities reduce the impacts of a hazard event by modifying the physical environment to withstand the particular hazard	3 - Low	Ongoing as funding permits	Long Term	Flood, hurricane

ACTION PLAN FOR THE CITY OF HANAHAN, SC

Following are the proposed projects/programs/actions to be undertaken by the City of Hanahan, South Carolina in an effort to achieve the goals and objectives identified through the Hazard Mitigation Plan:

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	City has adopted and commenced enforcement January 1, 2004, the International series Building-related and Fire codes and the floodplain management (including the one foot freeboard and five year cumulative substantial improvement clause provisions) regulation	Building & Codes	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	1 - High	Ongoing – city reviews ordinances on an ongoing basis	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Continue to provide coordination of City storm water management regulations	Building & Codes	General Fund & Storm Water Fee	Minimize future flood damage; reduce existing flood damage; improve water quality; educating citizens regarding steps to take to reduce vulnerabilities; improve hazard resistance of infrastructure; reduce vulnerability of our infrastructure to natural and man-made hazards	1 - High	Ongoing	Long Term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue enforcement of zoning regulations, Subdivision and Land Development Regulations	Planning	General Fund	Minimize future flood damage; preserve environmental resources; promote long-term economic prosperity; preserve open space; encourage recreational activities; minimize future hurricane damage; minimize future earthquake damage; protecting the lives of our citizens from natural and man-made hazards	1 - High	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Conduct or co-sponsor training workshops regarding the International Building-related, flood, and Fire Prevention Codes and Regulations if there is interest in these workshops	Building & Codes	General Fund/self-supporting through workshop revenues	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; improve hazard resistance of infrastructure; minimize hurricane damage	1 - High	Ongoing City staff is available to work with neighborhood associations and interested parties	Short Term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Continue providing information to citizens regarding structural mitigation actions.	Emergency Preparedness	General Fund/ Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage	2 - Medium	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue enforcing regulations requiring new manufactured homes brought into the City of Hanahan to be constructed to wind zone 2 requirements as required per State Law	Building & Codes	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1 - High	Ongoing	Long term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Continue prohibiting new manufactured homes to be installed in “V” flood zones and requiring manufacture homes installed in “A” flood zones to be on permanent foundations.	Building & Codes	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protecting lives of citizens from natural and man-made hazards	1 - High	Ongoing	Long Term	Flood
PP	Promote the use of voluntary standards for single-family residences to exceed minimal building code requirements for wind and seismic design	Building & Codes	General Fund	Minimize future flood damage; minimize future damage; minimize future hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	2 - Medium	Ongoing Staff provides information new developers and residents	Short Term	Tornado, hurricane, high wind,

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PP	Promote standards for existing homes to be retrofitted to that exceed minimal codes	Building & Codes	General Fund	Reduce existing flood damage; preserve environmental resources; minimize future hurricane damages; minimize future earthquake damages; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	2 - Medium	Ongoing	Short Term	Flood, tornado, hurricane, high wind, hail, earthquake
PP	Continue providing information to citizens regarding hazard safe interior rooms	Emergency Preparedness	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2 - Medium	Ongoing	Short Term	Flood, tornado, hurricane, high wind, hail, earthquake
PP	Work toward eliminating flooding in existing Subdivisions	Building & Codes	General Fund	Minimize future loss	3 - Low	Ongoing City is reviewing funding options through the state and federal agencies	Long Term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PP	Continue demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor	Building & Codes	Grant Funding	Reduce existing flood damages; promote long-term economic prosperity; encourage recreational activities; minimize future hurricane damage; minimize future flood damage; reducing vulnerability of infrastructure to hazards	3 - Low	Ongoing as funding permits	Short Term	Flood, tornado, hurricane, high wind, hail, earthquake
PP	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties if suitable candidates can be identified	Building & Codes	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1 - High	Ongoing	Long Term	Flood
PP	Distribute a brochure on protecting boats from damages during hurricanes to interested citizens through expos, offices, marinas and boat dealers	Emergency Preparedness	General Fund	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities	3 - Low	Ongoing with the Berkeley County emergency management staff	Short Term	Flood, Hurricane

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
GIS	Develop and maintain storm drainage inventory maps and database.	Building & Codes	General Fund & Storm Water Fee	Reduce existing flood damage, minimize future flood drainage and improve water quality.	2 - Medium	Ongoing data collected	Short Term	Flood, hurricane
ES	Continue hazardous material training	Fire Department	General Fund & Grant Funding	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; improve hazard resistance of infrastructure; assessing vulnerability to man-made hazards; establishing cooperative relationships between public, private and non-profit sectors to enhance response for hazard events.	1 - High	Ongoing city staff coordinates with state and county staff to conduct trainings throughout the year	Short Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
ES	Continue Terrorist Response Training	Police Department	Grant Funding	Protecting lives of our citizens from man-made hazards; minimize future terrorist activity incidents; preserve environmental resources; improve hazard resistance of infrastructure; assessing vulnerability to man-made hazards; establishing cooperative relationship between public, private and non-profit sectors to enhance response for hazard events; promote long-term economic prosperity.	1 - High	Ongoing - city staff coordinates with state and county staff to conduct trainings throughout the year	Short Term	All hazards
ES	Review options to have gas stations available to service emergency services vehicles during hazard activity	Police Department	N/A	Prepares services to respond efficiently and rapidly during and after a hazard event.	1 - High	Ongoing	Short Term	All hazards

ACTION PLAN FOR THE TOWN OF JAMESTOWN, SC

The following are proposed projects/ programs/ actions to be undertaken by Jamestown, South Carolina in an effort to achieve the goals and objectives identified through the Hazard Mitigation Plan:

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Town has adopted and commenced enforcement January 1, 2004, the International series Building – related and fire codes and the floodplain management (including the one foot freeboard and five year cumulative substantial improvement clause provisions) regulations	Building & Codes	General fund	Minimize future flood damage; Minimize future earthquake damage; protect the lives of our citizens from natural and man-made Hazards	1 - High	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Continue to provide coordination of County storm water management regulations	Engineering	General funds/ Storm Water Fee	Minimize future flood damage; reduce existing flood damage; improve water Quality; educating citizens regarding steps to take to reduce vulnerability of our infrastructure to natural and man-made hazards	1 - High	Ongoing – town staff works with the county staff	Long Term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue enforcement of zoning regulations, Subdivision and Land Development Regulations	Planning	General Fund	Minimize future flood damage; preserve environmental resources; promote long-term economic prosperity; preserve open spaces; encourage recreational activities; minimize future hurricane damage; minimize future earthquake damage; protecting the lives of our citizens from natural and man-made hazards	1 - High	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake

ACTION PLAN FOR THE TOWN OF MONCKS CORNER, SC

The following are proposed projects/ programs/ actions to be undertaken by Moncks Corner, South Carolina in an effort to achieve the goals and objectives identified through the Hazard Mitigation Plan:

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue administration of the current edition of the International Building Codes	Building Department	General Fund	1	1 - High	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Continue to coordinate with the County Engineering Office to enforce Stormwater Management Regulations	Town/ County Engineering	General Fund	6 and 7	1 - High	Ongoing Staff coordinates with other agencies training on storm water practices	Long Term	Flood
PA	Continue enforcement of the Land Development Regulations and Flood Management guidelines of the Zoning Ordinance	Planning	General Fund	6 and 7	1 - High	Ongoing city reviews regulations on an ongoing basis	Long Term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue enforcement of updating buildings to meet current Codes upon change of occupancy	Building Department	General Fund	1	1 - High	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
PP	Manage and when appropriate correct drainage in existing subdivisions	Public Service/ County Engineering	General Fund, Grant Funding	7	2 - High	Ongoing as funding permits	Long Term	Flood
GIS	Continue Participation in the GIS Consortium and maintain adequate equipment and education for Town staff to utilize the GIS	Planning/ County GIS	General Fund	6	1 - High	Ongoing	Long Term	All hazards
ES	Continue Responding to hazard emergencies	Fire and Police	General Fund	6,2, and 3	1 - High	Ongoing with Berkeley County and other jurisdictions	Long Term	All hazards
SP	Evaluate existing Town facilities for hazard resistance and retrofit where needed	Admin	General Fund, Grant Funding	2,3,and 5	2 - Medium	Ongoing	Long Term	All hazards

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue coordination with all applicable agencies in the permitting process for structures and infrastructure	Planning/ Building/ Public Service	General Fund	1,6,7	1 - High	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake

ACTION PLAN FOR THE TOWN OF ST. STEPHEN, SC

The following are proposed projects/ programs/ actions to be undertaken by St. Stephen, South Carolina in an effort to achieve the goals and objectives identified through the Hazard Mitigation Plan:

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Town has adopted, and commenced enforcement January 1, 2004, the International series Building – related and fire codes and the floodplain management (including the one foot freeboard and five year cumulative substantial improvement clause provisions) regulations	Building & Codes	General Fund	Minimize future flood damage; Minimize future earthquake damage; protect the lives of our citizens from natural and man-made Hazards	1 - High	Ongoing	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake
PA	Continue to provide coordination of County storm water management regulations	Engineering	General funds/ Strom Water Fee	Minimize future flood damage; reduce existing flood damage; improve water Quality; educating citizens regarding steps to take to reduce vulnerability of our infrastructure to natural and man-made hazards	1 - High	Ongoing with the county staff	Long Term	Flood

ACTION TYPE	ACTIVITY	LEAD AGENCY	FUNDING SOURCE	GOAL(S) ADDRESSED	PRIORITY	STATUS	TIMEFRAME	HAZARDS ADDRESSED BY ACTION
PA	Continue enforcement of zoning regulations, Subdivision and Land Development Regulations	Planning	General Fund	Minimize future flood damage; preserve environmental resources; promote long-term economic prosperity; preserve open spaces; encourage recreational activities; minimize future hurricane damage; minimize future earthquake damage; protecting the lives of our citizens from natural and man-made hazards	1 - High	Ongoing town reviews ordinances on an ongoing basis	Long Term	Flood, tornado, hurricane, high wind, hail, earthquake

I. PROCESS

The BCHMP will be implemented by assignment as designated in the Mitigation Action Plans for each jurisdiction. Each Mitigation Action Plan activity is assigned specific implementation measures and a "Responsible Agency." Each activity is also assigned a target completion date or "Timeframe." This date does not represent a required completion date; rather, it represents the timeframe within which the jurisdiction intends to complete the activity, if and when the necessary resources become available.

For the 2015 Berkeley County Hazard Mitigation Plan update, the Cities of Goose Creek, Hanahan, and the Towns of Jamestown, St. Stephen, Bonneau and Berkeley County submitted revisions to their Local Mitigation Action Plans. Those with constant Local Action Plans are towns ranging in size from a several thousand to fewer than five hundred residents. All but one is without a town planner; none have emergency management staff and consequently rely upon the County for emergency preparedness and management services. The timeframes for items in each of their Local Action Plans relies upon partnerships and/or funding assistance from county, state, and or federal resources. Procedures for the monitoring and updating of the BCHMP are provided in Chapter Five: Evaluation and Updating.

II. LOCAL PLANNING VEHICLES

The BCHMP language addresses risks to natural hazards as noted in the Natural Resources elements of the respective comprehensive plans. Per South Carolina law, these plans are updated no less frequently than every five years and adopted by ordinance by local government councils. The strategies identified in the Local Mitigation Action Plans are similar to comprehensive plan implementation strategies; local emergency management and preparedness staff should, therefore, work with Berkeley County planners to ensure their inclusion in the County comprehensive plan. Hazard and risk assessment data from the 2015 Plan was reviewed and analyzed by each participating jurisdiction with anticipation that the data will be incorporated into their comprehensive plans.

Since the creation of the original 2005 Berkeley-Dorchester Hazard Mitigation Plan, Berkeley County has initiated capital improvements programs to schedule capital improvements in their jurisdictions. Capital improvements are the construction, rehabilitation, or expansion of fixed infrastructure (roads, sewer lines, etc.), buildings, and in some cases, large vehicles (fire trucks) in excess of $100,000. Capital improvements differ from operating expenses in that they are one-time expenditures; capital improvements are typically bonded rather than paid for all at once. A five-year schedule of capital improvements, therefore, is a responsible fiscal management tool employed by local governments. The ongoing maintenance of this schedule is a capital improvements program (CIP).

Like the comprehensive plan, South Carolina law assigns responsibility for the capital improvements program to the local government's planning commission. As the comprehensive plan is an important program to forecast long-term capital needs, the CIP is equally important to facilitate solutions to those needs through the identification and scheduling of funding sources. County emergency management and preparedness staff must therefore continue to work with county planners and planning commissions to ensure that local mitigation action items of a capital nature not only appear in the comprehensive plan, but also advance to the CIP to be financed and constructed.

III. FUNDING SOURCES

Because many hazard mitigation activities may be too costly for communities to undertake, it is important to seek out alternative funding opportunities. This section of the Plan identifies Federal, State and non-governmental funding sources that may be utilized to perform hazard mitigation activities.

FUNDING SOURCES				
PROGRAM	**AGENCY**	**PURPOSE**	**MATCH**	**SUGGESTED PROJECTS**
FEDERAL				
Pre-Disaster Mitigation Program	FEMA	Funding for cost-effective hazard mitigation activities	75% Federal share, 25% non-Federal share, which can be in-kind or cash	Hazard Mitigation Planning, Hazard retrofits, technical assistance, Community outreach
Flood Mitigation Assistance Program	FEMA	Pre-disaster funding to reduce the long-term risk of flood damage to property	75% Federal share, 25% non-Federal share,	Building relocation or retrofitting
Hazard Mitigation Grant Program	FEMA	Assists local governments to implement long-term mitigation measures following a disaster declaration	Up to 75% Federal share, non-Federal share may be in-kind services, materials or cash	Building relocation and retrofitting,
Public Assistance (Infrastructure) Program	FEMA	Post-disaster funding for infrastructure repairs	None	Road, bridge, culvert repair
SBA Assistance Program	US Small Business Administration	Low-interest loans for small businesses to repair facilities after a disaster declaration	Loan	Repair on any uninsured equipment
Community Development Block Grants	US Department of Housing and Urban Development	Funding for community and economic development projects	None	Acquisition reconstruction or rehabilitation of damaged property in areas damaged in a disaster.

LOCAL FUNDING SOURCES

Small municipal governments in South Carolina depend heavily on local property taxes as their source of revenue. This revenue, together with allocations by formula from the State of South Carolina, constitutes a local government's general operating budget, funds day-to-day functions such as emergency services, administration, and other baseline services. The municipalities in Berkeley County need to identify a local match for any of the above federal grants opportunities within their general operating budgets or through public/private partnerships.

The larger municipalities and Berkeley County are currently administering one or more tax-increment financing (TIF) districts to raise funds for capital improvements; TIFs are a special tax district in which property tax revenues are redirected to specific local capital projects aimed to revitalize the district, a smaller geography within the broader limits of incorporation. A TIF district exists for a limited period of time, typically ten to fifteen years, before monies redirected for revitalization must once again fund operating budgets for all taxing authorities relying upon the property taxes in question.

A local government that can demonstrate within a redevelopment plan that a hazard mitigation activity will serve as a capital improvement to help revitalize a portion of its jurisdiction may choose to establish a TIF district, identify that hazard mitigation activity in its capital improvements program, and assign TIF revenue to the improvement. Such a redevelopment plan must be prepared by a planning commission and adopted by the local government council. The Council would subsequently adopt the tax-increment financing district by ordinance. An application of hazard mitigation funding coupled with tax-increment financing would be a neighborhood or commercial district in need of significant drainage improvements due to repeated flooding or tidal inundation.

NON-GOVERNMENTAL FUNDING SOURCES

There are numerous trusts, foundations, and corporations that award money community and economic development, which would allow money to be awarded for mitigation activities. Appendix H is a list of alternate non-governmental funding sources that was provided by the South Carolina Emergency Management Division.

MONITORING, EVALUATION AND UPDATING

The Plan Maintenance section of the Berkeley Hazard Mitigation Plan describes the formal process that will ensure the Plan remains an effective and relevant document. This section establishes the method and schedule for monitoring, evaluating, and updating the BCHMP during three-year and five-year plan-update cycles. It also establishes how the BCDCOG will maintain ongoing community involvement in the planning process.

GENERAL PLAN MAINTENANCE APPROACH

- Incorporate hazard mitigation actions into existing planning mechanisms.
- Determine how mitigation projects and actions will be monitored.
- Establish indicators of effectiveness or success.
- Develop an evaluation and revision schedule to ensure the Plan is up-to-date at the end of the three-year and five-year cycles.
- Establish a process for public input and community involvement during the planning cycle.

I. MONITORING AND REPORTING

Berkeley County will perform periodic monitoring and updating of the Berkeley County Hazard Mitigation Plan (BCHMP) as adopted and amended. The Plan should be reviewed within three years of its approval, or after each disaster declaration. The Plan must be updated within five years of its approval. Each review and update shall work to improve the effectiveness of the Plan by incorporating more data and research as it becomes available. The Berkeley County Emergency Preparedness Department will monitor and review the BCHMP for activities within Berkeley County boundaries.

THREE-YEAR PLAN REVIEW

During the three-year review, the status of each Mitigation Action Plan activity will be reviewed and incorporated into a status report to the county council. This report shall include an evaluation of the effectiveness of each action plan activity and a recommendation for any needed changes. The criteria for plan evaluation will include a rating and ranking of performance on each action or project. Results will be compiled into the report, which may recommend BCHMP modifications.

A Hazard Mitigation Planning Committee will be convened utilizing members from the committee assembled for the 2015 Update. This will include representatives from municipalities, which rely on their county governments for emergency preparedness and management services. The Planning Committee will determine whether or not the recommendations found in the aforementioned report warrant modification of the Plan.

FIVE-YEAR UPDATE

Every five years, the BCHMP will be thoroughly reviewed and revised. This update shall include the latest available data and maps to be published in the Plan. Each Hazard Mitigation Planning Committee member will reexamine the goals and objectives of the Plan and may add or subtract from these, as needed. Each jurisdiction will be asked to reevaluate its local mitigation action plan and add or subtract action strategies, as needed.

The Planning Committee will assess and incorporate recommended comments expressed by FEMA in the initial review into the plan revision. At the end of the planning cycle, the Planning Committee will submit the updated Plan to the State Emergency Management Division (SCEMD) and FEMA for review. After FEMA has approved the Berkeley County HMP, the Berkeley County Council will formally adopt the Plan by council action. The table on the following page is an outline of how the Plan will be updated after FEMA approval:

BCHMP UPDATE SCHEDULE		
TIMEFRAME	**PARTICIPANTS**	**EXPECTED OUTCOME**
2018	Berkeley County Emergency Management	Apply for Plan Update Funding.
FIRST AND SECOND QUARTERS, 2019	Planning Committee, General Public	Reconvene Planning Committee to discuss possible plan improvements. Update: Goals, Risk/Vulnerability Assessments. Promote and conduct Public Hearing on BCHMP.
FOURTH QUARTER 2019	Planning Committee	Draft Plan Completed
FIRST QUARTER 2020	Plan Approval by Jurisdiction	
SECOND QUARTER, 2020	Planning Committee, BCDCOG	Submit draft plan update to SCEMD for review and comments.
SECOND QUARTER, 2020	BCDCOG, SCEMD	Submit plan to FEMA for final approval.
THIRD QUARTER, 2020	BCDCOG, local jurisdictions, Berkeley County Council, County Council	Re-adopt the FEMA approved Berkeley County HMP

II. INCORPORATION OF LOCAL PLANNING MECHANISMS

As part of the local capability assessment conducted during the planning process, the Planning Committee and BCDCOG staff identified current plans, programs, policies/ordinances, and studies/reports that will augment or help support mitigation planning efforts. The Planning Committee will meet, on an annual basis, and will be the mechanism for ensuring the local jurisdictions integrate hazard mitigation into future planning activities. Following the BCHMP approval and adoption, the Planning Committee will work to incorporate, where applicable, the BCHMP into the planning mechanisms identified in the table on the following page.

Jurisdiction	Comprehensive Plan	Capital Improvements Program	Regional Development Plan	Transportation Improvements	Water and Sewer Construction	Building Code Enforcement	Zoning Ordinance	Floodplain Ordinance	Subdivision Regulations
Berkeley County	●	●	●	●	●	●	●	●	●
Bonneau	●		●	●		●	●		●
Goose Creek	●	●	●	●	●	●	●	●	●
Hanahan	●		●	●		●	●	●	●
Jamestown	●		●	●		●	●	●	●
Moncks Corner	●	●	●	●	●	●	●	●	●
St. Stephen	●		●	●		●	●	●	●

Throughout the plan maintenance cycle, the Planning Committee will work to integrate hazard mitigation goals and actions into the general operations of County and municipal agencies. The Planning Committee will work with agencies to identify opportunities as outlined on the following page:

- Update work plans, policies, or procedures to include hazard mitigation concepts.
- Establish mitigation funding within capital and operational budgets.
- Issue plans, policies, executive orders, regulations, or other directives to carry out mitigation actions.
- Include hazard mitigation action plan elements in proposed comprehensive plans and area redevelopment plans being considered for adoption by local jurisdictions.

CONTINUING PUBLIC PARTICIPATION

Berkeley County is dedicated to continued public involvement in the hazard mitigation planning and review process. During all phases of plan maintenance, the public will have the opportunity to provide feedback. The BCHMP Plan will be maintained and available for review, posted on the BCDCOG website (www.BCDCOG.com) throughout 2015. Individuals will have an opportunity to submit comments for the Plan update at any time via mail or e-mail.

The BCDCOG will compile all comments and present them at the annual Planning Committee meetings where members will consider them for incorporation into the revision. To help publicize the revised 2015 BCHMP, six months prior to the submission of the 2020 Plan update, Berkeley County will post a notice on its website requesting feedback on an updated draft BCHMP.

Berkley County will hold community involvement meetings with representatives from academic institutions, the private sector, community groups, and neighboring jurisdictions as needed. This will provide the public an opportunity to express their concerns, opinions, or ideas about any updates/changes that are proposed to the Plan.

III. PLAN AMENDMENTS

An amendment to the BCHMP shall be initiated by the Hazard Mitigation Planning Committee, either on their own initiative or upon the recommendation of Berkeley County Council or at the request of state or federal agencies.

After an amendment is initiated, county staff will contact all interested or affected parties and make them aware of the nature of the amendment. These parties will be given thirty days to comment on the amendment. At the end of this comment period, county staff shall forward all comments to the Hazard Mitigation Planning Committee for its review in consideration of the final amendment.

Should the Planning Committee approve the amendment, staff will notify the County Council of the amendment and the local government representative of each participating municipality.

HAZARD IDENTIFICATION AND ANALYSIS

I. INTRODUCTION

Hazard identification was achieved by analyzing existing sources of hazard data researched including FEMA floodplain publications, SC Forestry Commission fire events data, National Oceanic Atmospheric Administration (NOAA)-Coastal Services Center for storm historical records and National Climatic Data Center (NCDC) for flood, drought, tornadoes and winter storms events data. Hail information was gathered from the NOAA Historical Severe Weather Database and earthquake information from the University of South Carolina (USC) Seismic Network. The majority of the data used to perform the risk assessment was processed by the USC Hazards Research Lab (HRL).

The hazard identification process was used to identify those hazards that pose the greatest risk to Berkeley County and to determine the potential vulnerability to those hazards. The following section provides an overview of the analyses including graphical representations.

II. POTENTIAL HAZARDS

An important indication of the hazards threatening the community is the number of occurrences of disaster events, and the level of impact they have on the community. For Berkeley County, the natural hazards that pose a major threat to these areas are storms, tornadoes, hail, earthquakes and liquefaction, flood zones, flood events and fire events.

The National Climatic Data Center (NCDC) has monitored the occurrences of some of these hazards since 1950 to the present. Their database includes information of location, date and time of occurrence, death and injuries reported, and total damage. A summary of this information for Berkeley County is presented in Table 1 and Table 2. The time period used by the NCDC is not the same as data represented spatially in the analyses.

The Storm Events Database for NOAA noted 224 events were reported between 01/01/2010 and 05/31/2014 (1612 days). A Summary of the event day from 2010 - May 2014 data is noted below:

Table 1: Summary of events that have occurred in Berkeley County January 1, 2010-May 31, 2014

Number of Days with Event:	**86**
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	2
Number of Days with Event and Property Damage:	62
Number of Days with Event and Crop Damage:	3
Number of Event Types reported:	13

Source: NOAA-NCDC; Hazard Vulnerability Research Institute; USGS

Table 2: Summary of events that have occurred in Berkeley County 1950-May 2014 and their estimated damage values.

HAZARDS	TIME PERIOD	# EVENTS	# DEATHS	# INJURIES
Floods	1950- May 2014	51	1	0
Hurricane/Tropical Storms	1950- May 2014	13	0	0
Tornadoes	1950- May 2014	30	1	26
Winter Storms	1950- May 2014	5	0	0
Thunderstorms	1950- May 2014	296	2	8
Hail	1950- May 2014	253	0	0
Wildfires	1950- May 2014	6,015	0	0
Droughts	1950- May 2014	21+	0	0
Earthquakes	1950- May 2014	540	0	0
Dam Failure	----	----	----	----

Source: NOAA-NCDC; Hazard Vulnerability Research Institute; USGS

HAZARD	PROBABILITY	RECURRENCE
Floods:	79.5%	1.26 years
Hurricane/Tropical Storms:	20.3%	4.93 years
Tornadoes:	46.8%	2.14 years
Winter Storms:	7.8%	12.8 years
Thunderstorms:	461.7%	0.21 years
Hail:	394.7%	0.25 years
Wildfires:	9383.7%	0.01 years
Droughts:	32.8%	3.05 years
Earthquakes:	842.4%	0.12 years

SINCE THE LAST PLAN IN 2010, THE FOLLOWING DESCRIPTIONS NOTE THE CHANGES BY HAZARD CATEGORIES

(Sources: NOAA-NCDC; Hazard Vulnerability Research Institute; USGS, SHELDUS)

FLOODING

ON JULY 30, 2007: Two feet of water was reported to be covering side streets in Goose Creek. August 12, 2011: Heavy rain led to flash flooding along Henry E Brown Boulevard near Inness. The road was closed due to ponding on the road. No property damage or injuries were reported.

JUNE 11, 2012: Heavy rain led to flash flooding near Goose Creek. Yards were flooded along Hartin Blvd. No property damage or injuries were reported.

FEBRUARY 26, 2013: Heavy rain led to flash flooding near Goose Creek. Roads flooded and were impassable in College Park Estates. No property damage or injuries were reported.

JULY 29, 2013: Heavy rain led to flash flooding near Goose Creek. Westview Blvd, Springhall Road, Trinity Road, and Oxford road were closed due to flooding. Several cars were flooded. There was approximately $40,000 in property damage reported. No injuries were reported.

AUGUST 20, 2013: Heavy rain led to flash flooding near Goose Creek. Jedburg Road, Riley Lane, Haney Branch Road, and Champions Drive were closed. No property damage or injuries were reported.

AUGUST 10, 2014: Heavy rain led to flash flooding near Hanahan. Yeamans Hall Road was closed due to flooding. No property damage or injuries were reported.

HURRICANES/TROPICAL STORMS:

Three hurricane/tropical storm events have been reported since 2010.

TORNADOES

The strongest tornadoes on record occurred on May 10, 1998 and September 3, 1998. The May 10th tornado was an F2 that damaged 442 homes in the county. There was approximately $5,000,000 in damage reported. There were 7 injuries and 1 fatality reported as a result of the tornado. The September 3rd tornado was an F2 that damaged 73 homes and destroyed 7. The hardest hit area was just southeast of Moncks Corner. There was approximately $2,800,000 in damage reported. There were 9 injuries reported as a result of the tornado.

There has been 1 tornado reported in Berkeley County since the last plan update in 2010.

APRIL 16, 2011: An EF1 tornado with estimated wind speeds between 105 - 110 mph touched down near Russellville. The tornado was on the ground for nearly 8 miles. The tornado lifted a roof off a church, destroyed a mobile home, and uprooted numerous trees. Property damage estimates are not available.

WINTER STORMS:

Since 2010, nine winter storms have been reported.

THUNDERSTORMS

Since the last plan update in 2010, there have been 54 reports of damaging wind in Berkeley County. The highest estimated wind gust since 2010 was 74 mph. This occurred on July 1, 2012. A large trailer was damaged and trees were blown down near St. Stephen. Property damage was approximately $8,000. No injuries were reported.

HAIL

Since the last plan update in 2010, there have been 23 reports of hail in Berkeley County. A total of $500 in property damage was reported from the 23 hail events. The largest hail reported during that time period was on April 9, 2011 near Russellville. 2.50" diameter hail (tennis ball size) was reported there. No damage or injuries were reported.

WILDFIRES

Since the last plan update in 2010, a 25 acre wildfire occurred on Frost Lane in Huger, within the Francis Marion National Forest. The fire threatened multiple homes in the area, but no property or crop damage occurred.

DROUGHT

Since the last plan update in 2010, Berkeley County experienced a moderate drought from July of 2011 until June 2012. There was another period of moderate drought from December 2012 until April 2013.

EARTHQUAKES

Since the last plan update in 2010, the highest magnitude of earthquake occurred on July 31st, 2015 and registered 2.8 magnitudes with no property damage.

DAM FAILURES

There have not been any dam failures in the last five years.

1. Flooding

Berkeley County is located in the southern portion of South Carolina and is bordered by Charleston County to the south, Colleton County to the west, Georgetown County to the east and Orangeburg County to the north.

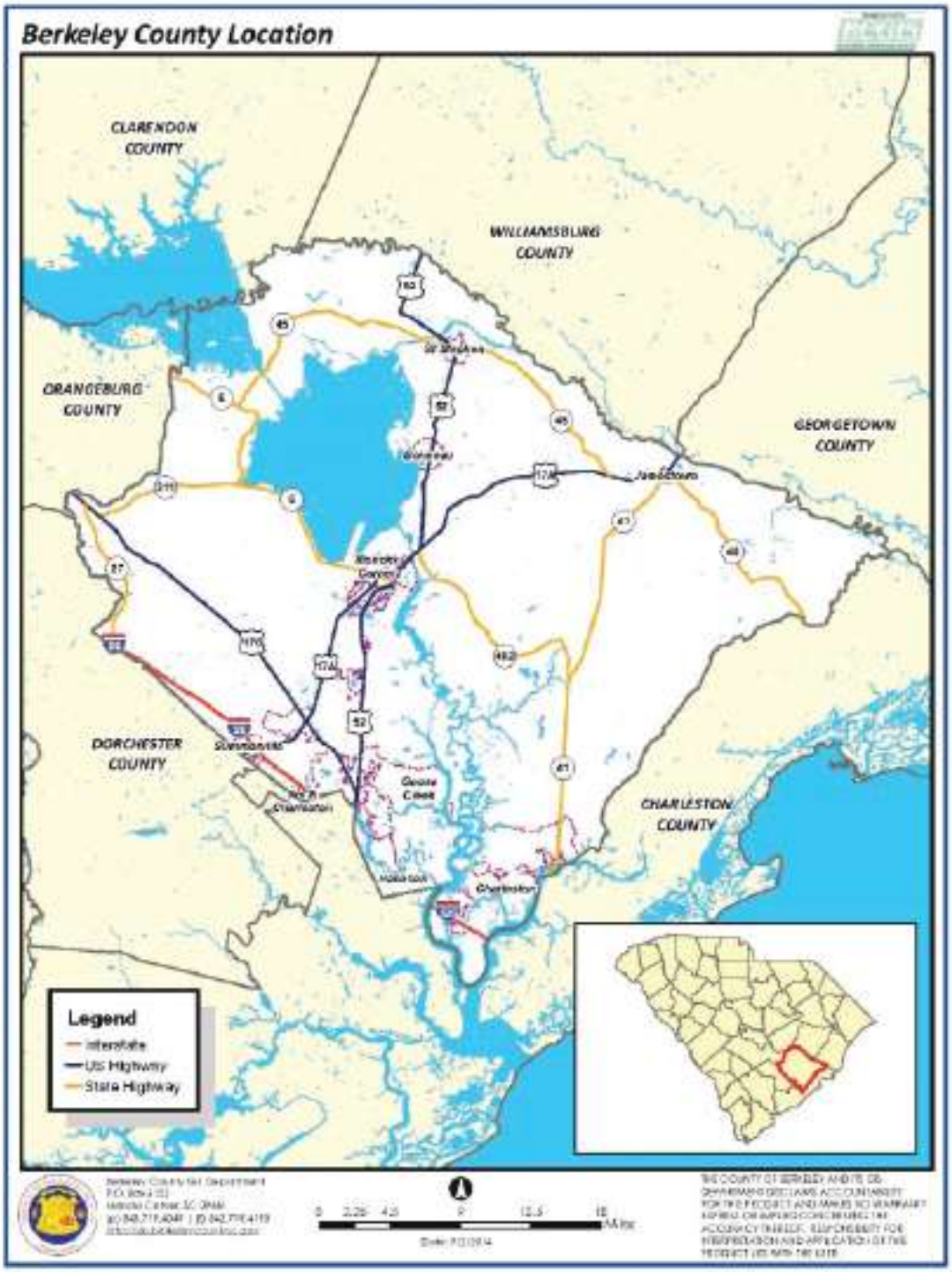
Berkeley County is part of the Lowcountry Region which is characterizes by low topographic relief or flat terrain areas. The county flood vulnerability is heightened by the presence of the adjacent low-lying and estuarine areas. Berkeley County is also within the Santee and Ashley/ Cooper River Basins. The Ashley/Cooper River Basin covers the southern portion of the county. The Santee River basin contains 11 watersheds and is 1,279 square miles. There are a total of 934 stream miles in the Santee River Basin, 94, 664 acres and 5,275 acres of estuarine waters. The Santee River is formed from the confluence of the Congaree and Wateree Rivers and flows through Lake Marion. The river is diverted into lower Lake Marion, and either flows out of the Santee dam to eventually drain into the Atlantic Ocean or is channeled along a 7.5 mile diversion canal to fill Lake Moultrie and the (lower) Santee River. (Source: DHEC-OCRM)

The Ashley/Cooper River Basin encompasses 8 watersheds and 843 square miles with a total of 471 stream miles, 60,188 acres of lake waters, and 13,059 acres of estuarine areas. Berkeley County also includes the Edisto River Basin which originates in the Sandhills Region of the state; this basin contains 30 watersheds and two million acres, 2,775 stream miles and 32 square miles of estuarine areas. Due to the hydro-morphology setting of Berkeley County flooding events can turn into a major threat to the area. (Source: DHEC-OCRM)

Flooding is a naturally occurring event that affects rivers and streams that overflow onto adjacent banks and floodplains in Berkeley County when excess rainfall or storm surge is observed. The impact of flood events is correlated to the land use/land cover of the watershed or basin area. For example, heavily developed urbanized watersheds, with large areas covered by buildings, parking lots and roads have higher runoff volumes which may occur quickly due to drainage modifications.

Berkeley County is susceptible to riverine, urban and flash floods. Flooding along rivers is a natural event that may occur seasonally when winter or spring rains coupled with melting snow, fill river basins with too much water too quickly. Torrential rains from decaying hurricanes or tropical systems can also produce river flooding. Conversely, urban flooding occurs when land is converted from fields or woodlands to impervious areas (parking lots, roads, etc.) losing its ability to absorb rainfall. Urbanization increases runoff 2 to 6 times over what would occur on natural terrain. During periods of urban flooding, streets can become swift moving rivers, while basements can become death traps as they fill with water.

Figure 1: Berkeley County Location Map



Flash floods occur within a few minutes or hours of excessive/localized rainfall, a dam or levee failure, or a sudden release of water held by an ice jam. These floods can roll boulders, tear out trees, destroy buildings and bridges, and scour out new channels. Rapidly rising water can reach heights of 30 feet or more; flash flood-producing rains can also trigger catastrophic mud slides. Most flash flooding is caused by slow-moving thunderstorms, thunderstorms repeatedly moving over the same area, or heavy rains from hurricanes and tropical storms. (Source: NWS)

For this reason, most of the floodplains in the United States have been mapped by the Federal Emergency Management Agency (FEMA). These maps designate the 100-year flood zone, the Base Flood Elevation and Special Flood Hazard Areas. A 100-year flood zone is an area that has one percent chance of flooding in any given year. Additionally, the base flood elevation relates to the 100-year flood zone and is the elevation of the water surface resulting from a 100-year flood.

Damage caused by flood events ranked second for Berkeley County. According to NCDC data (1950-May 2014) a total of 53 flood events and one death were reported for Berkeley County during this time. The extent of flooding that occurred in Berkeley County from 2010 - 2014 is noted below.

JULY 30, 2007: Two feet of water was reported to be covering side streets in Goose Creek.

AUGUST 12, 2011: Heavy rain led to flash flooding along Henry E Brown Boulevard near Inness. The road was closed due to ponding on the road. No property damage or injuries were reported.

JUNE 11, 2012: Heavy rain led to flash flooding near Goose Creek. Yards were flooded along Hartin Blvd. No property damage or injuries were reported.

FEBRUARY 26, 2013: Heavy rain led to flash flooding near Goose Creek. Roads flooded and were impassable in College Park Estates. No property damage or injuries were reported.

JULY 29, 2013: Heavy rain led to flash flooding near Goose Creek. Westview Blvd, Springhall Road, Trinity Road, and Oxford road were closed due to flooding. Several cars were flooded. There was approximately $40,000 in property damage reported. No injuries were reported.

AUGUST 20, 2013: Heavy rain led to flash flooding near Goose Creek. Jedburg Road, Riley Lane, Haney Branch Road, and Champions Drive were closed. No property damage or injuries were reported.

AUGUST 10, 2014: Heavy rain led to flash flooding near Hanahan. Yeamans Hall Road was closed due to flooding. No property damage or injuries were reported.

Since the creation of the original Berkeley Hazard Mitigation Plan, adopted in 2005, Berkeley County, along with the Towns of St. Stephen and Jamestown and the Cities of Goose Creek and Moncks Corner have participated in the National Flood Insurance Program. Berkeley County now has a Flood Plain Manager and a website for resident referral that lists contacts for information and a list of Frequently Asked Questions.

Despite the possible flood risk in their community, the Town of Bonneau does not participate in the NFIP and remain sanctioned; the Emergency Management Director for the county will meet with the town in 2016 to address to go over the advantages of this program.

For this community to receive approval for its flood mitigation strategy one or more of the following may be required:

1. An adopted revised flood mitigation strategy that addresses how the jurisdiction will reduce future flood losses in the areas for new development and infrastructure, and major improvements to existing structures;
2. An adopted flood damage prevention ordinance that complies with minimum NFIP standards,

as contained in 44 CFR 60; and/or

3. Documentation of acceptance of the jurisdiction into the NFIP.

The Town of Bonneau will also need to individually assess the status as an NFIP-sanctioned community and consider compliance with the above requirements. If any jurisdiction chooses to meet the requirements documentation of compliance will be provided either as an amendment to this plan or inclusion in future plan updates.

Repetitive Loss

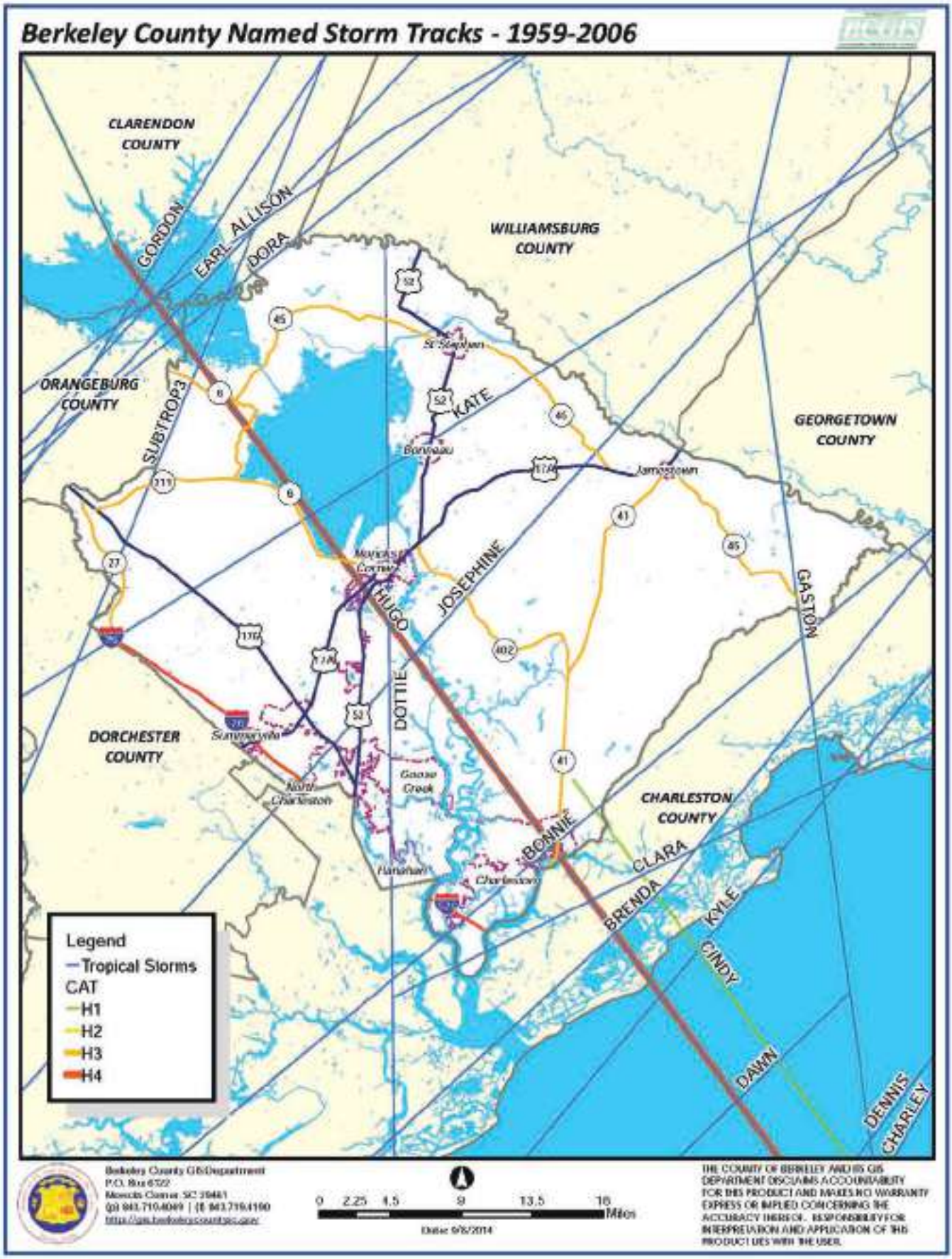
One additional property has been added to the repetitive loss list for a total of 8 residential properties in the City of Hanahan. No other communities had repetitive loss structures. New Development

As noted in the Charleston Post and Courier newspaper article in February of 2015, mega developments to house 75,000 residents are currently in the planning or construction phases in Berkeley County. One of the largest development is the Nexton development where the population is expected to reach as many as 30,000 as the development is built out over the next 20+ years. Up to 30,000 more residents could live in the Cane Bay development and another 15,000 in the Carnes Crossroads development. The recent announcement by Volvo that the first U.S.A. plant will be located in Berkeley County will also impact the pace of growth and the transportation needs.

To address these needs, Berkeley County has worked with the real estate developers and industries to move developments out of flood prone areas and adopt best management practices for storm water and other infrastructure/building facilities. The 2010 Comprehensive Plan notes that "Berkeley County will plan and implement mitigation strategies to protect existing communities and neighborhoods from physical deterioration due to natural hazards and/or neglect.

In addition, Berkeley County strives for a greater overall balance of housing and employment opportunities within areas where infrastructure exists or is planned while rural and natural areas are conserved. The Plan, therefore, proposes designation of a defined Principal Growth Area (PGA) within Berkeley County. The Principal Growth Area is the area within which more intense development of various uses should occur, to be served by existing, and efficiently expanded infrastructure and other public facilities and services. Remaining portions of the County remain designated for limited development and land uses that complement the County's abundant natural and agricultural lands. This Plan places emphasis on goals and strategies that will ensure future development of any land use throughout the County, will occur such that sensitive cultural and natural resources will not be adversely impacted.

Figure 2: Berkeley County Flood Hazard Areas



2. Hurricanes and Tropical Storms

Hurricanes and tropical storms, as well as tropical depressions, are all tropical cyclones which are defined by the National Weather Service's National Hurricane Center (NHC) as a warm-core non-frontal synoptic-scale cyclone, originating over tropical or subtropical water, with organized deep convection and a closed surface wind circulation about a well-defined center. Once formed, the system is fed by extracting heat energy from the ocean at high temperatures and releasing heat at the low temperatures of the upper troposphere. Damage caused by these systems is mainly associated with rainfall, storm surge and high winds. Storms can last several days, depending on the atmospheric factors, causing sustained flooding and erosion conditions for all jurisdictions within the county.

Hurricanes/tropical storms are classified using the Saffir-Sampson Hurricane Scale and is used by the NHC to predict potential property damage and flooding levels from imminent storms. The scale rates the intensity of hurricanes based on wind speed and barometric pressure measurements. Although the scale assigns a wind speed and surge level to each category of storm, in recent years there has been a recognition that wind speed, storm surge and inland rainfall are not necessarily of the same intensity for a given storm. The Saffir-Simpson Scale is still the most widely used classification tool for hurricanes. A description of the Saffir-Simpson Scale is presented in Introduction 4.

Table 3: Saffir-Simpson Scale and typical damages (Source: NOAA-NHC)

CATEGORY	SUSTAINED WS (MPH)	SURGE (FT)	PRESSURE (MB)	TYPICAL DAMAGE
Tropical Depression	<39	----	----	
Tropical Storm	39-73	----	----	
Hurricane 1	74-95	3-5	>980	Minimal- Damage primarily to shrubbery and trees, to unanchored homes, and to poorly constructed signs. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.
Hurricane 2	96-110	6-8	979-965	Moderate- Major damage to exposed mobile homes and poorly constructed signs. Some damage to roofing materials of buildings, windows and doors. Coast roads and low-lying escape routes inland cut by rising water 2 to 4 hours before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Evacuation of some shoreline residences and low-lying areas required.

CATEGORY	SUSTAINED WS (MPH)	SURGE (FT)	PRESSURE (MB)	TYPICAL DAMAGE
Hurricane 3	111-130	9-12	964-945	Extensive Damage - Large trees are toppled, some structural damage to roofs. Mobile homes destroyed. Structural damage is done to small homes and utility buildings. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Evacuation of low-lying residences possibly required.
Hurricane 4	131-155	13-18	944-920	Extreme Damage - Extensive damage to roofing materials, windows and doors; failure of roofs and walls on many small residences. Complete destruction of mobile homes. Flat terrain 10 feet of less above sea level flooded inland as far as 6 miles. Major damage to lower floors of structures near shore due to flooding Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives.
Hurricane 5	>155	>18	<920	Catastrophic Damage - Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Some complete building failures. Small buildings overturned or blown away. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Massive evacuation of residential areas on low ground within 5 to 10 miles of shore possibly required.

Hurricane track data gathered from the NOAA-Coastal Services Center as part of the South Carolina State Hazard Assessment (performed by the South Carolina Emergency Management Division in conjunction with the USC Hazards Research Lab) indicates that from 1850 to 2007, 40 storms passed directly through Berkeley County and 29 through the county. These included tropical storms, tropical depressions, subtropical storms, subtropical depressions, extra tropical storms and hurricanes. Introduction illustrates the named storm paths for Berkeley County from 1950-2008.

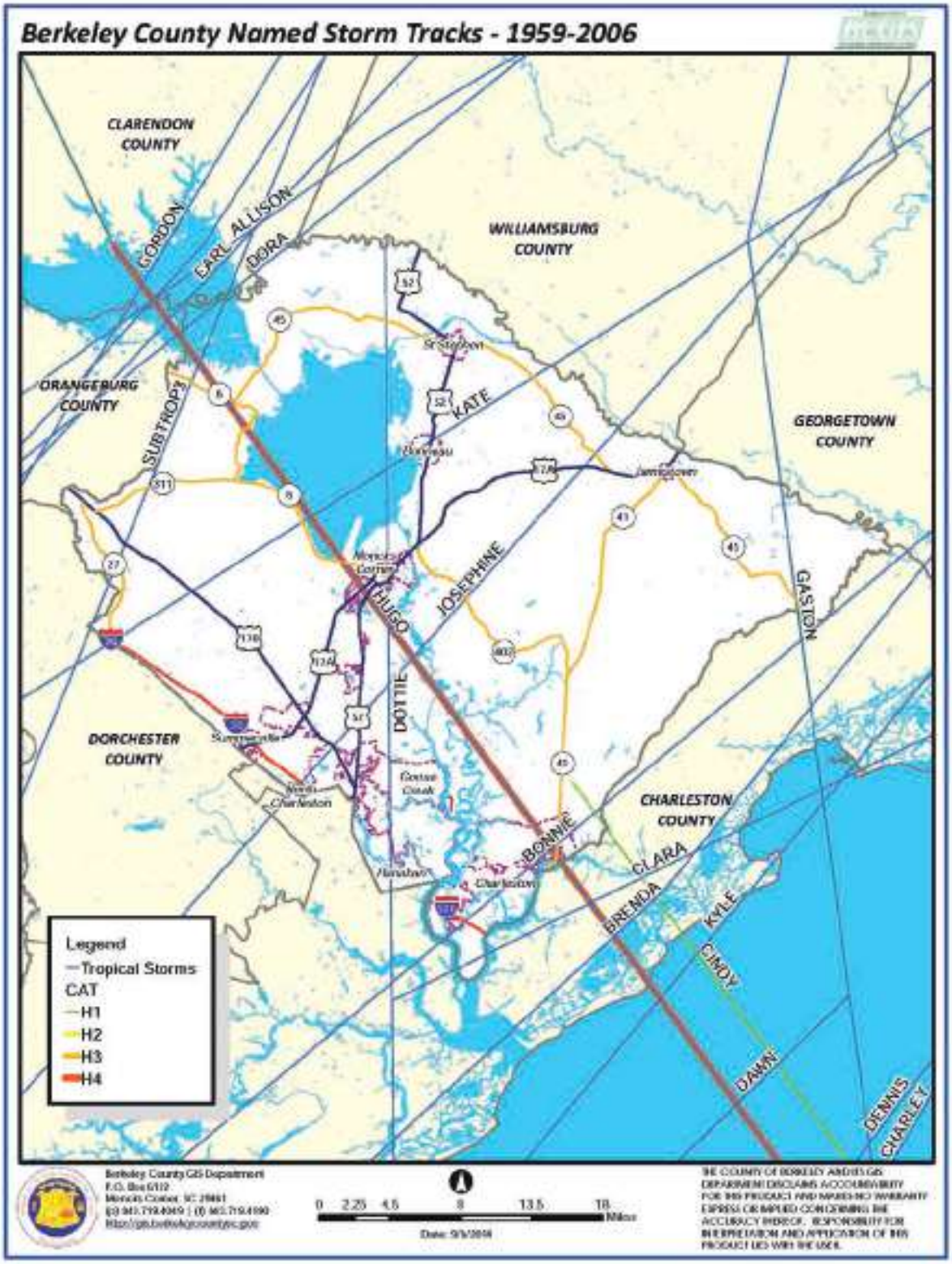
Storms that passed in relatively close proximity to Berkeley County may also have an impact upon those areas. Therefore, the vulnerability analysis considered all storms that pass through or within 100 miles of the county. These data were used to calculate the probability or frequency of occurrence for the county. Events since 2010 are noted below:

AUGUST 26, 2011: *Hurricane Irene passed by to the each of the South Carolina coastline, producing tropical storm force wind gusts. Two trees were reported down in the county due to high winds. A total of $500 in property damage was reported from the 23 hail events No flooding was reported.*

MAY 27, 2012: The remnants of Tropical Storm Beryl produced a 41 mph wind gust in Berkeley County. No flooding was reported.

JUNE 6, 2013: The remnants of Tropical Storm Andrea brought heavy rain and gusty winds to Berkeley County. One tree was reported down along I-26. There was $2,000 in property damage reported in the county due to high winds. No flooding was reported.

Figure 3: Storm tracks passing through Berkeley County



3. Tornadoes

According to the National Weather Service, a tornado is a violently rotating column of air extending from a thunderstorm to the ground. This atmospheric event is caused by the development of thunderstorms in a warm and moist environment. Occasionally tornadoes may accompany tropical storms and hurricanes that move over land. Tornadoes are considered the most destructive of all atmospheric-generated phenomena, with an average of 1200 tornadoes reported a year nationwide. In South Carolina the majority of tornado touchdowns occurred between the months of March and May, during evening hours. On March 28, 1984 the Carolinas received a total of 22 tornadoes, causing 57 deaths, 1,284 injuries, $200 million in damage and 37% of fatalities in mobile homes.

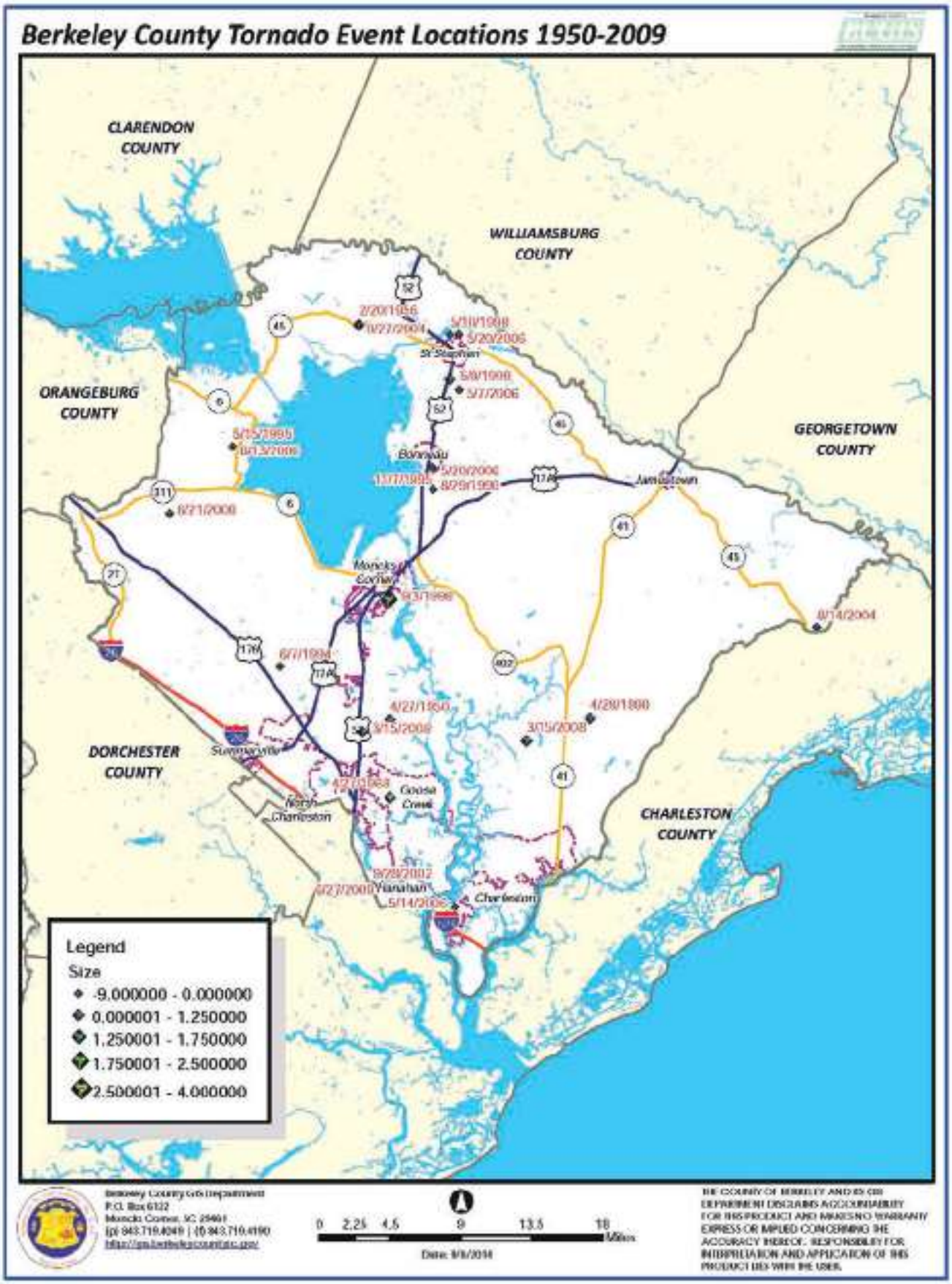
"Dr. T. Theodore Fujita developed a damage scale for winds, including tornadoes, which was supposed to relate the degree of damage to the intensity of the wind. (The Fujita) scale was the result. The Enhanced F-scale is a much more precise and robust way to assess tornado damage than the original. It classifies F0-F5 damage as calibrated by engineers and meteorologists across 28 different types of damage indicators (mainly various kinds of buildings, but also a few other structures as well as trees)" (National Weather Service Storm Prediction Center, www.spc.noaa.gov, 2009.) Introduction below, details the Enhanced Fujita Scale.

Table 4: Enhanced Fujita Tornado Scale (Source: SPC-NOAA)

F NUMBER	FASTEST ¼-MILE (MPH)	3-SECOND GUST (MPH)	EF NUMBER	3-SECOND GUST (MPH)
F0	40-72	45-78	EF0	65-85
F1	73-112	79-117	EF1	86-110
F2	113-157	118-161	EF2	111-135
F3	158-206	162-209	EF3	136-165
F4	207-260	210-261	EF4	166-200
F5	261-318	262-317	EF5	Over 200

Tornado touchdown events reported for Berkeley County are shown in the Introduction. From 1950-May 2014, there have been 30 tornado touchdown events; from 2010 - May 2014, there was only one tornado event in Berkeley County as recorded by NOAA.

Figure 4: Tornado Touchdown Locations for Berkeley County



4. Winter Storms

Winter storms can be very disruptive, particularly in areas where they are not frequent occurrences. While winter storms have had an effect on South Carolina, they occur relatively infrequently compared to areas in the northern United States. These storms can combine different types of precipitation including snowfall and ice storms, as well as high winds, and cold temperatures. They vary in size and intensity and may be accompanied by strong winds that may create blizzard conditions and dangerous wind chills. Heavy snowstorms are those that drop four or more inches of snow within a twelve-hour period. Ice storms may also be dangerous due to the moisture that falls and freezes upon impact causing dangerous conditions for transportation.

Prior to 2014, two of the most notable winter storms in South Carolina history occurred 20 years apart; one on February 8 - 11, 1973 and a second one on March 12 - 14, 1993. In February 1973, more than 18 inches of snow fell across the Lowcountry, and 24 inches in the Upstate, making the 1973 storm the most significant snowstorm to occur in South Carolina. Columbia and Charleston set daily records during the blizzard with 15.7 and 7.1 inches, respectively. The storm of 1993 struck South Carolina from the coast to the mountain with coastal erosion, storm surge, severe thunderstorms, and heavy snowfall. Wind gusts with speeds of 90 mph were observed at Myrtle Beach. Coastal County received little snowfall but did experience the strong winds that accompanied the storm. Thousands of power outages left residents in the dark and cold across the Upstate and in coastal sections where high winds downed trees and power lines. Minimal occurrences have been reported for Berkeley County until January and February 2014 as noted below.

From January 28 - 29, 2014, Southeast South Carolina and Southeast Georgia experienced a Winter Storm when a "A strong but shallow arctic cold front pushed through the region early Tuesday, 1/28. By evening 1/28, a marked wedge regime prevailed, and northerly surface winds had pushed temps to around 32F." The full report is available online from NOAA and the National Weather Service at http://www.weather.gov/media/chs/events/Jan_2014_WinterStorm/EventReview_Jan2014WinterStorm.pdf.

From February 10 - 14, 2014, the state of South Carolina including Berkeley County experienced a severe winter weather event that left the Southeast blanketed by ice and snow. Berkeley County sustained $5.5 Million in losses as a result of the ice storm. The full storm report is available online from NOAA and the National Weather Service at http://www.weather.gov/media/chs/events/Feb_2014_Ice_Storm/Event%20Review_Feb2014IceStorm.pdf.

5. Thunderstorms

Thunderstorms affect relatively small areas when compared with hurricanes, tornadoes and winter storms, but still they can be dangerous. The typical thunderstorm is 15 miles in diameter and can last 30 minutes on average. Thunderstorms formed from a combination of moisture, rapidly rising warm air and a force capable of lifting air such as warm or cold fronts, sea or mountain breezes. They are consider severe if it produces hail at least one inch in diameter, winds of 58 mph or stronger, and/or a tornado.

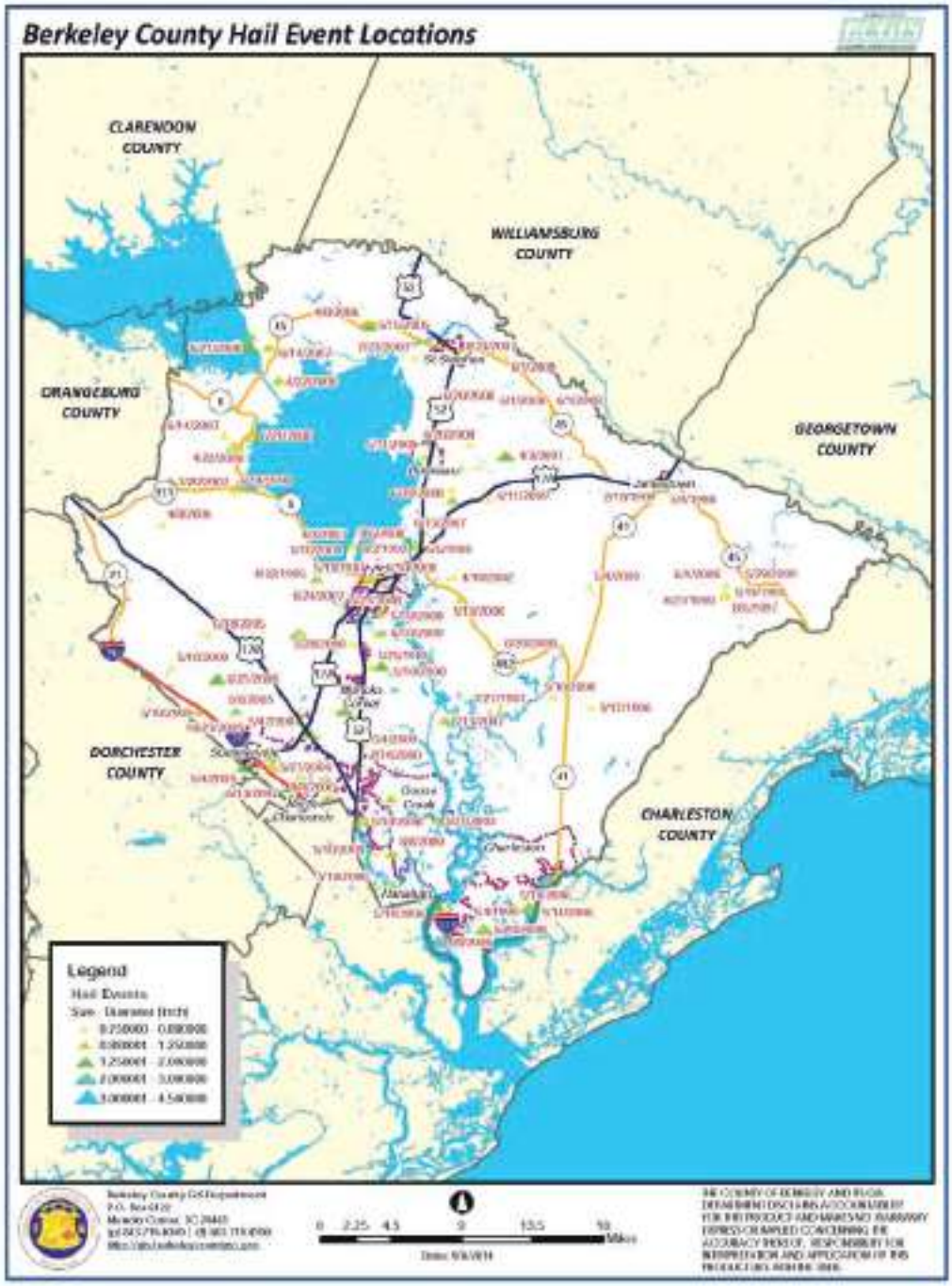
Due to frequent occurrences of thunderstorms, nearly 300 events have been reported for Berkeley County from 1950-May 2014. The extent of thunderstorms affecting Berkeley County could not be shown due to limitations in the spatial data downloaded from the South Carolina Hazards & Vulnerability Research Institute. Since the last plan update in 2010, there have been 54 reports of damaging wind in Berkeley County. The highest estimated wind gust since 2010 was 74 mph. This occurred on July 1, 2012. A large trailer was damaged and trees were blown down near St. Stephen. Property damage was approximately $8,000. No injuries were reported.

6. Hail

Hail forms by the circulation of strong updrafts of warm air and downdrafts of cold air in a thunderstorm. In this process water droplets can be carried by the updrafts well above the freezing level with temperatures below 32°F and freeze. With each trip above and below the freezing level the frozen droplets will add another layer of ice. Those frozen water droplets, with many layers of ice, fall to the ground as hail.

Since the last plan update in 2010, there have been 23 reports of hail in Berkeley County. A total of $500 in property damage was reported from the 23 hail events. The largest hail reported during that time period was on April 9, 2011 near the community of Russellville. 2.50" diameter hail (tennis ball size) was reported there. No damage or injuries were reported.

Figure 5: Hail Event Locations for Berkeley County



7. Wildfires

According to the U.S. Forest Service's Wildland Fire Assessment System, Berkeley County is located in a moderate risk fire danger area. A moderate classification stands for those fires that start from accidental causes, but with the exception of lightning fires in some areas. These fires are not likely to become serious and control should be relatively easy. Generally, there are three major factors to consider in assessing the threat of wildfires to an area: topography, vegetation and weather.

An area's terrain and land slopes affect its susceptibility to wildfire spread. Wildfire travels much faster upslope than it does down slope. Berkeley County is located on the coastal plain, which is characterized by flat terrains, which limits the propagation of fire.

Vegetation and land use is another characteristic that affects the spread of wildfire. In particular, forest/dense wooded areas and grasslands provide readily accessible fuel for wildfires. Besides just the existence of this type of vegetation, its moisture content, is also a significant factor. This is dependent on weather; droughts or dry weather cause vegetation to become dryer and thus serve as a better fuel. There are numerous forested areas and grasslands in Berkeley County considering that the Francis Marion National Forest (251,139 acres) is contain within parts of Berkeley County which are susceptible to wildfires.

Weather is the third factor as high temperatures combined with low humidity offer the most conducive environment for wildfires. Berkeley County weather is considered Subtropical Humid, with high temperatures during the summer. Although, high temperatures are reported for the summer months, this is combined with the high levels of humidity which are not propitious to the ignition and spread of wildfires. However, during drought periods the threat of wildfire increases.

According to the SC State Climatology Office, Berkeley County experienced different levels of drought conditions since 1998. A moderate drought condition was reported for years 1998 and 2000, while a severe condition was experienced during 1999, 2007 and 2008 years. Extreme drought conditions were experienced during 2002 year which caused 4,000 wildfires across the state. These fires damaged or destroyed 77 homes, 120 outbuildings, 75 vehicles and almost 40,000 acres of woods and grasslands (SC Forestry Commission). In Berkeley County, 437 fires were reported which affected approximately 4,958 acres.

Figure 6: Areas of Susceptibility for Wildfires in Berkeley County

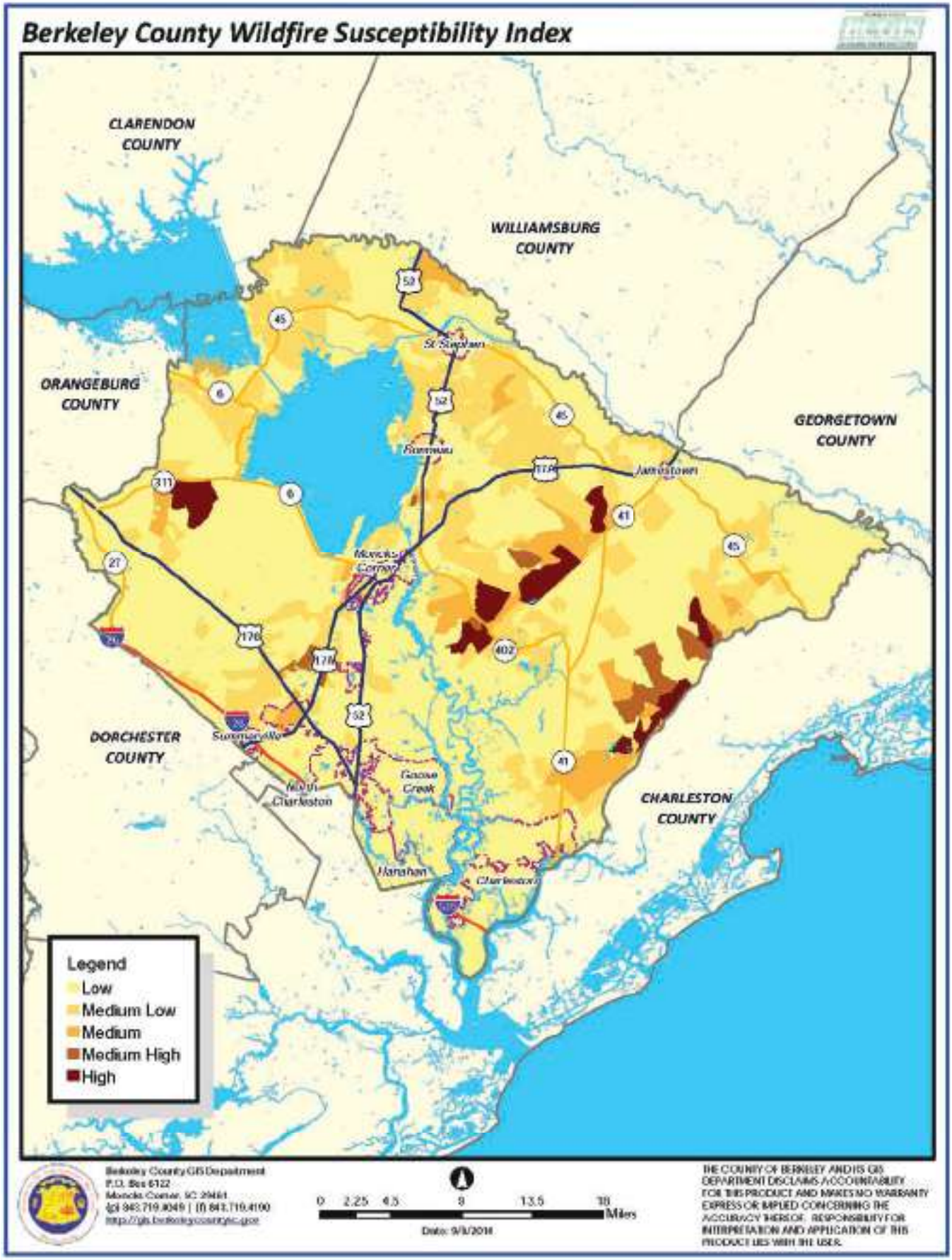
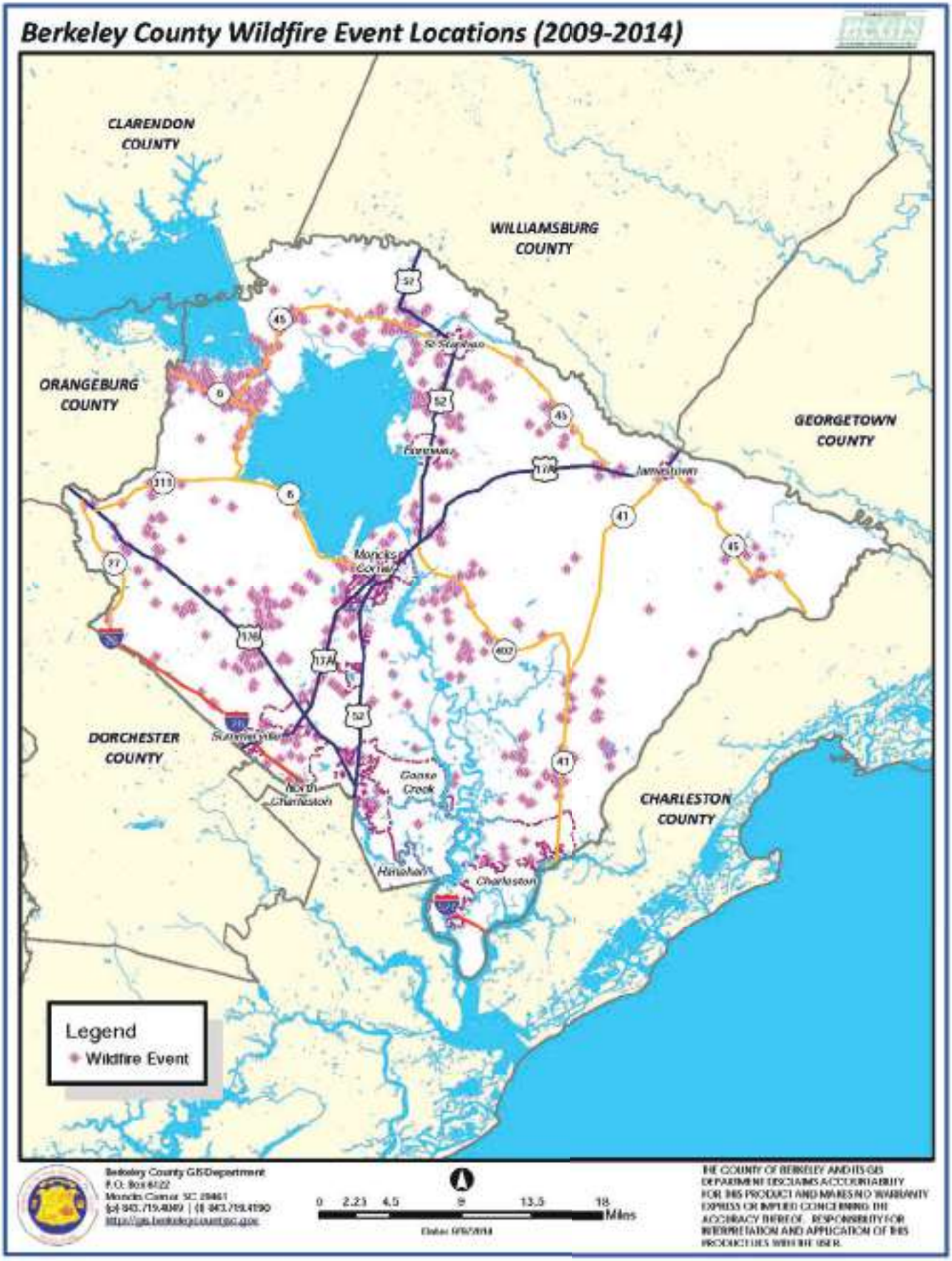


Figure 7: Wildfire Locations in Berkeley County



8. Drought

Drought is caused by lack of precipitation but may be exacerbated by other factors such as high temperatures, high winds, low relative humidity and water consumption rates. Droughts can result in a shortage of water for consumption and can affect hydroelectric power, recreation and navigation. Additionally, severe droughts can lead to significant losses of crops, wildlife and livestock, as well as wildfires, throughout the County.

The Palmer Index is used to measure the dryness of an area. It utilizes a formula consisting of rainfall amounts and temperature levels to create a scale from negative four to positive four, to indicate whether an area is suffering from excessive rainfall or drought. Negative numbers indicate drought occurrences and positive numbers depict excessive rainfall. The Palmer Index is most effective in determining long term droughts that persist over several months and is not effective in measuring short term droughts over a period of weeks. Note the categories below:

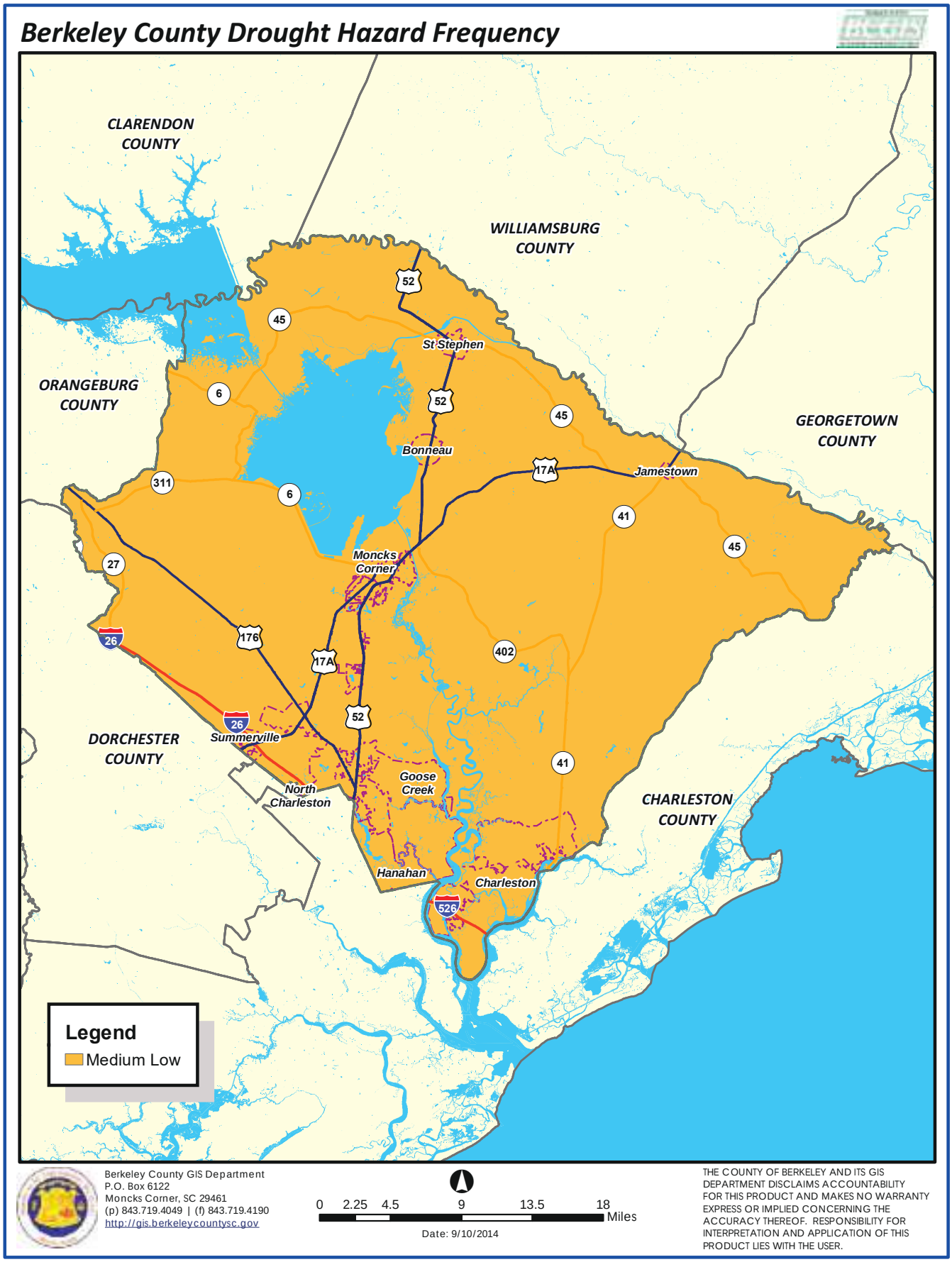
Palmer Drought Severity Index

- Extreme Drought: -4.0 or less
- Severe Drought: -3.0 to -3.9
- Moderate Drought: -2.0 to -2.9
- Near Normal: -1.9 to +1.9
- Unusual Moist Spell: +2.0 to +2.9
- Very Moist Spell: +3.0 to +3.9
- Extremely Moist: +4.0 and above

There are four drought management areas corresponding to the major river basins in South Carolina: Piedmont, Central, Catawba-Pee Dee, and Coastal (SC Department Natural Sources). Berkeley County corresponds to the Coastal Drought Management Area. Several drought events have been reported since 1950 to the present (2009) for Berkeley County. According to SC State Climatology Office, Berkeley County has experienced different level of drought conditions since 1998. A moderate drought condition was reported for years 1998 and 2000, while a severe condition was experienced during 1999, 2007 and 2008 years. Extreme drought conditions were experienced during 2002 year, where the whole state, including the coastal County was classified in extreme drought conditions. The State of South Carolina has had a drought management plan in effect since 1985 that continues to be updated, and also has a State Drought Program Coordinator. Updates are provided continuously by the SC State Climatology Office.

Since the last plan update in 2010, Berkeley County experienced a moderate drought from July of 2011 until June of 2012. There was another period of moderate drought from December 2012 until April 2013.

Figure 8: Berkeley County Drought Hazard Frequency



9. Earthquake

Earthquakes are the results of forces within the Earth's interior that continuously affect the surface of the Earth. The energy from these forces related mainly to the movement of plate tectonics is stored in a variety of ways within the rocks. When energy is released through the faults along the crust of the Earth, an earthquake results. The point on the Earth's surface directly above the focus area is called the epicenter of the earthquake (US Geological Survey: USGS). The severity of an earthquake can be defined by the intensity and magnitude of the event. The seismic hazard is related to the magnitude but also to the phenomena generated by the earthquakes, such as surface rupture, ground motion, ground motion amplification, liquefaction and landslides. Figure 9 (next page) shows the earthquake hazard zones in Berkeley County.

Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. Numerous intensity scales have been developed to evaluate the effects of earthquakes but the one currently used in the United States is the Modified Mercalli (MM) Intensity Scale in Table 5. Conversely, the magnitude is related to the amount of seismic energy released at the hypocenter of the earthquake recorded by a seismograph. While several scales have been defined, the most commonly used is the magnitude local which is used by the Richter scale as seen in Table 6.

Table 6: Modified Mercalli intensity scale

LEVEL	DESCRIPTION
I	Not felt except by a very few under especially favorable conditions.
II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration similar to the passing of a truck. Duration estimated.
IV	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone; many awakened; Some dishes, windows broken; Unstable objects overturned; Pendulum clocks may stop.
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rail bent.
XI	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Source: USGS

Figure 9: Berkeley County Earthquake Hazard Zones

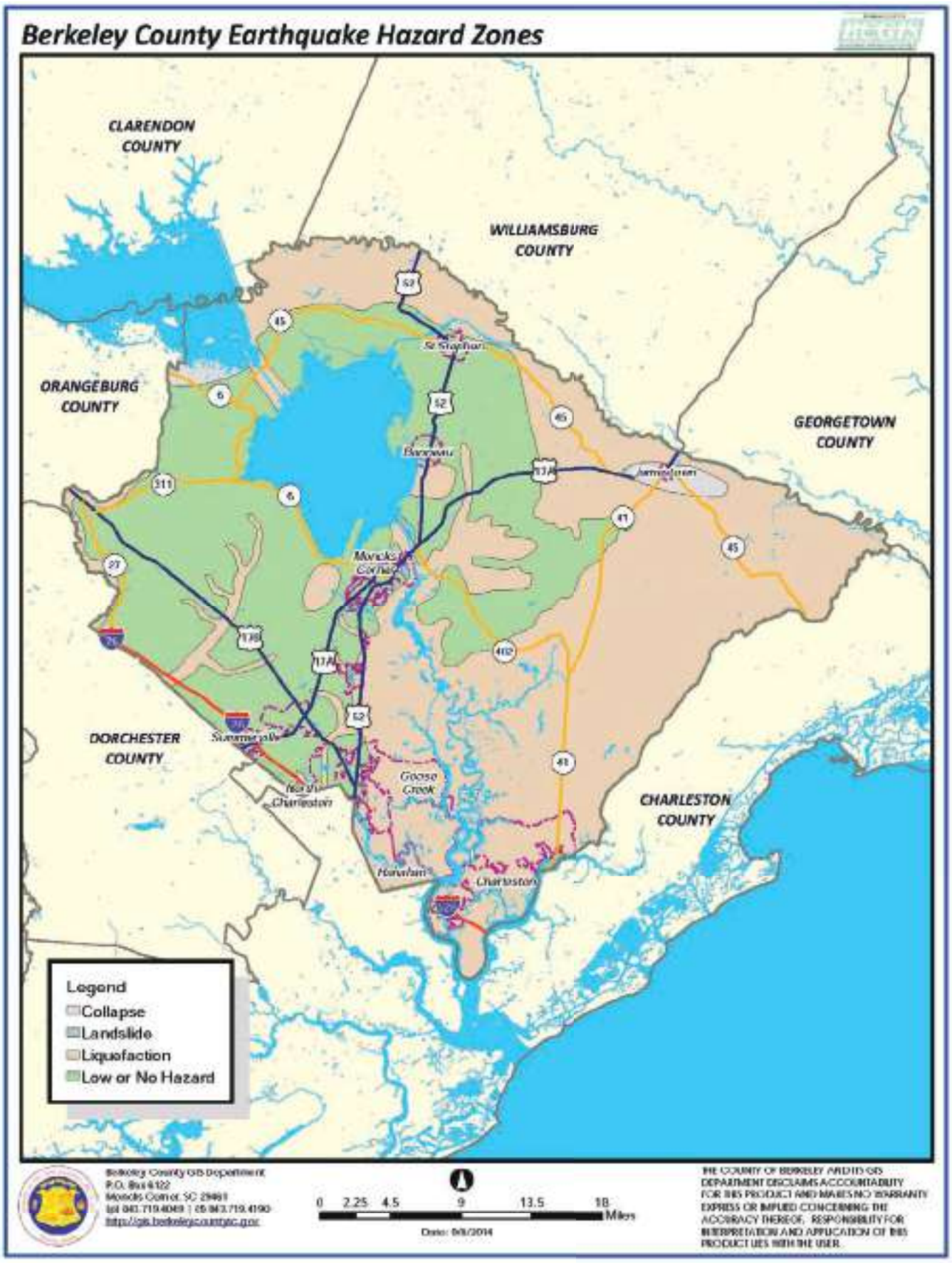


Table 6: Richter Magnitude Scale

MAGNITUDES	DESCRIPTION	EARTHQUAKE EFFECTS	FREQUENCY OF OCCURRENCE
Less than 2.0	Micro	Micro-earthquakes, not felt.	About 8,000 per day
2.0-2.9	Minor	Generally not felt, but recorded.	About 1,000 per day
3.0-3.9	Minor	Often felt, but rarely causes damage.	49,000 per year (est.)
4.0-4.9	Light	Noticeable shaking of indoor items, rattling noises. Significant damage unlikely.	6,200 per year (est.)
5.0-5.9	Moderate	Can cause major damage to poorly constructed buildings over small regions. At most slight damage to well-designed buildings.	800 per year
6.0-6.9	Strong	Can be destructive in areas up to about 160 kilometers (100 mi) across in populated areas.	120 per year
7.0-7.9	Major	Can cause serious damage over larger areas.	18 per year
8.0-8.9	Great	Can cause serious damage in areas several hundred miles across.	1 per year
9.0-9.9	Great	Devastating in areas several thousand miles across.	1 per 20 years
10.0+	Epic	Never recorded; see below for equivalent seismic energy yield.	Extremely rare (Unknown)

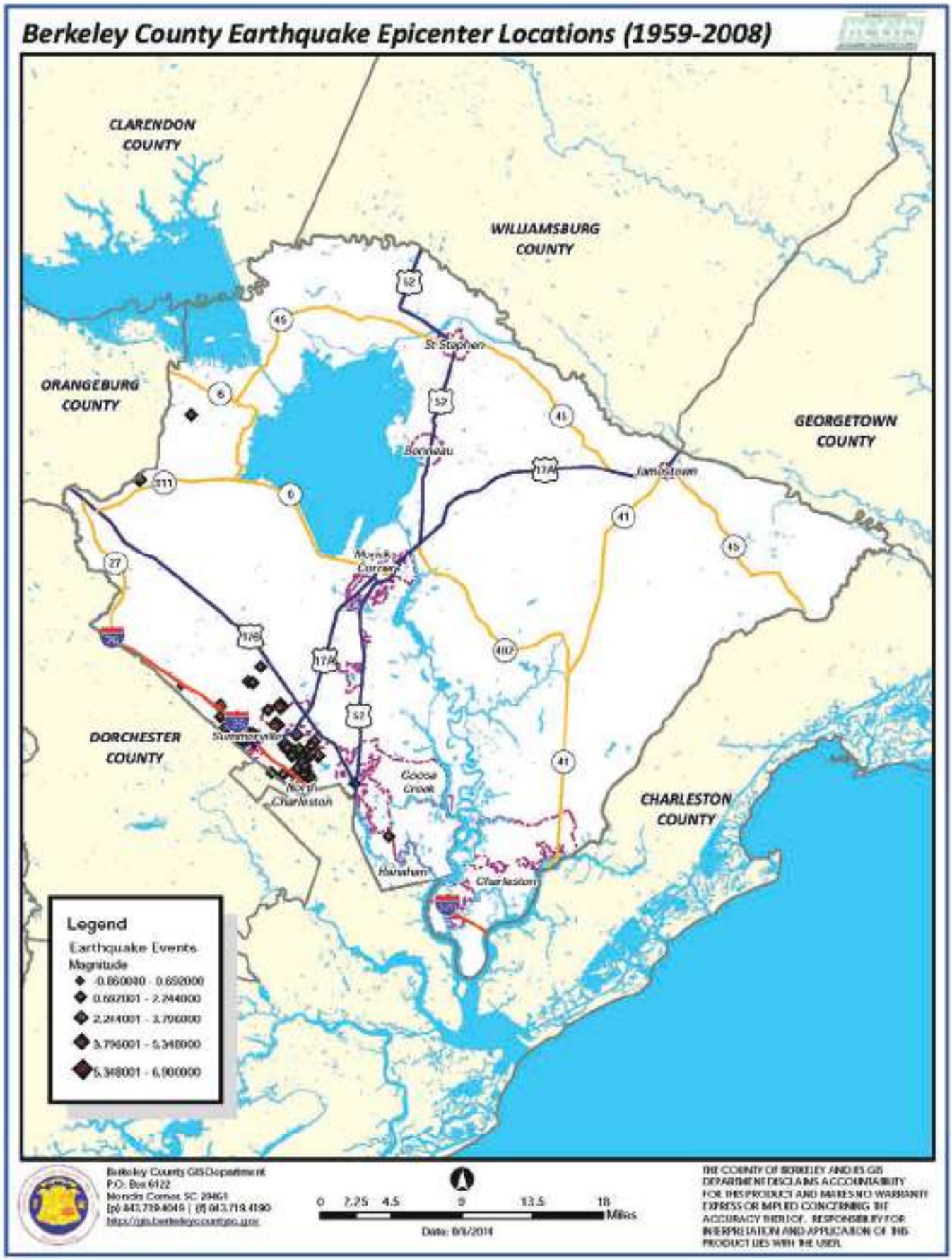
Source: USGS

The USGS rates areas of the United States for their susceptibility to earthquakes based on a ten percent probability of a given peak force (%g for a 1.0 SA) , being exceeded in a 50 year period. Berkeley County's peak acceleration ranges from 60 to 80% g which is considered very significant. Figure 10 provides a map of Berkeley County's earthquake frequency.

Earthquake epicenter location data (gathered from the USC Seismic Network), was collected for the period from 1698 to 2007. These data indicate that 48 events have had their epicenter in Berkeley County. Of these 48 events, only five had magnitudes greater than three, which are considered as minor or light earthquakes with the most recent one occurring in 2003.

Figure 10: Berkeley County Earthquake Frequency

Figure 11: Earthquake Epicenter Locations Registered for Berkeley County

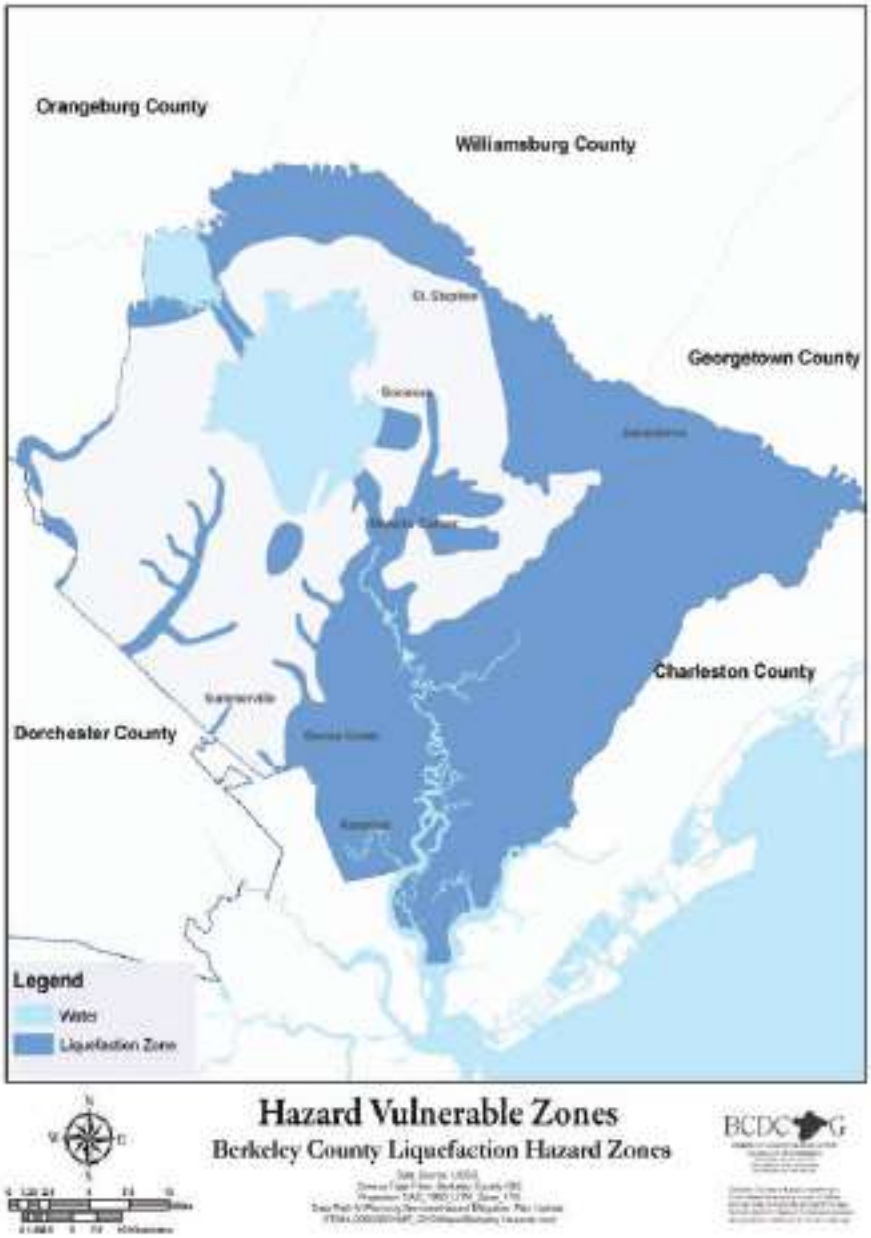


Liquefaction

Liquefaction is the process where soils losses strength and act as liquid instead of solid, amplifying the waves associated to the earthquake. Soft sandy soils can be liquefied by strong ground motion. The effect on structures and buildings can be devastating, and is a major contributor to urban seismic risk. Liquefied soil exerts higher pressure on retaining walls, which can cause them to tilt or slide. This movement can cause settlement of the retained soil and destruction of structures on the ground surface. Berkeley County has a high risk of liquefaction given that most of the soils present in these areas are sandy soils as noted in Figure 13.

The mix of sandy soils and high water tables (typical of the Lowcountry area) increases the probability of soil liquefaction during an earthquake event. A significant percentage of Berkeley County, as seen in Figure 12, is susceptible to the effects of liquefaction.

Figure 12: Berkeley County Liquefaction Zones

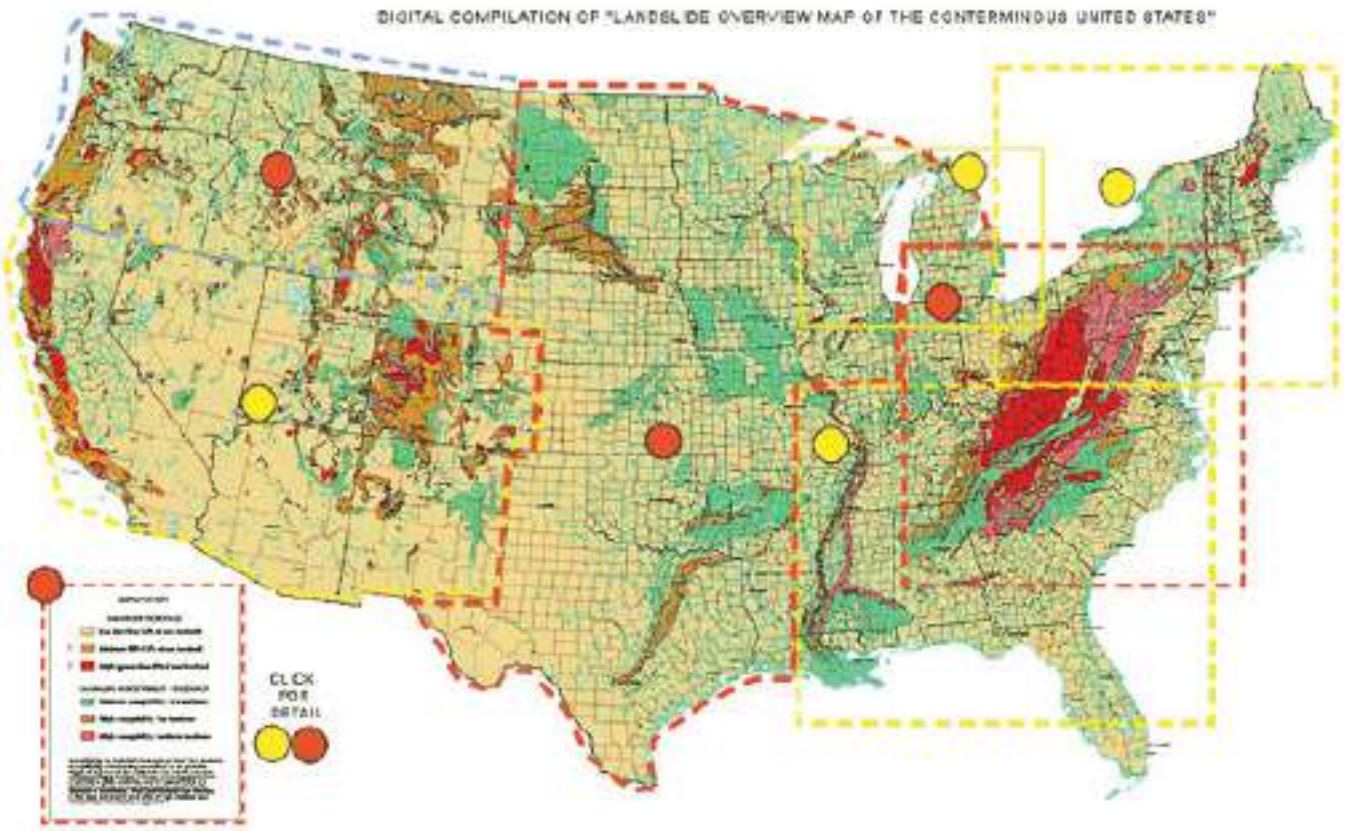


Landslides

Landslides are often prompted by the occurrence of other hazards. The magnitude of an earthquake can cause landslides. Long duration precipitation events and floods create saturated conditions and unstable soils which produce landslides. Landslide events are more common and significant in mountainous areas due to the elevation but also to their soil composition (clay soils are more susceptible to landslides).

The USGS has a National Landslide Hazards Program and has mapped the landslide risk for the conterminous U.S. All of eastern South Carolina is mapped in the low risk area where there is a low landslide incidence that involves less than 1.5 percent of the land area (Figure 13). Given the relatively flat terrain of Berkeley County and its low landslide incidence as mapped by the USGS, landslides are not considered a significant threat to this County.

Figure 13: Landslide Risk Map for the Conterminous U.S.



Tsunamis

Tsunamis are large sea waves generated by earthquakes, volcanic eruptions or large landslides. When a tsunami is generated and makes its way to the shoreline, it can cause extensive damage to nearby structures and infrastructure, as well as significant inland flooding. Much of the damage inflicted by tsunamis is caused by strong currents and floating debris. Tsunamis generally occur in the Pacific Ocean but some occurrences have been reported in Caribbean areas in the Atlantic Ocean. Thus, tsunamis are not considered a major threat along the eastern seaboard of the continental U.S. Given the long distance from coastal areas no tsunamis events have been reported for Berkeley County, no estimated loss values have been reported for these two areas.

10. Dam Failure

A dam failure happens when downstream flooding occurs because of a collapse or failure of an impoundment. Dam failures may be the result of prolonged rainfall and flooding or, because of erosion during very dry conditions. The primary danger associated with a dam failure is the swift, unpredictable flooding of those people or structures immediately downstream from a large hydro dam or several dams in succession.

Berkeley County contains the two (2) largest man-made dams in South Carolina. These dams are routinely inspected for signs of potential emergency and maintained in a safe condition. According to the 1999 Berkeley County Hazard Analysis for Emergency management, "portions of the earthen dam have been recently strengthened to better withstand an earthquake." This report contends that the Santee North Dam has remote tail-water and seismic sensors to alert system controllers of problems. The report also states that the only instance of problem with the system was the failure of a water tunnel control gate in July 1983. This failure may have caused concern in the community but did not pose a serious threat. Since no incidents have been reported in Berkeley County historical estimated loss values are not available. Therefore, no severity or magnitude could be estimated for the county. A map of the Berkeley County DHEC State permitted dams is noted below in Figure 14 (next page).

Hazardous material releases or spills mainly occur along transportation routes or at hazardous storage locations. The major roads in Berkeley County include Interstates 26 and 526, U.S. Highways 176 and 52, and S.C. Highways 27, 41, 45, 6 and 402. Interstate 26 and I-526 are the most frequently used routes to transport materials to and from points within the County' industrial and urban areas.

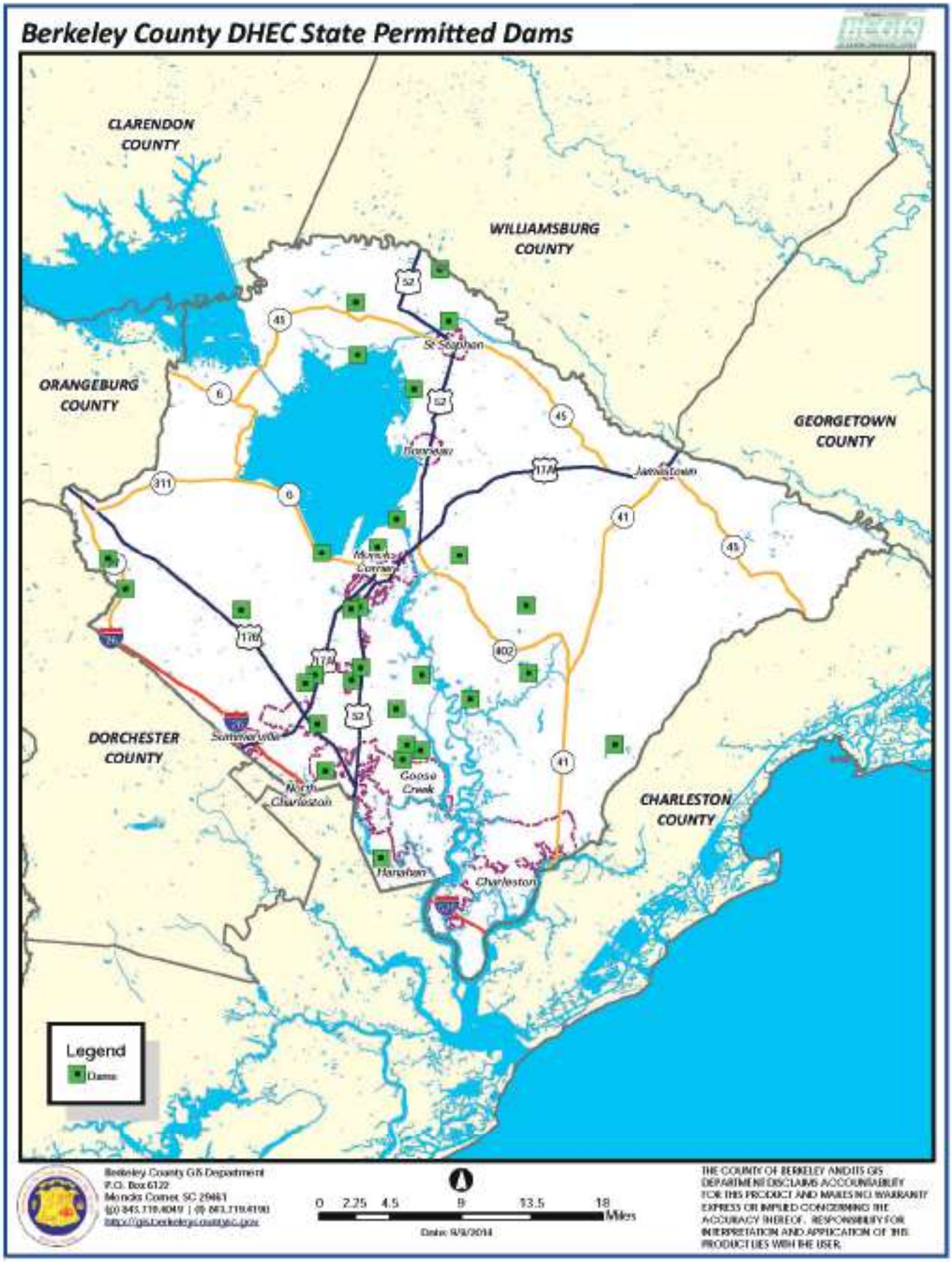
Two major railway lines run south of Berkeley County, one parallel to U.S. Highway 52 towards Williamsburg County and the second one perpendicular to S.C. Highway 402 towards Georgetown County. These railway pathways connect with the east coast corridor railway traffic which provides access to different areas along the coast and the State of South Carolina.

There are several facilities that generate or store hazardous materials that are required to be register with the U.S. Environmental Protection Agency (EPA). Some of the common types of facilities that store or generate hazardous materials include the following:

- Municipal Solid Waste Landfills (MSW)
- Hazardous Waste Generators (HAZGEN)
- Radiological Waste Generators (RAD)
- Superfund Sites
- Toxic Release Inventory Sites
- Treatment, Storage and Disposal Sites (TSD)

This information was obtained through the Hazards & Vulnerability Research Institute (HVRI). No superfund sites were identified for Berkeley County. The most prevalent facilities, Berkeley County are HAZGEN and TRI facilities; the majority of HAZGEN (47) and TRI (22) facilities are concentrated in areas such as Goose Creek, Hanahan and Moncks Corner. There are two RAD facilities in or around Berkeley County with one located off I-26 in Summerville and the other located at the Charleston Naval Weapons Station. Most of the TSD sites are also within the limits of the Charleston Naval Weapons Station.

Figure 14: Berkeley County DHEC State Permitted Dams



VULNERABILITY ASSESSMENT

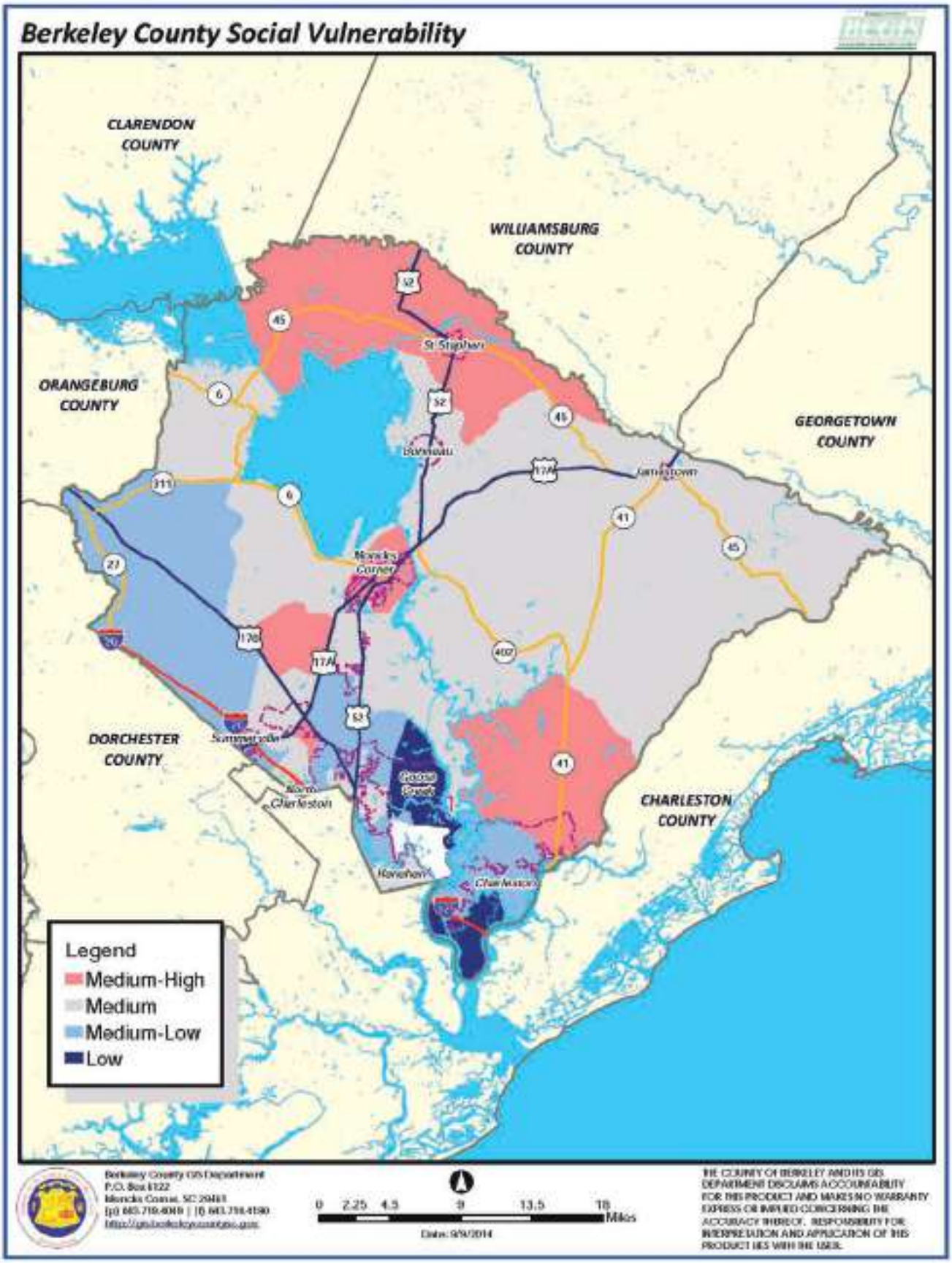
I. INTRODUCTION

The Berkeley County GIS staff conducted numerous vulnerability assessments for Berkeley County during the planning process. These assessments were created through research done on each jurisdiction and the use of Geographic Information System (GIS) technology. These assessments build on the identification of hazards in the community and the risk that the hazards pose to the community. The vulnerability assessment process examines more specifically how the facilities, systems and jurisdictions of Berkeley County would be damaged or disrupted by the hazard events identified in the Hazard Identification and Analysis.

The vulnerability assessment requires the integration of different components such as hazard identification and occurrence, identification of vulnerable populations and the integration of vulnerable population and potential hazards in a spatial context. The integration of these components provides a better understanding of which areas are more susceptible to be affected by the occurrence of single or multiple hazards. This information is important to implement practices aimed at decreasing future impacts and increasing resilience, which leads to fewer persons in potential danger.

To estimate the vulnerability of both the incorporated and unincorporated areas of Berkeley County different factors were evaluated. A social vulnerability analysis was created using information such as population, race, and house values. Demographic information was obtained from the 2010 U.S. Census Bureau. Those variables were combined to get a final vulnerable social score that determine the socially vulnerable areas. The socially vulnerable population map is detailed in the figure on the next page.

Figure 15: Berkeley County Social Vulnerability



To estimate the vulnerability to natural hazards different variables were evaluated including hurricane (storms), tornado, hail, earthquake, liquefaction, flood events, winter storms and fire events. Probability of occurrence or frequency was calculated using historical records gathered through the USC Hazard and Vulnerability Research Institute and the College of Charleston Hazards Lab. This information was further process and combined together to obtain a final probability value that integrated all natural hazards mentioned previously. This information provided us with those areas more likely to be affected by one or multiple hazards in the area. Natural hazard vulnerability maps are presented below. Natural hazard and socially final vulnerability values were combined to obtain a Final Place Vulnerability Zone Map for the County. The map below represents an overall picture of hazard risk in relation to geographic location.

II. GEOGRAPHIC PROFILES

Berkeley County is located in the southeastern part of South Carolina. The county has a land area of approximately 1,100 square miles. The county includes many natural resources that give it a rural character. In 1999, over 80% of the County's land areas were considered agricultural or forest. Although agriculture is practiced in Berkeley County, the majority of this 80% is tied into lakes, forests and swamps. Lake Moultrie and Lake Marion make up a large portion of the County and have a tremendous effect on its economy and quality of life.

Berkeley County's climate along with the clean air, high water quality, fertile soils and minerals make it an attractive place to visit and live. There are six incorporated jurisdictions in Berkeley County: the City of Goose Creek, the City of Hanahan, the Town of Bonneau, the Town of Jamestown, the Town of Moncks Corner and the Town of St. Stephen. Berkeley County includes a portion of the Town of Summerville. The County also includes the heavily developed area of Daniel Island, which has been annexed into the City of Charleston.

DEMOGRAPHIC OVERVIEW

As of 2010, the total Berkeley County population was 177,843, a growth of 24.67% since 2000. This population growth rate is higher than the state average rate of 15.29%. The Berkeley County median house value is $150,900 in 2008 - 2012 and has grown by 65.28% since 2000. Between 2010 and 2012, Berkeley County was the state's fastest growing county and the 35th fastest growing county in the country, growing 6.7%.

POPULATION

Table 7: Berkeley County Population (Source: U.S. Census Bureau, 2000 and 2010)

PLACE	2000 POPULATION	2010 POPULATION
Town of Bonneau	354	487
City of Goose Creek	29,208	36,145
City of Hanahan	12,937	12,937
Town of Jamestown	97	72
Town of Moncks Corner	5,952	7,910
Town of St. Stephen	1,776	1,697

Table 8: Berkeley County Population (Source: U.S. Census Bureau, 2010)

BERKELEY COUNTY POPULATION BY SEX/AGE	
Male	88,729
Female	89,114
Under 18	44,962
18 & over	132,881
20 - 24	13,378
25 - 34	26,379
35 - 49	37,394
50 - 64	32,572
65 & over	17,794

BERKELEY COUNTY POPULATION BY ETHNICITY	
Hispanic or Latino	10,755
Non-Hispanic or Latino	167,088

BERKELEY COUNTY POPULATION BY RACE	
White	118,232
African American	44,514
Asian	4,046
American Indian and Alaska Native	1,067
Native Hawaiian and Pacific Islander	184
Other	4,990
Identified by two or more	4,810

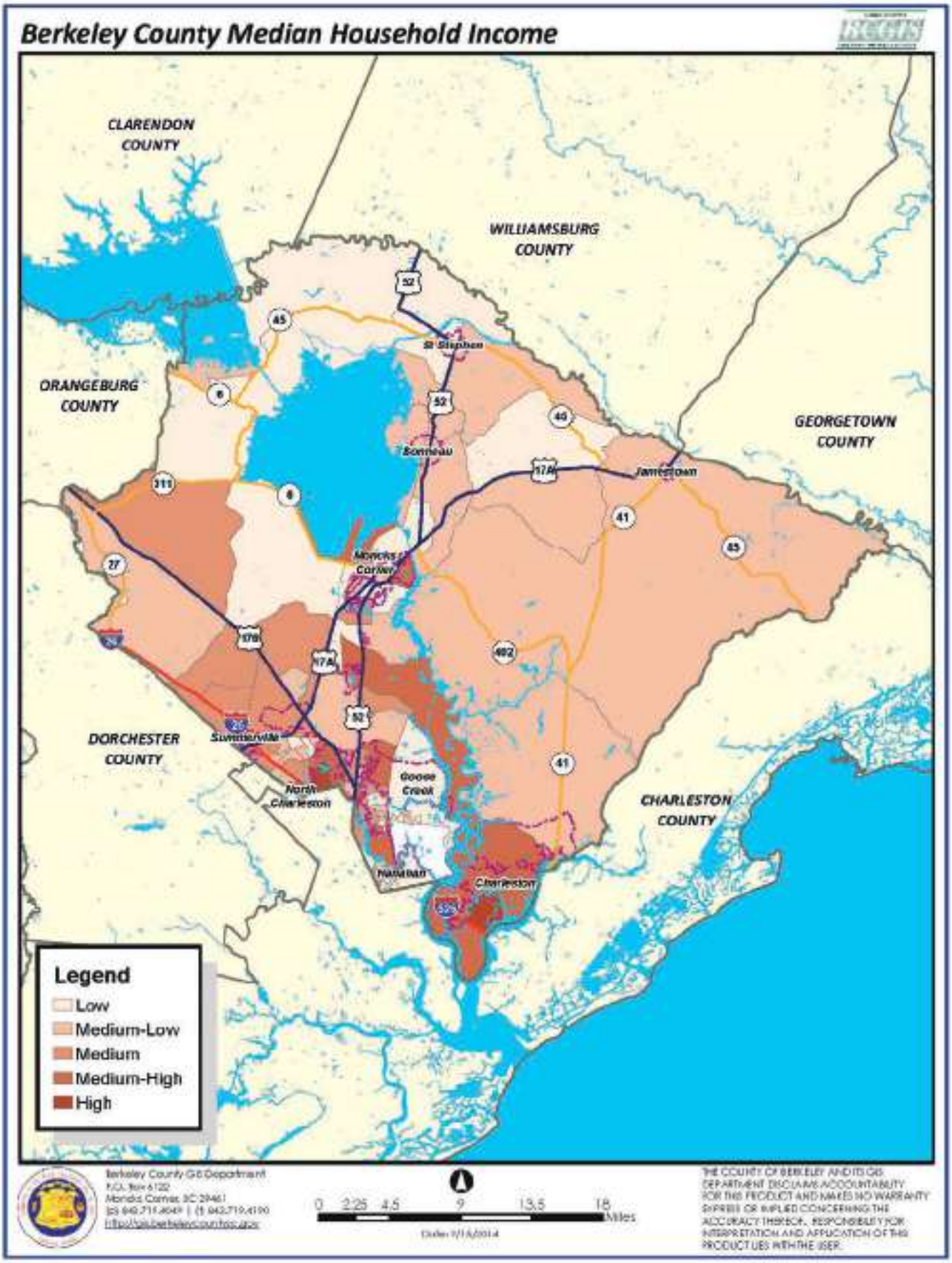
BERKELEY COUNTY HOUSING STATUS(IN HOUSING UNITS UNLESS NOTED)	
Total	73,372
Occupied	65,419
Owner-occupied	47,381
Population in owner-occupied(number of individuals)	126,050
Renter-occupied	18,038
Population in renter-occupied(number of individuals)	48,051
Households with individuals under 18	24,863
Vacant	7,953
Vacant: for rent	2,326
Vacant: for sale	1,328

ECONOMIC PROFILE

Berkeley County is home to major international companies such as Google, DuPont, Nucor, Alcoa and Blackbaud. In May of 2015, Volvo Cars announced that it had chosen Berkeley County as the home for its first American factory. Volvo officials say the $500 million facility will produce up to 100,000 cars per year, and could create up to 4,000 jobs in the area in the coming years. Construction on the facility is set to begin in fall 2015, with the first vehicles expected off the assembly line in 2018.

According to the 2010 US Census, 74,981 residents participated in the labor force in 2010. In 2013, the SC Department of Employment and Workforce noted that the category with the highest employment was the Manufacturing Sector with Professional, Scientific and Technical Services second. The Berkeley County median household income is $51,476 in 2008 - 2012 and has grown by 28.99% since 2000; the map on the next page illustrates where the population is located by household income.

Figure 16: Berkeley County Median Household Income



NATURAL, HISTORIC AND CULTURAL RESOURCES

The rural character of Berkeley County is a result of the large number of natural resources in the County. The County's natural resources include: the Francis Marion National Forest, the Santee Cooper Lakes, the Cooper River, the Wando River, Four Holes Swamp, Dean Swamp and Wassamassaw Swamp. These resources contribute to the recreational industries by attracting hunters and fishermen from all over the United States. The County also contains several other sites named as nature feature sites by the SC Department of Natural Resources Heritage Trust Program: the Bird Island Rookery, Stoney Landing, and Westvaco Eagle Nest.

Berkeley County also contains several mineral resources. The large Santee Limestone deposit located in the County is the only "viable mining deposit in the State of South Carolina. (Berkeley County Comprehensive Plan, 1999) The soils in Berkeley County also contain an abundance of sand, gravel, clay and phosphate.

Water resources are also abundant in Berkeley County. The County is part of three different watersheds: the Ashley-Cooper Watershed, the Edisto Watershed and the Santee Watershed. Berkeley County also contains two lakes: Lake Marion and Lake Moultrie.

Berkeley County also contains a number of valuable cultural and historic resources and activities. There are five properties within the county that are designated National Historic Landmarks. Another 23 properties are listed on the National Register for Historic Places. There are also 30 other properties that are eligible to be included on the National Register of Historical Places. Along with these historic sites, there are 39 properties that are considered archaeological sites, including Cypress Gardens, Hagan Plantation and Mepkin Abbey, that are being investigated for inclusion on the National Register.

HAZARD PRONE LOCATIONS

Berkeley County contains limestone deposits. Although these deposits are positive mineral resources, they do make the County's soils more susceptible to sinkholes and flooding. This susceptibility depends on the limestone type and depth from the surface.

As noted in the Berkeley County Hazard Vulnerability map, the county is also vulnerable to a wide array of hazards including but not limited to hurricanes, tornadoes, hail, earthquake, liquefaction, fire, floods and winter storms. The degree of vulnerability varies from location to location throughout the County, ranging from the lowest probability of occurrence of 0% to the highest vulnerability (100%). According to this analysis, the most vulnerable areas based on natural hazards are the Cities of Goose Creek and Moncks Corner and the Town of Bonneau.

Floods

The flood hazard map shows that Berkeley County is vulnerable to flooding along the low-lying areas adjacent to rivers, streams and lakes. The northern edge of the County is particularly vulnerable to flooding due to the presence of the Santee River. Southern portions are highly vulnerable due to their proximity to coastal areas directly influenced by tides.

Hurricanes

According to the previous hurricane hazard zone map, Berkeley County is particularly vulnerable to storms (i.e. hurricanes and tropical storms). The most vulnerable areas in the County are the southern coastal areas, in particular Charleston (Daniel Island), Hanahan, Goose Creek, and the northeastern portions including Jamestown.

Tornadoes

Based on the tornado hazard zone analysis, the central northern portions of the County are more vulnerable to tornadoes, particularly Bonneau, Moncks Corner, St. Stephen and Goose Creek areas.

Winter Storms

Winter storms, although rare occurrences in the southern coastal plain are spatially diverse. The occasional snow and/or ice storm adversely affects all local jurisdictions throughout the County, especially with regard to vehicular transportation. The absence of public snow and ice surface treatment and/or removal equipment causes major travel delays and slows traffic movement on interstate highways, major and minor arterials. While disruptive, no property damage has been reported after the four (4) most recent storm events (2000-2010) or since 1950.

Thunderstorms

Thunderstorms and high winds are the most frequent of local weather events. According to NCDC records, Summerville, Moncks Corner, and Goose Creek are somewhat more susceptible to damage caused by high winds and lightning strikes.

Hail

According to the hail hazard zone information, the central northern and southern portions of Berkeley County are more vulnerable to hail, in particular Bonneau, Moncks Corner, Goose Creek, and St. Stephen areas.

Wildfires

According to fire hazard zones analysis, the central northwestern portions of the County are more susceptible to fire, in particular the Town of Bonneau and City of Moncks Corner areas.

Droughts

Historically, all jurisdictions within Berkeley County may expect a maximum drought of Palmer Index -2 in any given year. Agricultural operations in the rural portions of the County are more susceptible to crop damage, caused by drought, when compared to urbanized areas.

Earthquakes

Based on the earthquake hazard zones analysis, the southwestern portion of Berkeley County is more vulnerable to earthquake events. Areas like Summerville, Goose Creek and Hanahan are at higher risk.

Liquefaction

According to liquefaction information, the central, southern and northeastern portions of the County are highly susceptible to the adverse effects of liquefaction, in particular Jamestown, Goose Creek, Hanahan and Moncks Corner areas

Dam Failure

In 1983, hundreds of people in Berkeley County were evacuated after a leak in the Pinopolis Dam was discovered. No other dam failure events have been reported for Berkeley County. Based upon the dam locations of Berkeley County the most vulnerable jurisdictions are: Moncks Corner, Goose Creek, and Hanahan; of these the Town of Moncks Corner is at greater risk due to its close proximity to the Pinopolis Dam.

III. SUMMARY OF VULNERABILITY

A summary of the level of vulnerability for each jurisdiction, based upon historical occurrences of natural hazards by jurisdiction is presented below for Berkeley County. Based upon these historic events (1950-May 2014), vulnerability categories are listed as High (H), Moderate (M), Somewhat (S), and Low (L). High meaning 75 to 100% potential loss of the affected structures, Moderate 50 to 75%, Somewhat 25 to 50%, and Low 0 to 25%, potential loss of affected structures.

Table 9: Summary of vulnerability by jurisdiction to natural hazards for Berkeley County

NATURAL HAZARD TYPE	JURISDICTION							
	BONNEAU	CHARLESTON	GOOSE CREEK	HANAHAN	JAMESTOWN	MONCKS CORNER	ST. STEPHEN	SUMMERVILLE
Floods	M	H	M	M	M	M	M	H
Hurricanes/TS	S	H	M	H	H	S		H
Tornadoes	H	L	L	L	L	M	M	L
Winter Storms	L	L	L	L	L	L	L	L
Thunderstorms	L	L	L	L	L	L	L	L
Hail	H	S	H	M	L	H	M	M
Wildfires	H	L	S	L	L	M	M	M
Droughts	L	L	L	L	L	L	L	L
Earthquakes/ Liquefaction	L	L	M	S	L	L	L	H
Dam Failure	L	L	L	L	L	L	L	L

*Vulnerability Categories: H=High; M=Moderate; S=Somewhat; L=Low

1. SUMMARY of 2015 HAZUS Simulation Reports Using 2010 Census Data

Several HAZUS simulations were run to estimate damage by building type for Berkeley County. Simulations were run for hurricane, earthquake and flood scenarios (full reports are in the Appendix). Structural information was available in a census tract basis that provides information about the building type and occupancy class. This information was incorporated into this plan to provide a general idea of the economic loss that may be experience if one of these scenarios occurs. HAZUS dollar exposure information estimated replacement costs based on structure classification. The full reports are available in the document Appendix.

The estimate of social and economic impacts contained in the reports were produced using HAZUZ loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation techniques. There may, therefore, be significant difference between the modeled result contained in the reports and the actual social and economic losses following a specific event.

HAZUS HURRICANE EVENT REPORT SUMMARY

The geographical size of the Berkeley County is approximately 1,100 square miles and contains 45 Census tracts. There are over 65 thousand households with a total population of 177, 843 as noted in the 2010 Census.

There are an estimated 65 thousand buildings in the county with a total building replacement value (excluding contents) of 16,346 million dollars (2010 dollars). Approximately 99% of the buildings (and 85% of the building values) are associated with residential housing.

General Building Stock

HAZUS estimates that are 65,694 buildings in the region which have an aggregate total replacement value of 16,346 million (2006 dollars). Table 10 (see next page) presents the value with respect to the general occupancies.

Table 10: General Building Stock (2006)

OCCUPANCY	EXPOSURE ($1000)	PERCENT OF TOTAL
Residential	13,958,607	85.40%
Commercial	1,451,772	8.90%
Industrial	547,157	3.30%
Agricultural	37,176	0.20%
Religious	192,125	1.20%
Government	51,723	0.30%
Education	107,627	0.70%
TOTAL	***16,346,187***	***100.00%***

HAZUS used the Hurricane Hugo scenario with a maximum peak gusts in the study area of 133 mph to determine loss estimates for the following report.

HAZUS estimates that in this storm scenario, about 15,915 buildings will be at least moderately damaged. This is over 24% of the total number of buildings in the area. There an estimated 1,528 buildings that will be completely destroyed the table below summarizes the expected damage by general building type.

Table 11: Expected Building Damage by Building Type

EXPECTED BUILDING DAMAGE BY BUILDING TYPE										
Bldg. Type	None Count	%	Minor Count	%	Mod. Count	%	Severe Count	%	Destruction Count	%
Concrete	52	30.49	38	22.3	64	37.26	17	9.92	0	0
Masonry	1671	36.18	1409	30.5	1196	25.9	299	6.84	43	0.93
Manuf. Home	13691	90.13	539	3.55	584	3.85	84	0.55	292	1.92
Steel	175	36.75	95	20	136	28.62	68	14.34	1	0.29
Wood	16224	35.89	18509	40.9	7831	17.32	1825	4.04	823	1.82

Building-Related Losses

The building related losses are broken into two categories: direct property damage losses and business interruption losses. The direct property damage losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the hurricane. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the hurricane.

The total property damage losses were 2,438 million dollars, 2% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 88% of the total loss.

Shelter Requirement

HAZUS estimates the number of households that are expected to be displaced from their homes due to the hurricane and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 3,519 households to be displaced due to the hurricane; of these, 874 people (out of a total population of 177,843) will seek temporary shelter in public shelters.

Debris Generation

HAZUS estimates the amount of debris that will be generated by the hurricane. The model breaks the debris into four general categories: a) Brick/Wood, b) Reinforced Concrete/Steel, c) Eligible Tree Debris, and d) Other Tree Debris. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 3,085,778 tons of debris will be generated. Of the total amount, 2,697,654 tons (87%) is Other Tree Debris. Of the remaining 388,124 tons, Brick/Wood comprises 45% of the total, Reinforced Concrete/Steel comprises of 1% of the total, with the remainder being Eligible Tree Debris. If the building debris tonnage is converted to an estimated number of truckloads, it will require 7,123 truckloads (at 25 tons/truck) to remove the building debris generated by the hurricane. The number of Eligible Tree Debris truckloads will depend on how the 210,044 tons of Eligible Tree Debris are collected and processed. The volume of tree debris generally ranges from about 4 cubic yards per ton for chipped or compacted tree debris to about 10 cubic yards per ton for bulkier, uncompacted debris.

2. Social Impact

HAZUS EARTHQUAKE EVENT REPORT SUMMARY

The most powerful earthquake in the vicinity was the Charleston earthquake of 1886 which had a magnitude (ML) of 6.9. A scenario was performed based on that event using the same magnitude.

General Description of Impacts

There are an estimated 65 thousand buildings in the county with a total building replacement value (excluding contents) of 16,346 (millions of dollars). Approximately 99.00 % of the buildings (and 85.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 2,204 and 2,654 (millions of dollars).

Building Inventory

HAZUS estimates that there are 65 thousand buildings in the county which have an aggregate total replacement value of 16,346 (millions of dollars). In terms of building construction types found in the county, wood frame construction makes up 69% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

HAZUS breaks critical facilities into groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 0 hospitals in the county with a total bed capacity of 0 beds. There are 50 schools, 23 fire stations, 3 police stations and 1 emergency operation facilities. The inventory also includes 523 hazardous material sites, 0 military installations and 0 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within HAZUS, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications.

The total value of the lifeline inventory is over 4,858.00 (millions of dollars). This inventory includes over 350 kilometers of highways, 186 bridges, and 1,075 kilometers of pipes.

General Building Stock Building Damage

HAZUS estimates that about 37,726 buildings will be at least moderately damaged. This is over 57.00 % of the buildings in the region. There are an estimated 10,990 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS technical manual. The table below summarizes the expected damage by general building type.

Table 12: Building Damage by Building Type

EXPECTED BUILDING DAMAGE BY BUILDING TYPE										
BUILDING TYPE	NONE COUNT	%	MINOR COUNT	%	MOD. COUNT	%	SEVERE COUNT	%	DESTRUCTION COUNT	%
Concrete	6	.04	5	.04	15	.10	25	.23	95	.086
Masonry (precast, RM, URM)	537	3.52	408	3.21	661	4.38	797	7.21	2,387	21.72
Manf. Home	2,049	13.42	1,747	13.75	3,438	21.94	3,709	33.53	4,247	38.65
Steel	24	.16	21	.17	62	.39	97	.88	268	2.44
Wood	12,656	82.91	10,526	82.87	11,487	73.29	6,458	58.38	823	1.82

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with the inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of an earthquake.

The total building-related losses were 7,487.24 (millions of dollars); 12 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 72 % of the total loss.

Shelter Requirement

HAZUS estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 12,098 households to be displaced due to the earthquake; of these, 7,601 people (out of a total population of 177,843) will seek temporary shelter in public shelters.

Casualties

HAZUS estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not
- promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Debris Generation

HAZUS estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 2.28 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 44.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 91,040 truckloads (at 25 tons/truck) to remove the debris generated by the earthquake.

HAZUS FLOOD EVENT REPORT SUMMARY

For the HAZUS Flood report, the 100 year flood summary was utilized and includes data from the 2010 Census. The geographical size of the region is 1,219 square miles and contains 5,717 census blocks. The region contains over 65 thousand households and has a total population of 177,843 people (2010 Census Bureau data).

General Building Stock

HAZUS estimates that there are an estimated 65,694 buildings in the region with a total building replacement value (excluding contents) of 16,346 million dollars (2010 dollars). Approximately 98.65% of the buildings (and 85.39% of the building value) are associated with residential housing.

Essential Facility Inventory

For essential facilities, there are no hospitals in the region with a total bed capacity of no beds.

There are 50 schools, 23 fire stations, 3 police stations and 1 emergency operation center.

General Building Stock Damage

HAZUS estimates that in the flood event scenario, about 863 buildings will be at least moderately damaged. This is over 21% of the total number of buildings in the scenario. There are an estimated 258 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS Flood Technical Manual. The table on the following page summarizes the expected damage by building type.

Table 13: Building Damage by Building Type

EXPECTED BUILDING DAMAGE BY BUILDING TYPE										
Building Type	1-10 Count	%	11-20 Count	%	21-30 Count	%	31-50 Count	%	51+ Substantially Count	%
Concrete	0	0	0	0	0	0	0	0	0	0
Masonry	0	0	3	15.79	15	78.79	1	5.26	2,387	98.2
Manf. Home	0	0	0	0	0	0	4	1.58	0	0
Steel	0	0	2	100	0	0	97	.88	0	0
Wood	0	0	80	13.56	403	68.13	98	16.61	9	1.53

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building related losses were 213.33 million dollars with 0% of the estimated losses related to the business interruption of the region. The residential occupancies made up 76.55% of the total loss.

Shelter Requirements

HAZUS estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 3,437 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area; of these, 7,392 people (out of a total population of 177,843) will seek temporary shelter in public shelters.

Debris Generation

HAZUS estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 12,608 tons of debris will be generated. Of the total amount, Finishes comprises 41% of the total, Structure comprises 21% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 504 truckloads (at 25 tons/truck) to remove the debris generated by the flood

Hazardous Materials

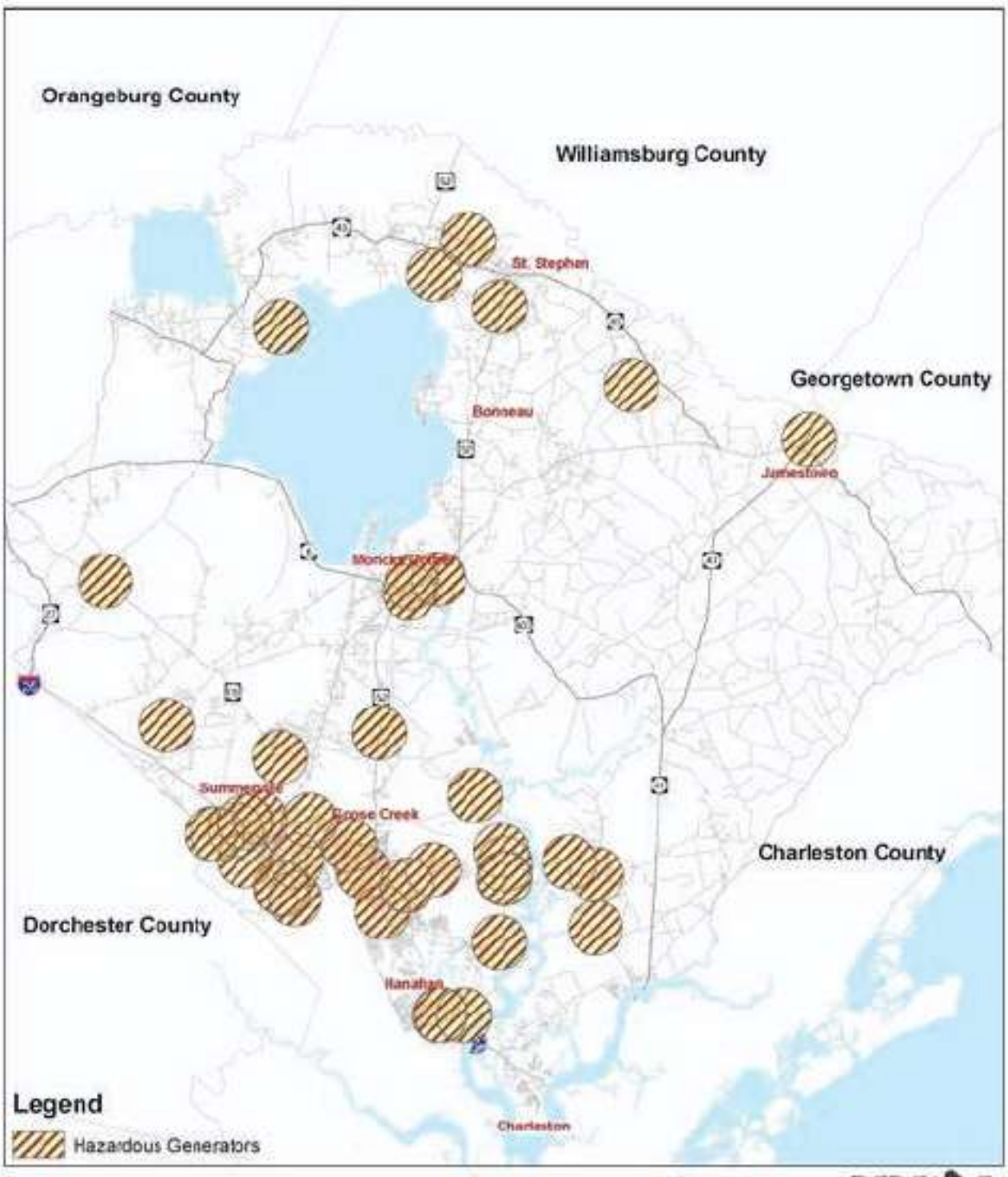
The identification of hazardous materials sites facilities was used to provide general information of their location. Additionally, this information aims to show areas that may be at risk due to their proximity to some of these facilities. Some radial distances were used to identify those areas at major risk. The American Society for Testing and Materials (ASTM) develops standards used in searching for regulated facilities that manufacture, use, store, or are disposal sites for hazardous materials and waste. According to these standards, the following radial distances were considered in evaluating each of the site's potential to effect surrounding properties:

Table 14: Radial distances used to highlight vulnerable areas to hazardous materials and waste contamination

FACILITIES	RADIAL DISTANCES
MSW	1.5 miles
HAZGEN	1.25 miles
RAD	2.0 miles
TRI	1.25 miles
TSD	1.5 miles
CERCLA	2.0 miles

Hazardous Generators (HAZGEN)

A greater concentration of HAZGEN facilities were observed in Goose Creek, Moncks Corner, and Hanahan areas for Berkeley County.

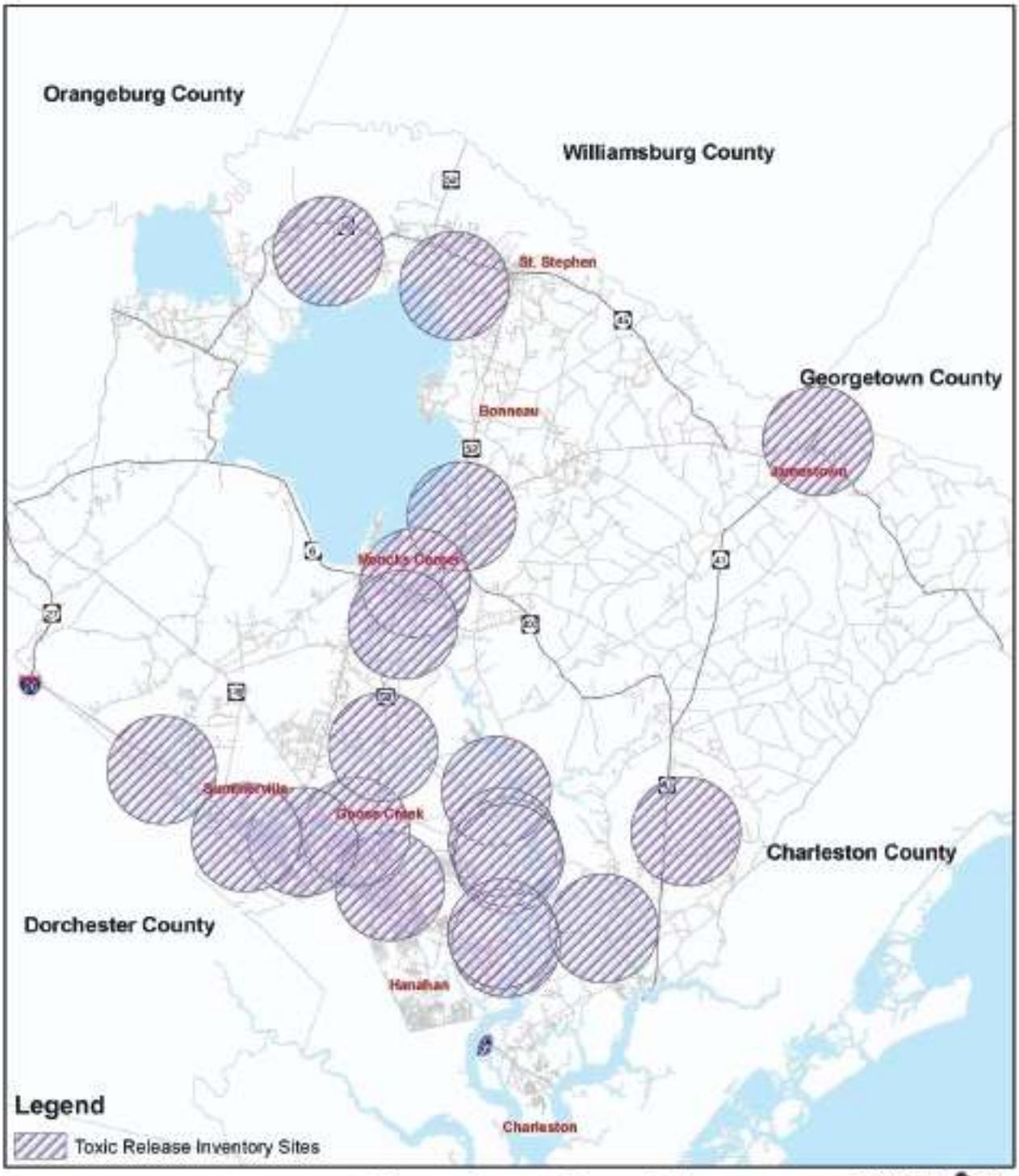


Hazardous Material
Berkeley County High Risk Areas to Hazardous Generators Sites Contamination

BCDCOG

Toxic Release Inventory (TRI)

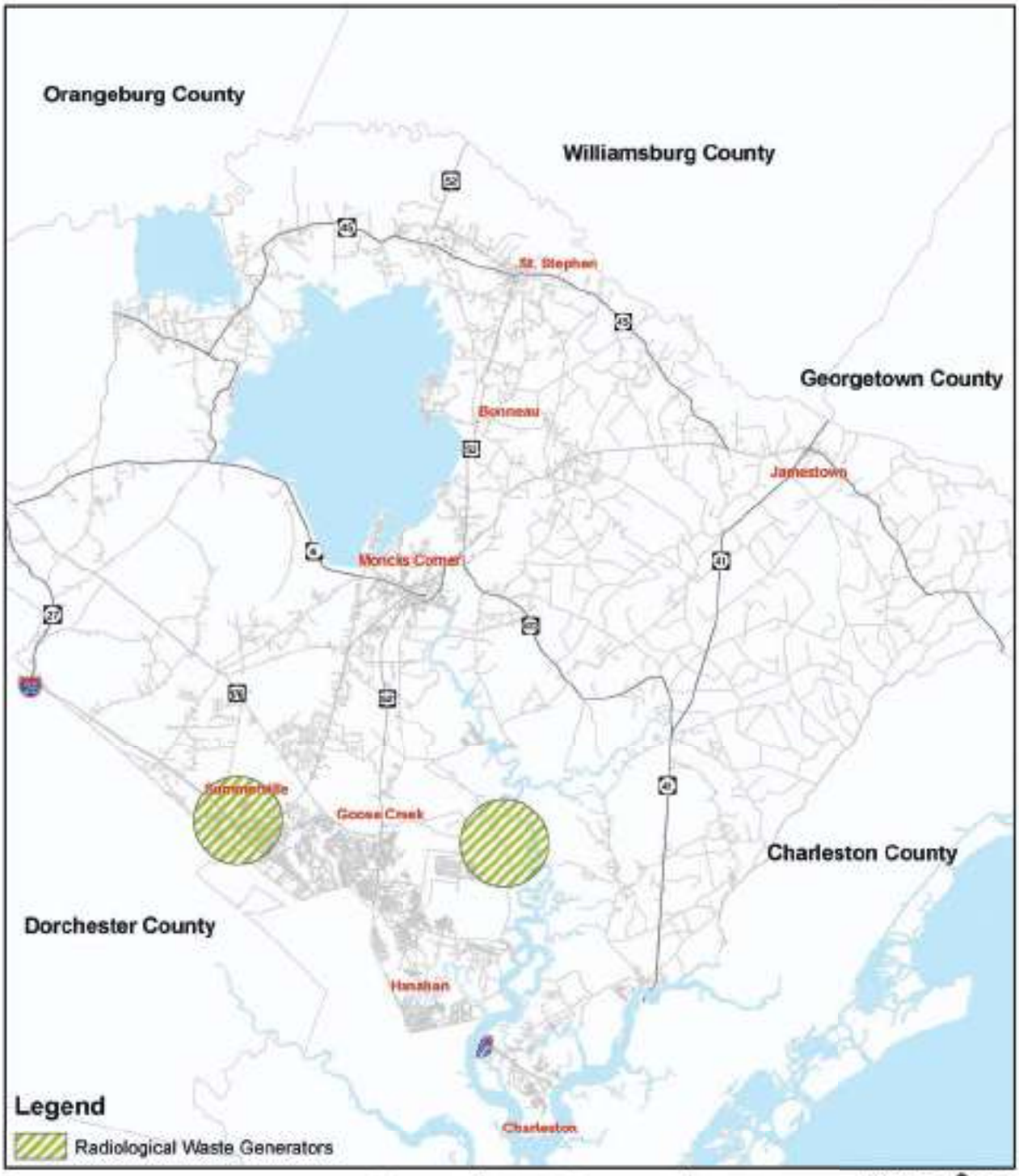
A greater concentration of TRI facilities were observed in Summerville, Goose Creek, Moncks Corner, and at the Naval Weapons Station areas for Berkeley County. Refer to Appendix F for detailed maps.



Hazardous Material
Berkeley County High Risk Areas to Toxic Release Inventory Sites Contamination

CERCLA and Radiological Waste Generators (RAD)

No CERCLA sites were identified for Berkeley County, and only two RAD facilities were identified: one in Summerville near I-26 and the second one at the Naval Weapons Station area.



Hazardous Material
Berkeley County High Risk Areas to Radiological Generators Sites Contamination

Data Source: FPV, USC-Hazards & Vulnerability Research Institute, Census Tiger Files, Berkeley County GIS
Projection: NAD_1983_UTM_Zone_17N
Data Path: V:\Planning Services\Hazard Mitigation Plan Update (FEMA 2009)\BCHMP_2010\Mxd\Dorchester Hazards.mxd

Treatment, Storage, Disposal (TRD) and Municipal Solid Waste (MSW)

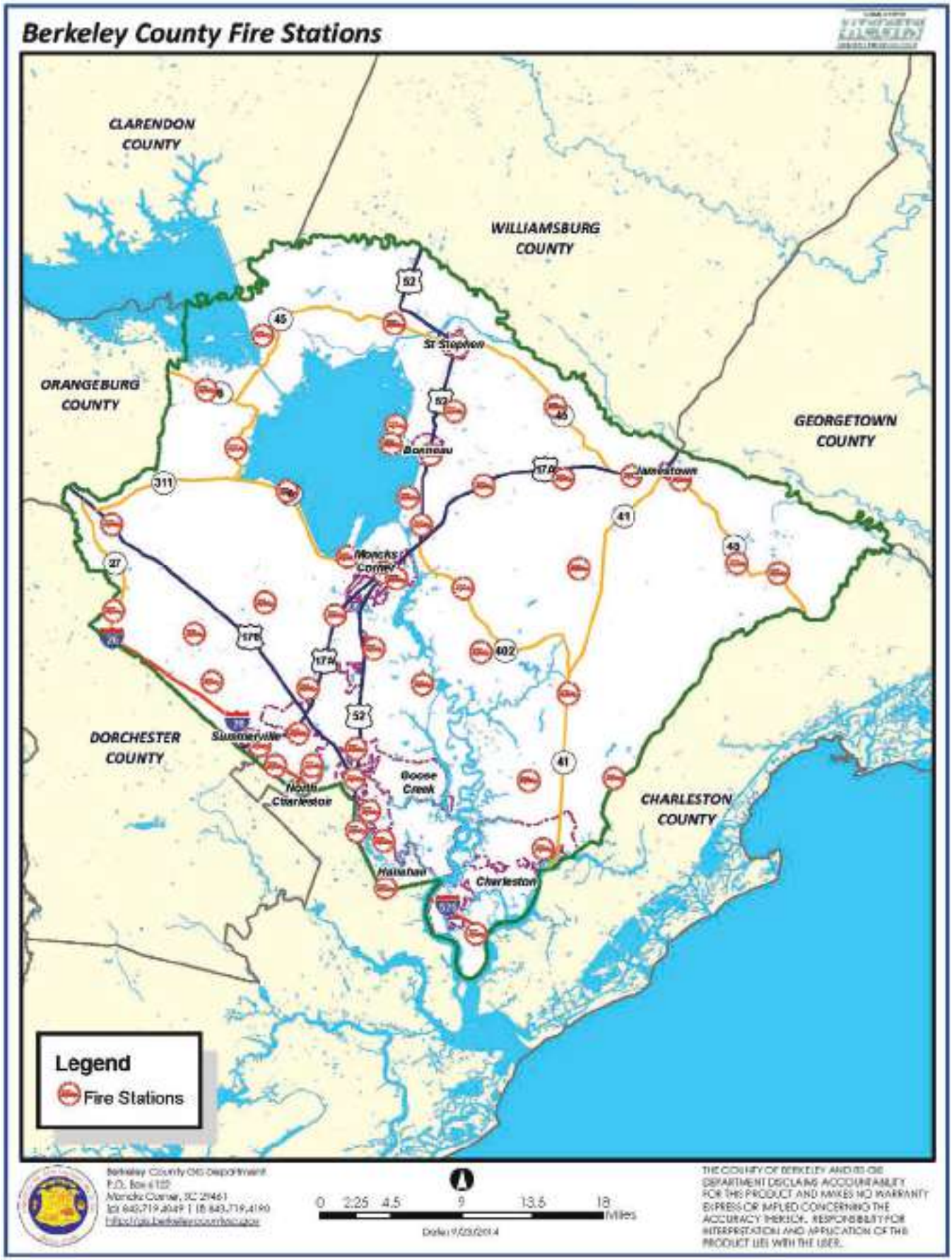
A greater concentration of TRD facilities were observed in areas like Hanahan and at the Naval Weapons Station in Berkeley County. Only one MSW has been identified for this County located north of Goose Creek.

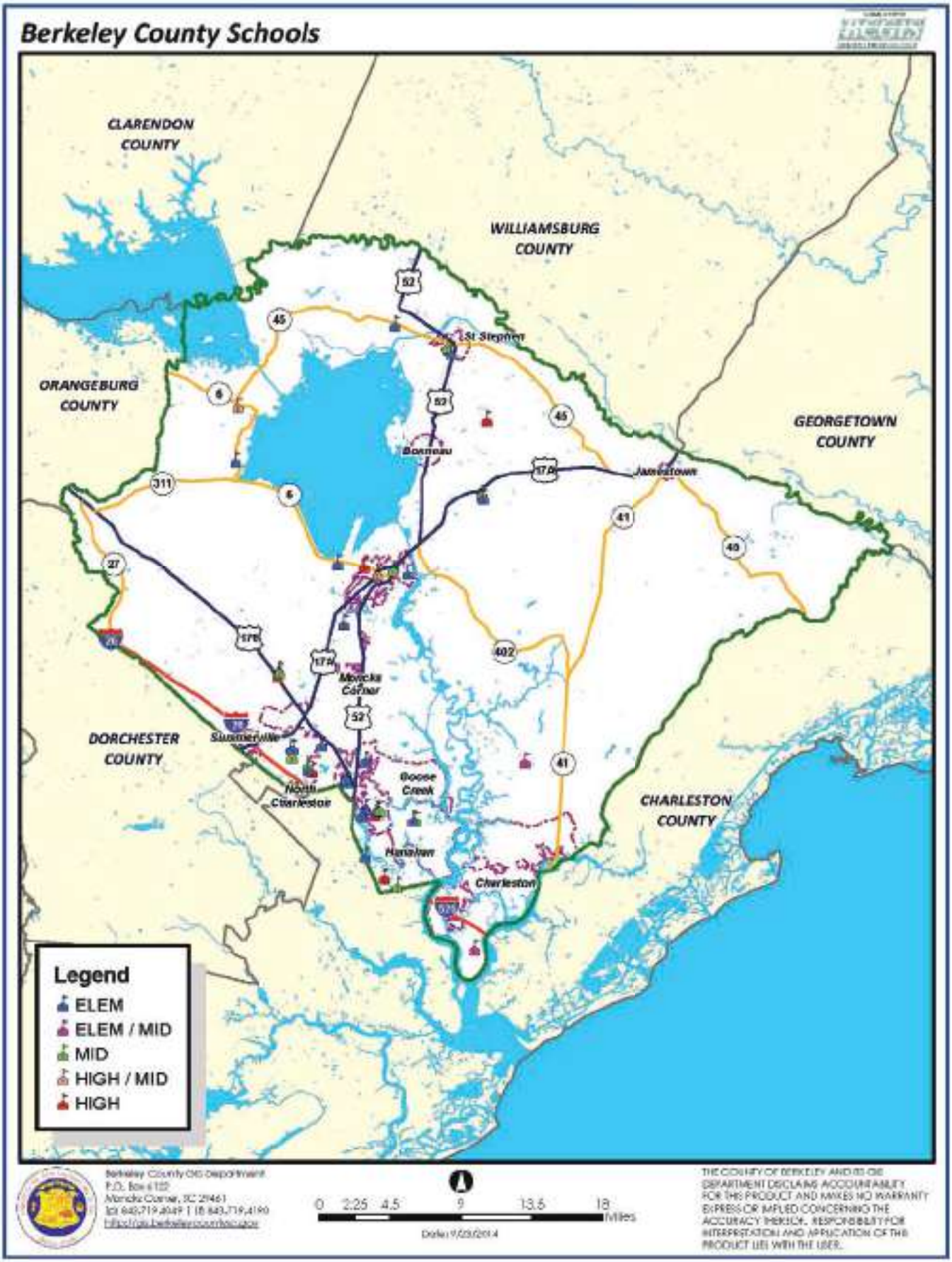
Critical Facilities

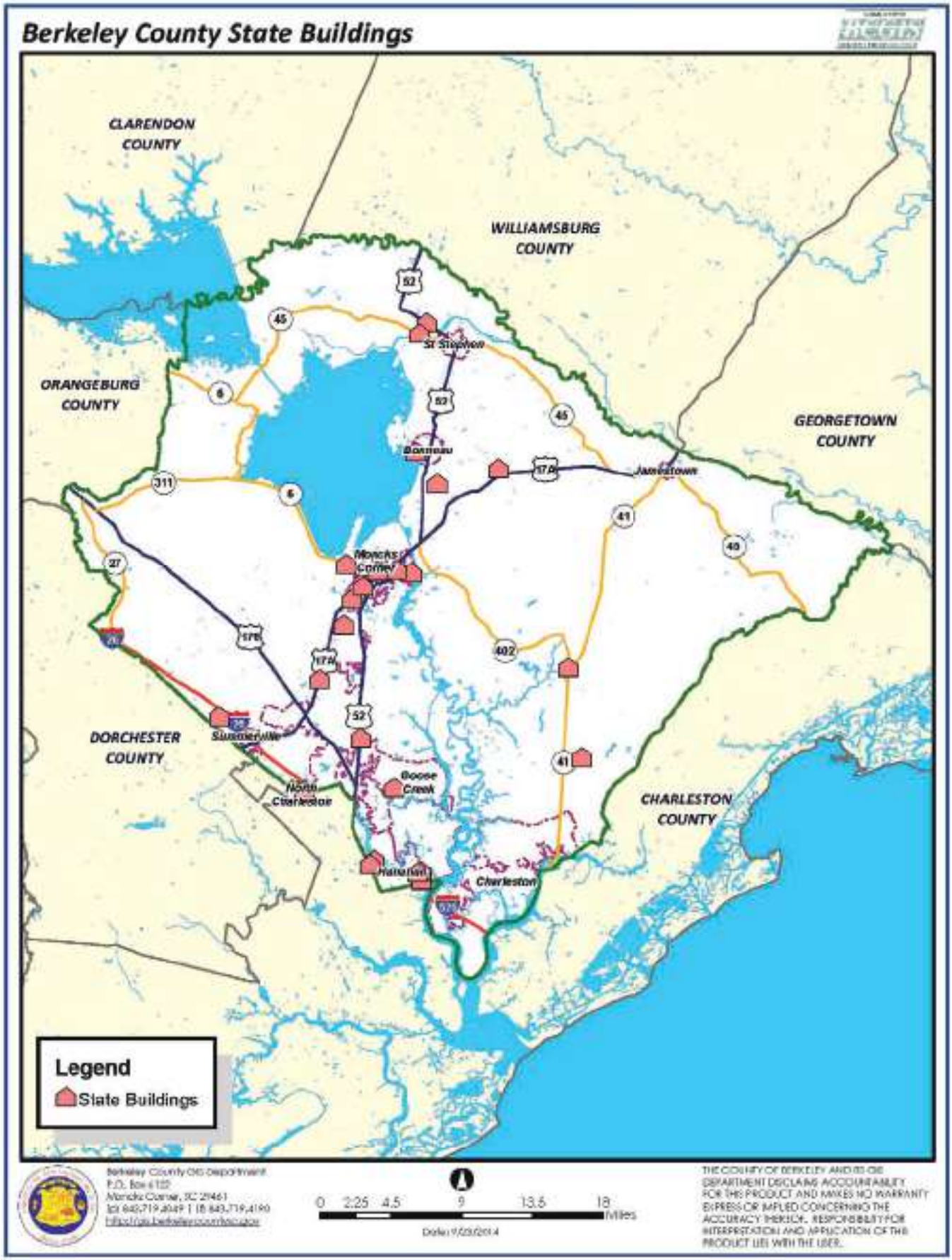
Critical facilities are those facilities that are essential to the health and welfare of a community during and after a hazard event. This information is extremely important to consider not just the effects of a hazard event on a structure but also the effects that the interruption of services that the structure provides. Some critical facilities have been identified for Berkeley County. These facilities were overlayed with the composite analysis of natural hazards and social factors used to determine most vulnerable areas.

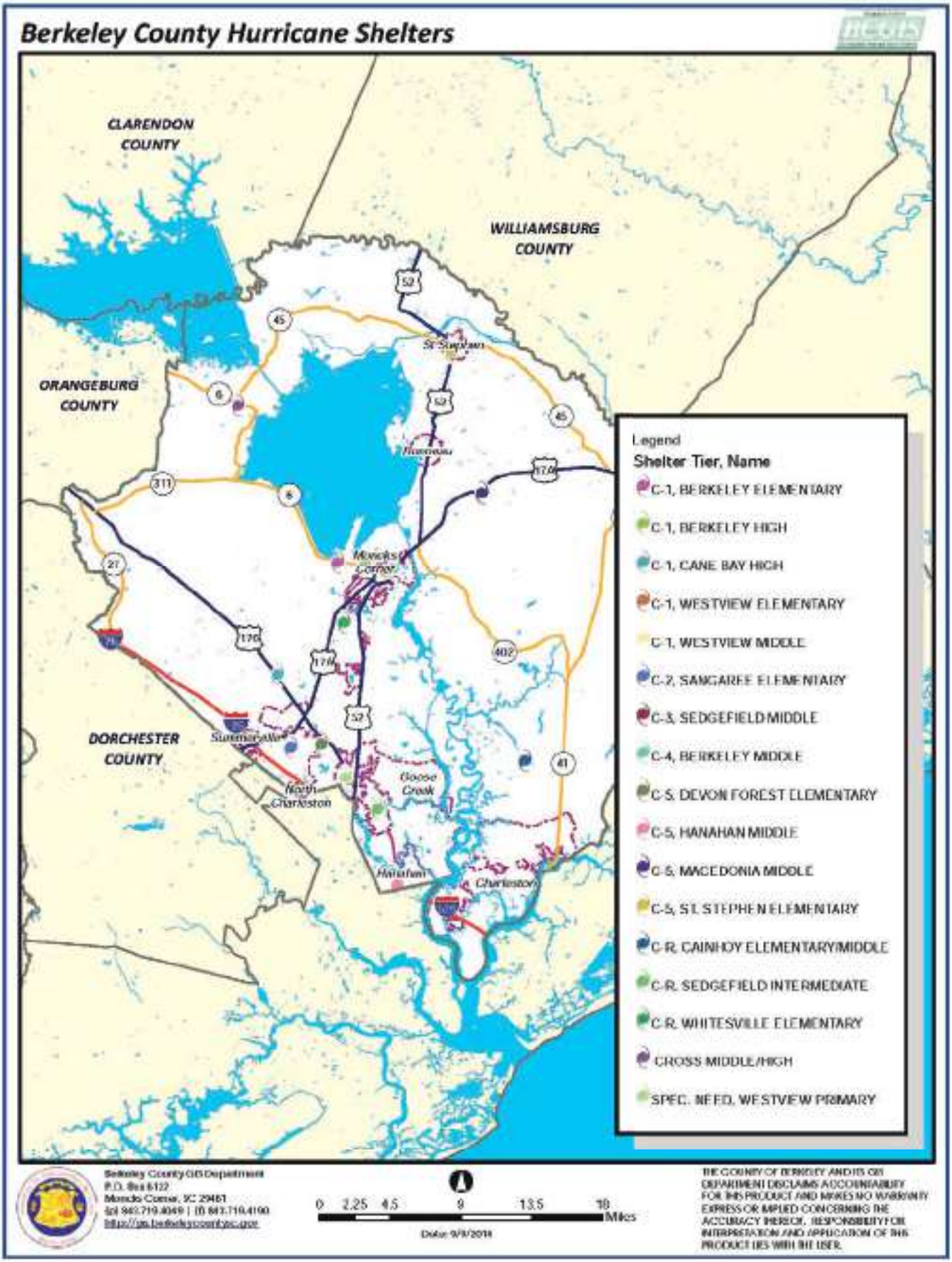
There is no definitive definition of what is to be considered a critical facility. The definition will differ for each community. For the purposes of the BCHMP, a critical facility is a structure from which essential services and functions are provided. These services include any activity that ensures that public safety activities and disaster response and recovery continue during and after a hazard event. Some of the facilities included in the map representation are listed below with maps included:

- Hospitals
- Other Health Facilities
- Emergency Facilities
- Fire Stations
- Shelters
- Schools
- Airport Facilities
- Industrial Sites
- Communication Facilities
- Electric Power Facilities
- Bridges
- Roads
- Rail Roads
- Natural Gas Pipelines


Berkeley County Fire Stations
CLARENDON COUNTY
WILLIAMSBURG COUNTY
ORANGEBURG COUNTY
GEORGETOWN COUNTY
DORCHESTER COUNTY
CHARLESTON COUNTY
St Stephen
Bonneau
Jamestown
Moncks Corner
Summerville
North Charleston
Goose Creek
Hanahan
Charleston
Legend
Fire Stations
0 2.25 4.5 9 13.5 18
Miles


Berkeley County Schools
CLARENDON COUNTY
WILLIAMSBURG COUNTY
ORANGEBURG COUNTY
GEORGETOWN COUNTY
DORCHESTER COUNTY
CHARLESTON COUNTY
St Stephen
Bonneau
Jamestown
Moncks Corner
Summerville
North Charleston
Goose Creek
Hanahan
Charleston
Legend
ELEM
ELEM / MID
MID
HIGH / MID
HIGH
0 2.25 4.5 9 13.5 18
Miles


Berkeley County State Buildings
CLARENDON COUNTY
WILLIAMSBURG COUNTY
ORANGEBURG COUNTY
GEORGETOWN COUNTY
DORCHESTER COUNTY
CHARLESTON COUNTY
St Stephen
Bonneau
Jamestown
Moncks Corner
Summerville
North Charleston
Goose Creek
Hanahan
Charleston
Legend
State Buildings
0 2.25 4.5 9 13.5 18
Miles


Berkeley County Hurricane Shelters
CLARENDON COUNTY
WILLIAMSBURG COUNTY
ORANGEBURG COUNTY
DORCHESTER COUNTY
Moncks Corner
Summerville
North Charleston
Goose Creek
Hanahan
Charleston
St Stephen
Huger
Legend
Shelter Tier, Name
C-1, BERKELEY ELEMENTARY
C-1, BERKELEY HIGH
C-1, CANE BAY HIGH
C-1, WESTVIEW ELEMENTARY
C-1, WESTVIEW MIDDLE
C-2, SANGAREE ELEMENTARY
C-3, SEDGEFIELD MIDDLE
C-4, BERKELEY MIDDLE
C-5, DEVON FOREST ELEMENTARY
C-5, HANAHAN MIDDLE
C-5, MACEDONIA MIDDLE
C-5, ST. STEPHEN ELEMENTARY
C-R, CAINHOY ELEMENTARY/MIDDLE
C-R, SEDGEFIELD INTERMEDIATE
C-R, WHITESVILLE ELEMENTARY
CROSS MIDDLE/HIGH
SPEC. NEED, WESTVIEW PRIMARY
0 2.25 4.5 9 13.5 18 Miles
Date: 9/9/2019
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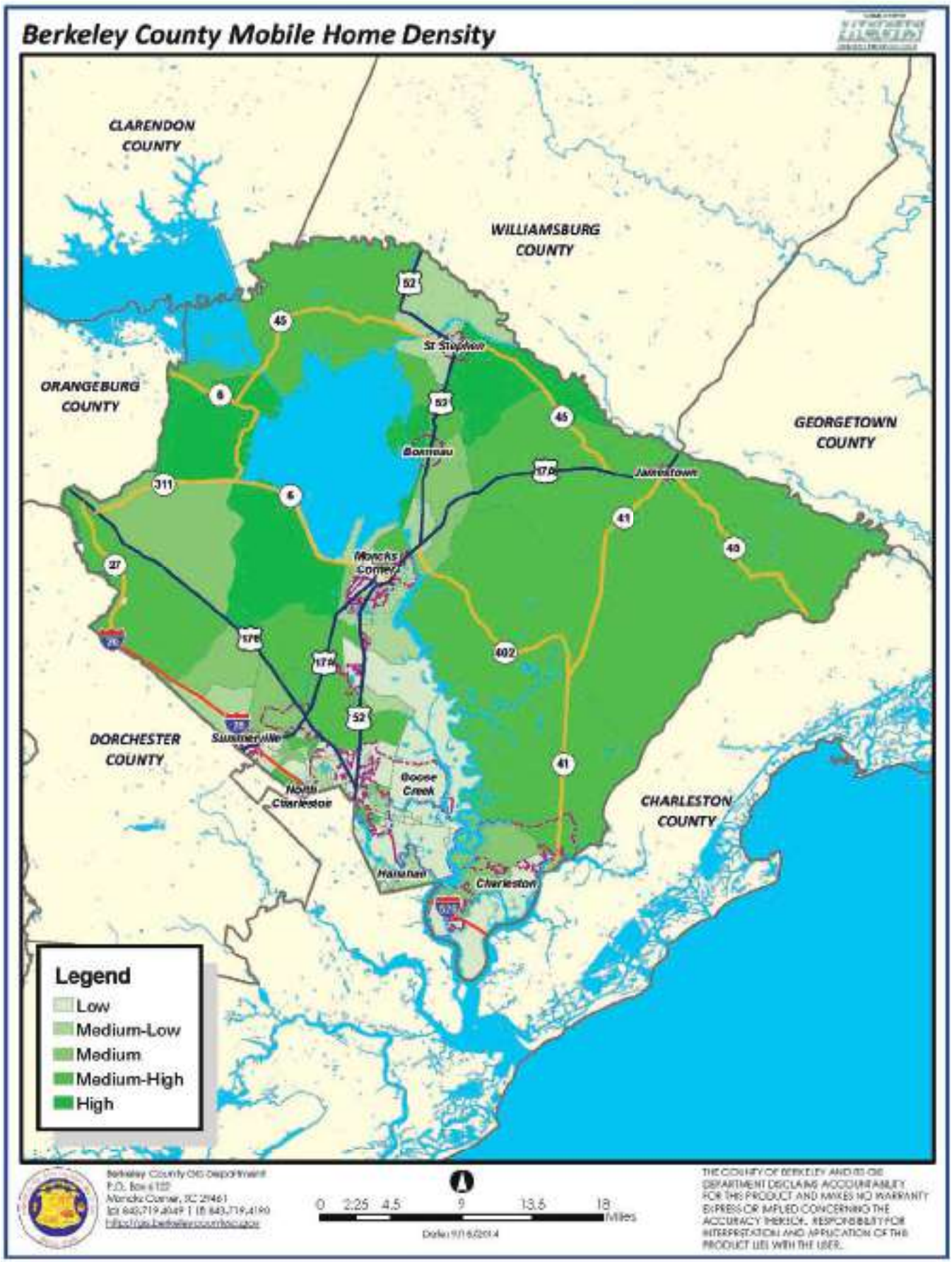
JURISDICTION POLICIES FOR CONTROL OF VULNERABILITIES

An important aspect of the vulnerability assessment process is to determine if the local government jurisdictions have policies, plans, codes or requirements in place that are intended to avoid or minimize the continuing development of properties that could be in harm's way from a future disaster. If local government policies, plans and requirements address the hazards posing the greatest risk to the community, then the vulnerability to future disasters can be reduced. The following table provides a list of identified policies and codes in Berkeley County that relate to the hazard mitigation. These ordinances were utilized to provide background data about each jurisdiction. As each of these documents is updated any project or activity not already addressed will be incorporated as appropriate.

JURISDICTION	COMPREHENSIVE PLAN	ZONING ORDINANCE AND LAND DEVELOPMENT REGULATIONS	STORMWATER DRAINAGE REGULATIONS	TAX INCREMENT FINANCING ORDINANCES
Berkeley County	Y	Y	Y	N
Bonneau	Y	Y	Y	N
Goose Creek	Y	Y	Y	Y
Hanahan	Y	Y	Y	Y
Jamestown	N	N	N	N
Moncks Corner	Y	Y	Y	N
St. Stephen	Y	Y	Y	N

** It should be noted that Berkeley County has, in addition to the items listed in the table, Floodplain Management Regulations, Zoning Regulations, Subdivision Regulations, Land Development Regulations, Fire Prevention Codes, a Community Emergency Response Training Program, and are a member of the National Weather Service Storm Ready Communities.*

APPENDIX B: DEMOGRAPHIC DATA SOCIALLY VULNERABLE ZONES


Berkeley County Mobile Home Density
CLARENDON COUNTY
WILLIAMSBURG COUNTY
ORANGEBURG COUNTY
GEORGETOWN COUNTY
DORCHESTER COUNTY
CHARLESTON COUNTY
St Stephen
Bonneau
Jamestown
Moncks Corner
Summerville
North Charleston
Boose Creek
Hanahan
Charleston
Legend
Low
Medium-Low
Medium
Medium-High
High
0 2.25 4.5 9 13.5 18
Miles
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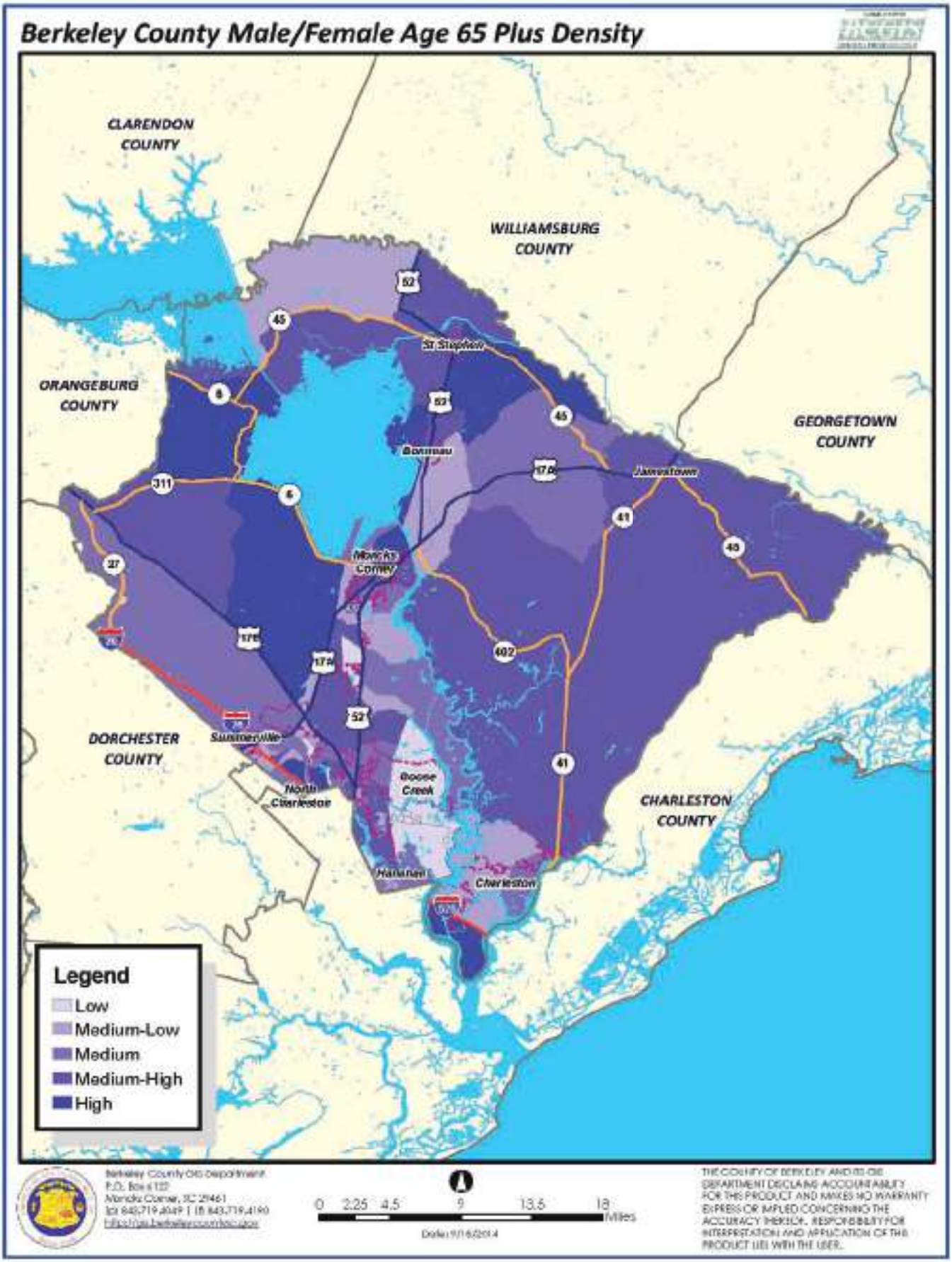
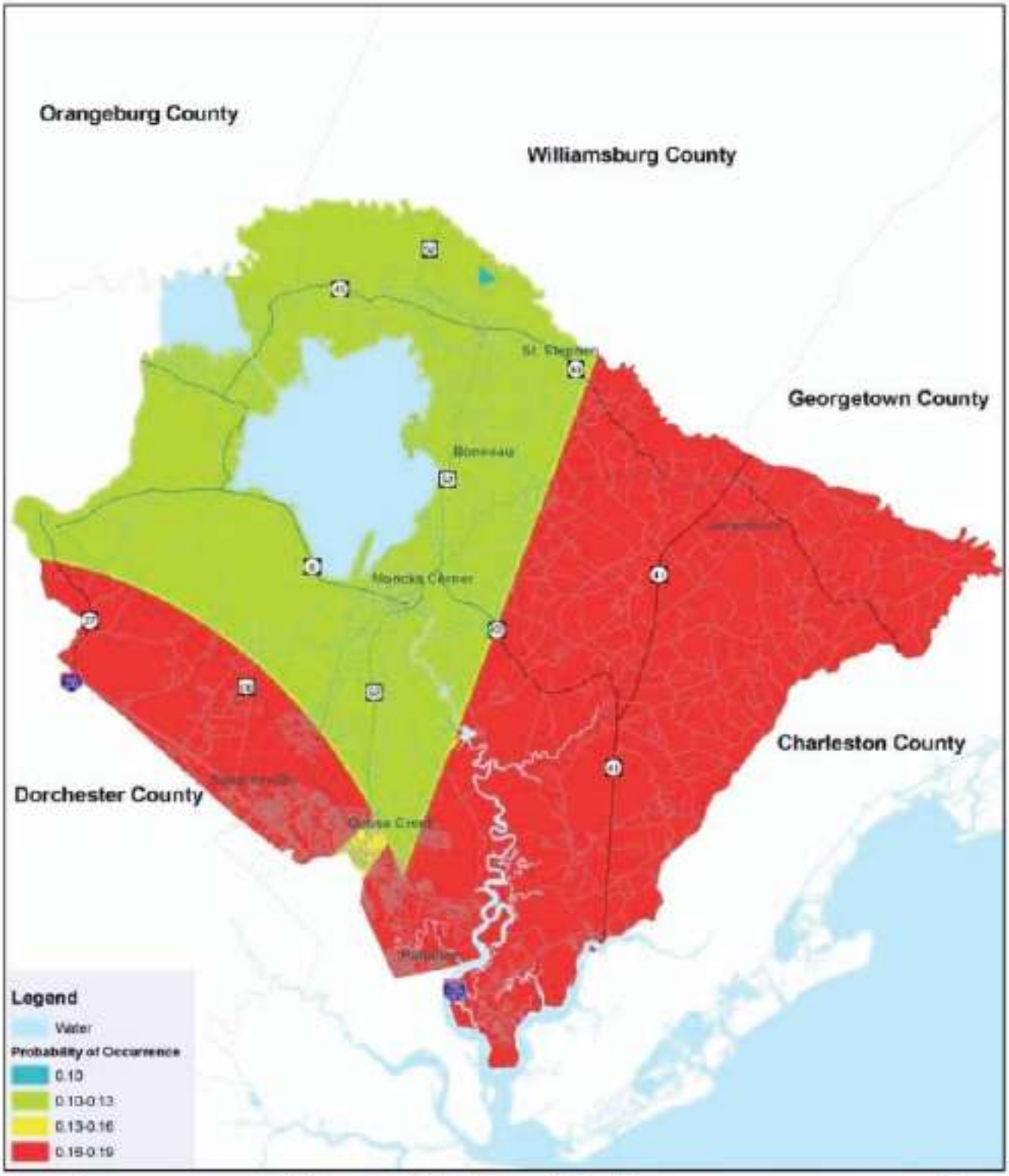

Berkeley County Male/Female Age 65 Plus Density
CLARENDON COUNTY
WILLIAMSBURG COUNTY
ORANGEBURG COUNTY
GEORGETOWN COUNTY
DORCHESTER COUNTY
CHARLESTON COUNTY
St. Stephen
Bonneau
Jamestown
Moncks Corner
Summerville
North Charleston
Goose Creek
Hanahan
Charleston
Legend
Low
Medium-Low
Medium
Medium-High
High
0 2.25 4.5 9 13.5 18
Miles

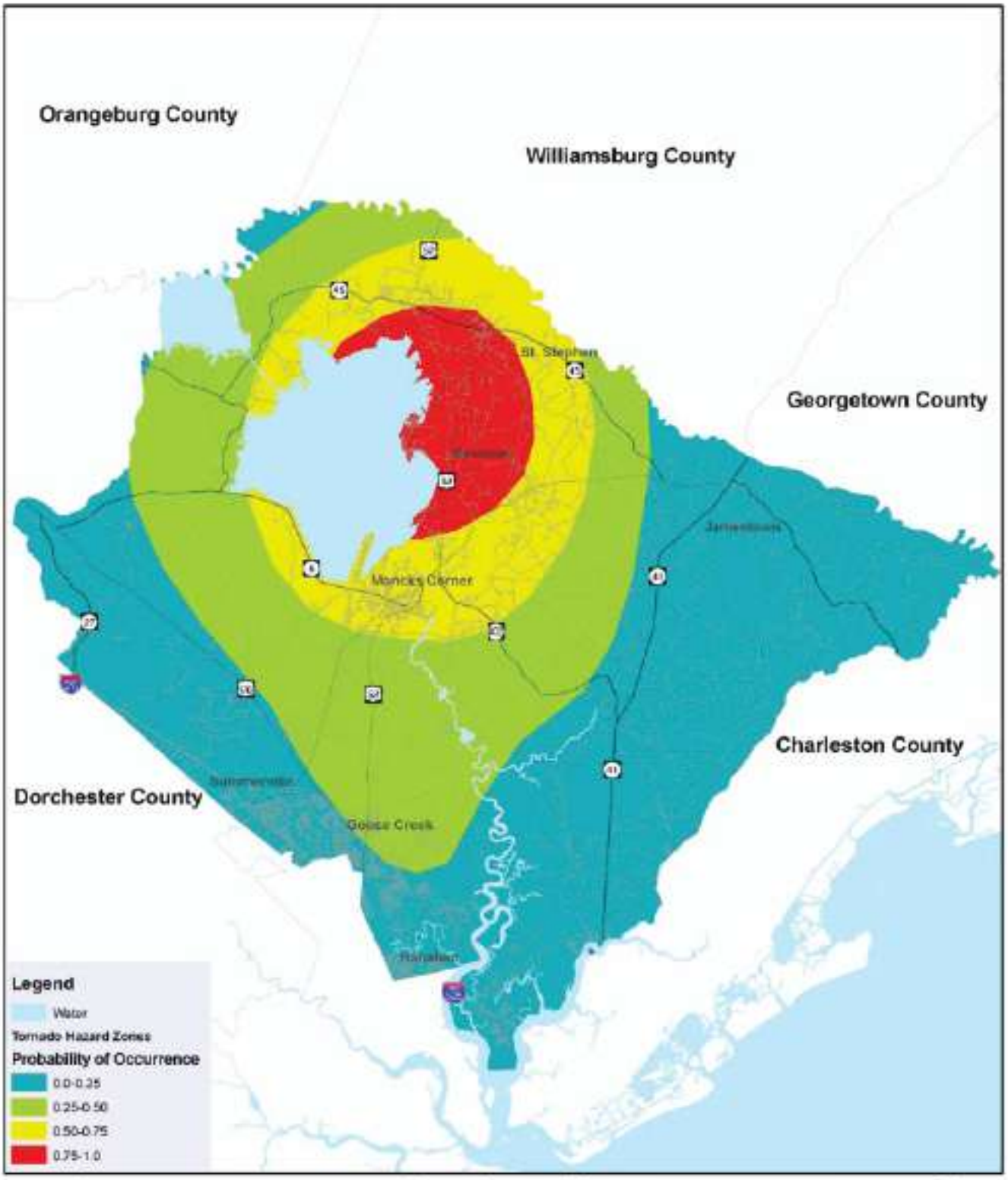
APPENDIX C: VULNERABILITY ASSESSMENT MAPS



Hazard Vulnerable Zones

Berkeley County Storm Hazard Zones

BCDCOG

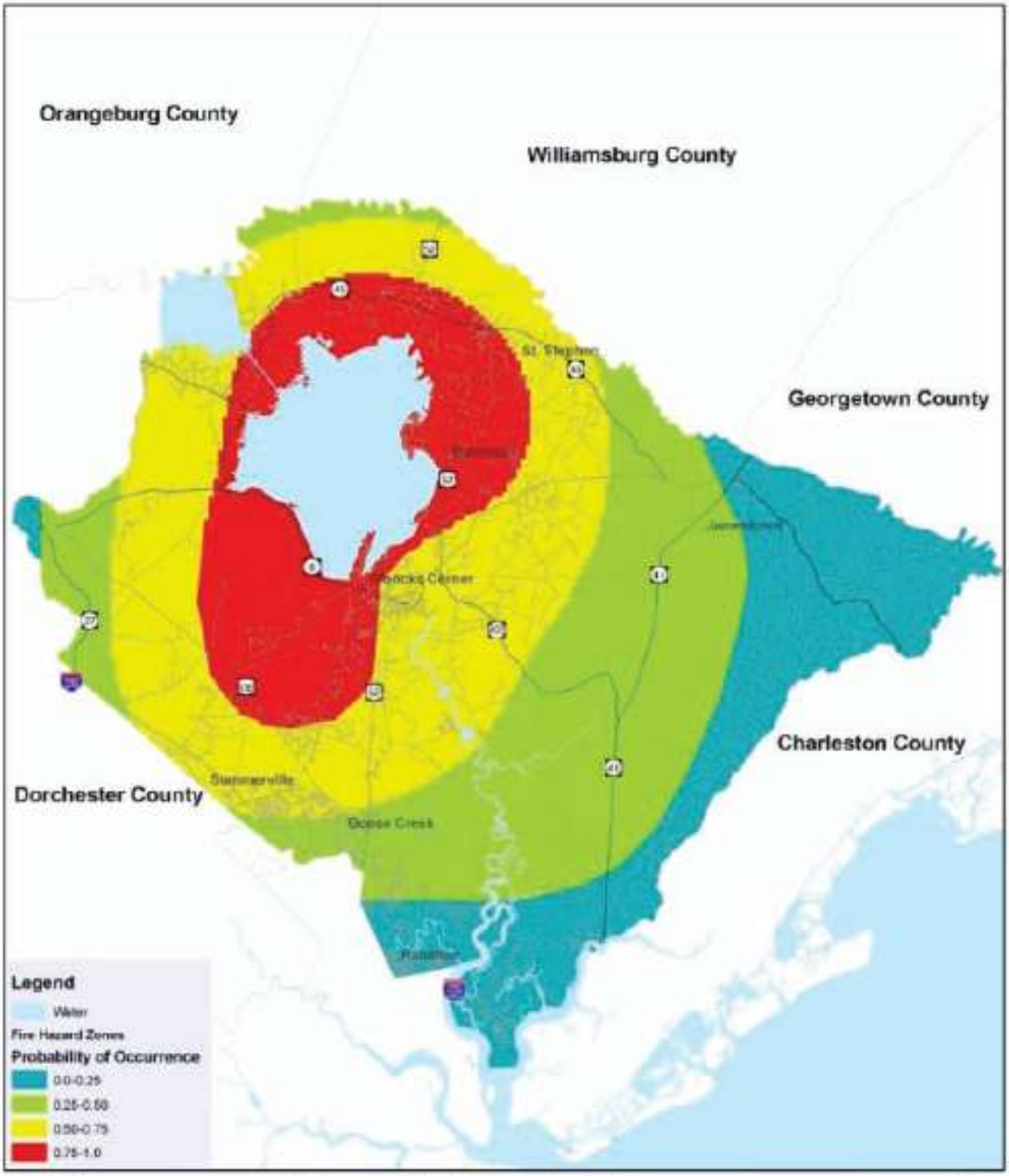


Hazard Vulnerable Zones

Berkeley County Tornado Hazard Zones

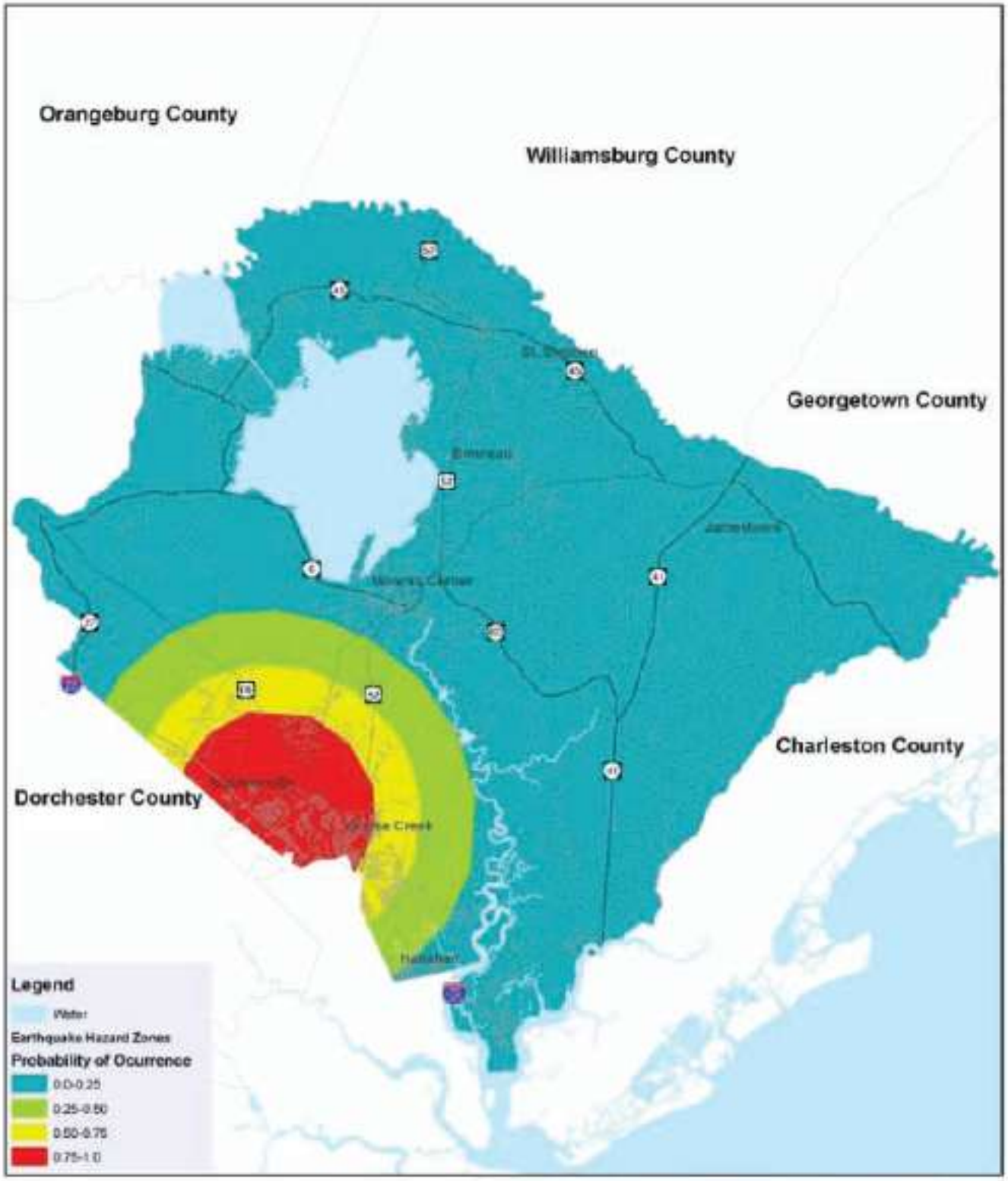
Data Source: National Data Climatic Center (NCDC)
USC Hazard Research Lab
Census Tiger Files, Berkeley County GIS
Projection: NAD_1983_UTM_Zone_17N
Data Path: V:\Planning Services\Hazard Mitigation Plan Update\
(FEMA-3308)\GDB-MD_2010\Maps\Berkeley Hazards.mxd

BCDCOG



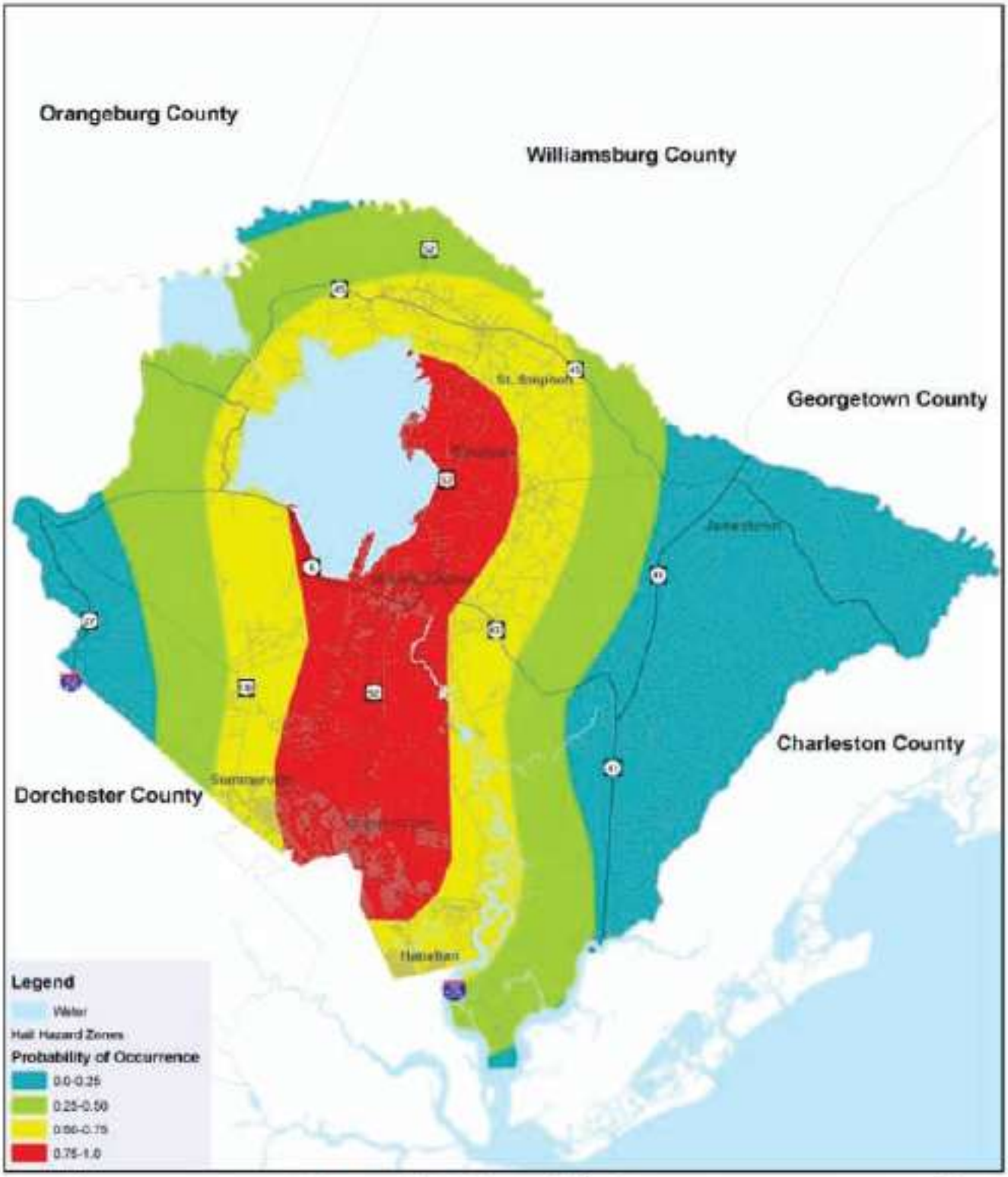
Hazard Vulnerable Zones

Berkeley County Fire Hazard Zones



Hazard Vulnerable Zones

Berkeley County Earthquake Hazard Zones



Hazard Vulnerable Zones

Berkeley County Hail Hazard Zones

Data Source: NOAA SPC Historical Severe Weather Service
USC Hazard Research Lab
Census Tiger Files, Berkeley County GIS
Projection: NAD_1983_UTM_Zone_17N
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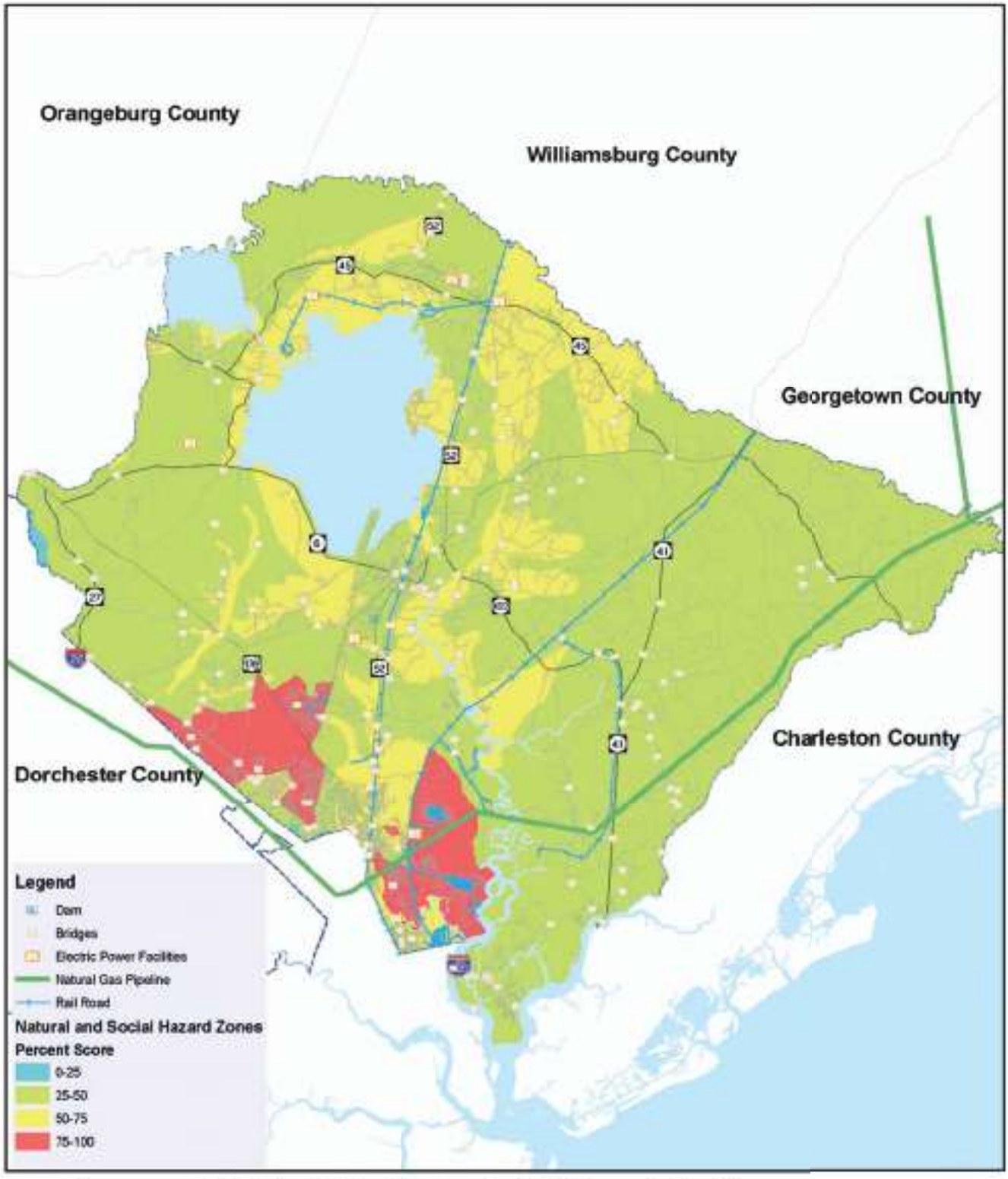

Critical Facilities in Vulnerable Zones

Berkeley County Dam, Bridges, Electric and Natural Gas Structures

BCDC G

Data Source: US Census Bureau,
USC Hazard Research Lab, SCEMD
Census Tiger Files, Berkeley County GIS
Projection: NAD_1983_UTM_Zone_17N
Data Path: V:\Planning Services\Hazard Mitigation Plan Update
(FEMA-2009)\BCHMP_2015\Maps\Berkeley Hazards.mxd

APPENDIX D: ALTERNATIVE FUNDING SOURCES

The following is a list of alternative funding sources that may be utilized to fund some of the mitigation goals, objectives and plans discussed in the BCHMP. These sources are nongovernmental funding sources to which each jurisdiction may apply for grants and loans.

FUNDING SOURCE	INTERESTS	PHONE #	ADDRESS
JANUARY			
The Acorn Foundation Inc. *www.commoncounsel.org* Note: A letter of inquiry is required, and grant applications are by invitation only.	Community based projects dedicated to building a sustainable future	(510) 834-2995 or (510) 834-2998	C/O COMMON COUNSEL FOUNDATION 1221 PRESERVATION PARK WAY OAKLAND, CA 94612-1206
The Home Depot, Inc. *www.homedepotfoundation.org*	Arts and humanities, the environment, social services, education and civic and public affairs	(770) 433-8211	DIR. OF COMMUNITY AFFAIRS 2455 PACES FERRY RD ATLANTA, GA 30339-4024
		(505) 982-3662 or (505) 982-3665	CHARLOTTE TALBETH, EXECUTIVE DIRECTOR PO BOX 6309 SANTA FE, NM
MARCH			
Mertz Gilmore Foundation *www.mertzgilmore.org* Note; except for environmental issues, focus is on New York City and Northeastern US.	Arts, civil rights, community dev., New York and Northeast US issues neighborhood dev., environment, energy, peace	(212) 475-1137	218 E. 18TH ST. NEW YORK, NY 10003-3697
The Home Depot, Inc. *www.homedepotfoundation.org*	Arts and humanities, the environment, social services, education and civic and public affairs	(770) 433-8211	DIR. OF COMMUNITY AFFAIRS 2455 PACES FERRY RD ATLANTA, GA 30339-4024

National Environmental Education and Training The Foundation INC. *www.neefusa.org*	Dollar for each NEETF dollar awarded, environmental education/ interpretation, Sustainable community development	(202) 833-2933 or (202) 261-6464	VICE PRESIDENT OF PROG. 1707 H. STREET, NW, STE. 99 WASHINGTON, DC 20009
MAY/JUNE			
The Acorn Foundation Inc. *www.commoncounsel.org* Note: A letter of inquiry is required, and grant applications are by invitation only.	Community based projects dedicated to building a sustainable future	(510) 834-2995 or (510) 834-2998	C/O COMMON COUNSEL FOUNDATION 1221 PRESERVATION PARK WAY OAKLAND, CA 94612-1206
Motorola Foundation *http://responsibility.motorola.com/index.php/society/comminvest/motofoundation/*	Higher education, employee matching gifts, social services and youth agencies. Engineering and technology education, Environmental education.		
Phillips Petroleum Company	Education, the environment, civic, youth health, welfare, culture and the arts		PHILLIPS BUILDING 16TH FLOOR BARTLESVILLE, OK 74004
Urban Park and Recreation Recovery (UPARR) *http://www.nps.gov/ncrc/programs/uprr/eligibility.html* Note: limited funding available for non-eligible counties and communities (including Berkeley and Dorchester Counties and all municipalities in BCD region except Charleston).	Rehabilitation grants that focus on neighborhood recreation sites that have deteriorated to the point where the communities' health and safety are endangered, or the communities range of quality recreation opportunities are impaired	AZ, CO, NM, TX, OK (402) 221-3358 OR 3292 OR 3205	MIDWEST REGIONAL OFFICE NATIONAL PARK SERVICE 1709 JACKSON ST. OMAHA, NE 68102-2571

JULY			
Ben & Jerry's Foundation *http://www.benandjerrysfoundation.org/the-national-grassroots-grant-program.html*	General environment, wildlife/fisheries/habitat Sustainable community development racism, and sexism. Primarily funds grassroots organizations	(802) 846-1500	30 COMMUNITY DRIVE SOUTH BURLINGTON, VT 05403-6828
Borden Foundation, Inc.	art, education, humanities, environment, health, and social services	(614) 225-4580 or 225-4340	180 EAST BROAD STREET COLUMBUS, OHIO, 43215-3799
AUGUST			
Sustainable Development Challenge Grants *http://www.epa.gov/smartgrowth/partnership/*	Community based projects that promote environmentally and economically sustainable development	(202) 260-6812	U.S. ENVIRONMENTAL PROTECTION AGENCY, SDGC, OFFICE OF THE ADMINISTRATOR (MC 1306) ARIEL RIOS BUILDING.1200 PENNSYLVANIA AVE, NW WASHINGTON, DC 20460
The Levinson (Max and Anna) Foundation *www.levinsonfoundation.org* Note: A letter of inquiry is required, and grant applications are by invitation only.	the environment, social causes and Israel/Jewish concerns	(505) 982-3662 or 982-3665	CHARLOTTE TALBETH, EXECUTIVE DIRECTOR PO BOX 6309 SANTA FE, NM
Phillips Petroleum Company	Education, the environment, civic, youth health, welfare, culture and the arts		PHILLIPS BUILDING 16TH FLOOR BARTLESVILLE, OK 74004

SEPTEMBER			
Sustainable Development Challenge Grants *http://www.epa.gov/smartgrowth/partnership/*	Community based projects that promote environmentally and economically sustainable development	(202) 260-6812	U.S. ENVIRONMENTAL PROTECTION AGENCY, SDGC, OFFICE OF THE ADMINISTRATOR (MC 1306) ARIEL RIOS BUILDING, 1200 PENNSYLVANIA AVE, NW
The David and Lucile Packard Foundation *http://www.packard.org/home.aspx*	Africa, Arts, community dev., education, environment, natural resources, etc.	(605) 948-7658	300 2ND ST. STE. 200 LOS ALTOS, CA 94022

OCTOBER			
National Fish and Wildlife Foundation: Bring Back the Natives (BBN) (NFWF) *http://www.nfwf.org/AM/Template*	To restore watersheds where federal land agencies have land management responsibilities	(415) 778-0999 (415) 778-0998	WESTERN REGION PARTNERSHIP OFFICE: 116 NEW MONTGOMERY STREET SUITE 203 SAN FRANCISCO, CA 94015
NOVEMBER			
Sustainable Development Challenge Grants *http://www.epa.gov/smartgrowth/partnership/*	Community based projects that promote environmentally and economically sustainable development	(202) 260-6812	U.S. ENVIRONMENTAL PROTECTION AGENCY, SDGC, OFFICE OF THE ADMINISTRATOR (MC 1306) ARIEL RIOS BUILDING, 1200 PENNSYLVANIA AVE, NW
National Gardening Association *http://assoc.garden.org/grants/*	The National Gardening Association awards 400 Youth Garden Grants to schools, neighborhood groups, community centers, camps, clubs, treatment facilities, and intergenerational programs throughout the United States.		YOUTH GARDEN GRANTS PROGRAM NATIONAL GARDENING ASSOCIATION 1100 DORSET STREET SOUTH BURLINGTON, VT 05403

Ben & Jerry's Foundation *http://www.benandjerrysfoundation.org/the-national-grassroots-grant-program.html*	General environment, wildlife/fisheries/ habitat Sustainable community development racism, and sexism. Primarily funds grassroots organizations	(802) 846-1500	30 COMMUNITY DRIVE SOUTH BURLINGTON, VT 05403-6828
DECEMBER			
The David and Lucile Packard Foundation *http://www.packard.org/home.aspx*	Africa, Arts, community dev., education, environment, natural resources, etc.	(605) 948-7658	300 2ND ST. STE. 200 LOS ALTOS, CA 94022
AMR/American Airlines Foundation AMR Corps	Community development, education	(817) 967-9784	PO Box 619616
AMR/American Airlines Foundation AMR Corps *http://www.aa.com/i18n/aboutUs/corporateResponsibility/community/global-philanthropy.jsp*	Community development, education programs, recycling, environment, economic development	(817) 967-9784	PO BOX 619616 MAIL DROP 5575 DWF AIRPORT, TX 75261-9616
Armstrong Foundation	Resources conservation with grants for conferences/seminars, general support, and research	(601) 442-0122	PO DRAWER 2299 NATCHEZ, MS 39121
BHP Copper North America	Civic and public affairs, education, the environment, and social services. Emphasis is given to communities where the company	(520) 575-5674	PUBLIC RELATIONS COORDINATOR NORTH AMERICA 7400 NORTH ORACLE ROAD, SUITE 200 TUCSON, AZ 85704

Bingham (William) Foundation *https://www.fdncenter.org/grantmaker/bingham/*	Humanities, civic and public affairs, education, the environment, and social services	(216) 331-6350	Director 20325 Center Ridge Road, Suite 629 Rocky River, OH 44116-3554
Burlington Northern Santa Fe Foundation *http://www.bnsffoundation.org/*	Education, cultural organizations, civic services involving youth, environmental organizations, parks and recreation facilities and human services	(817) 867-6458	2650 Lou Menk Drive Fort Worth, TX 76131-2830
Carthage Foundation *http://www.scaife.com/carthage.html*	Grants for capital, conference/simians, fellowship, general support, operating expenses, project, research and seed money	(412) 392-2900	One Oxford Center 301 Grant Street, Ste. 3900 Pittsburgh, PA 15219-6401
Civil Works Projects, U.S. Department of Defense, Army Corps of Engineers	Provides help to communities with a variety of resource problems and opportunities including flood controls, outdoor recreation, environmental restoration, and water quality control	Texas (214) 767-2400	Military & Environmental Restoration Division Southwestern District 1110 Commerce Street Dallas, TX 75242-0216
Liz Claiborne Art Ortenberg Foundation	Devoted to the conservation of nature and the amelioration of human distress,	(212) 333-2536 Fax (212) 956-3531	650 Fifth Avenue, 15th floor New York, NY 10019
Dana Corporation		(419) 535-4601	Dana Corporation Administrator PO Box 1000 Toledo, OH 43697

Michael and Elizabeth Dingman Foundation	Arts and humanities, civic and public affairs, education, the environment, and social services		
Dreyfus (Max and Victoria) Foundation	Arts and culture, civic affairs, education, the environment, health, and social services	(914) 682-2008	Office Administrator 50 Main Street, Suite 1000 White Plains, NY 10606
Economic Development Grants for Public Works and Development of Facilities *http://www.eda.gov/AboutEDA/Programs.xml*	Provides grants to states, counties and cities designated as redevelopment areas by EDA for public works projects that can include developing trail and greenway facilities	(202) 482-5265	Herbert Hoover Bldg Dept. of Commerce, Rm. H7326 Washington, DC 20230
El Paso Energy Foundation		(915) 496-3455	
Eureka Company		(309) 823-5742	Director, Public Relations 1201 E. Bell Street Bloomington, IL 61701
Ferguson (Michael D.) Charitable Foundation	General environment, wildlife, fisheries, habitat, Sustainable community development		124 E. Main St. Rexburg, ID 83440-1912
Gund (Geoffrey) Foundation	Arts and humanities, civic and public affairs, education, the environment, health, and social services.	(212) 689-3075	40 E. 94th Street, #28-E New York, NY 10128

Halliburton Foundation Inc.	Arts and humanities, civic and public affairs, education, the environment, health, social services	(214) 978-2600	Vice President & Secretary 3600 Lincoln Plaza 500 North Akard Street Dallas, TX 75201
Heinz (Vira I.) Endowment			
Hoechst Cleanese Foundation, Inc.	Education, health and human services, environmental protection, equal opportunity, art and culture, and civic and public affairs	(908) 231-2880 (908) 231-2431	Route 202-206 North PO Box 2500 Somerville, NJ 08876-1258
Jain Foundation	Arts, humanities, the environment and social services		President 23650 Morrill Cutoff Road Los Gatos, CA 95033-9222
Kerr Foundation	Arts, humanities, civic and public affairs, education, the environment, health and social services	(405) 749-7991	12501 North May Ave. Oklahoma City, OK 73120
Mellon (Andrew W.) Foundation	Higher education, cultural affairs, art, population conservation and environment and public affairs	(212) 838-8400	140 East New York, NY 10021
The Mooty (John W.) Foundation Trust	Civic affairs, education, health, the environment, and social services	(612) 343-2839	3400 City Center Minneapolis, MN 55402
Penn (William) Foundation	Children, communities and the natural environment	(215) 988-1830 (215) 988-1823 fax	Two Logan Square, 11th fl 100 North 18th Street Philadelphia, PA 19103-2757

Poinsettia (Paul and Magdalena Ecke) Foundation	Art and humanities, civic and public affairs, education, the environment, and social services	(619) 431-5600	Financial Officer 5600 Avenida Encinas, # 100 Carlsbad, CA 92008
Sulzberger Foundation	Arts and humanities, civic affairs, and public affairs, environment, health, and social services	(212) 556-1750	President 229 West 43rd Street, rm. 1031 New York, NY 10036
True North Foundation	Communities and the environment	(907) 223-5285	PO Box 271308 Fort Collins, CO 80527-1308
Teast (Charlotte and Donald) Foundation	Sustainable communities, Arts, humanities, civic and public affairs, education, the environment, health and social services	(214) 373-6039	Trust Officer 7502 Greenville Ave, Suite 250 Dallas, TX 75231
Ungar Foundation	Arts, humanities, civic and public affairs, education, the environment, and social services	(518) 325-7159	Director C/O Skytop Ranch 325 Sky Farm Rd Copake, NY 12516
		(202) 452-1530	1990 M. Street NW Suite 250 Washington, DC 20036
	Civic and public affairs, the environment, and social services	(404) 827-6921	Trust Officer C/O Sun Trust Bank Atlanta PO Box 4655 Atlanta, GA 30302-4655
Wishnick (Robert I.) Foundation	Arts and humanites, civic and public affairs, education, the environment, science, and social services	(212) 371-1844	President & Director 1 American Lane Greenwich, CT 06831

Land O'Lakes Foundation	Arts and humanities, civic and public affairs, education, the environment, health and social services	(612) 481-2212	Executive Director PO Box 62150 St. Paul, MN 55164-0150
	Animals, children, youth services, education, environment, natural resources, human services	(706) 571-6594	PO Box 40 Columbus, GA 31902
Urban Park and Recreation Recovery Program	Rehabilitation grants that focus on neighborhood park and recreation sites and facilities that have deteriorated to the point where health and safety are endangered or the community's range of quality recreation services is impaired	See web	See web
Watershed Protection and Flood Prevention Program	Provides technical and financial assistance to address resource and related economic problems on a watershed basis	(202) 720-3534	Department of Agriculture Natural Resources Conservation Service PO Box 2890 Washington, DC 20013-9770
GRANT DIRECTORIES			
http://www.lgean.org/html/whatsnew.cfm#wn2 *www.sonoran.org* *http://foundationcenter.org/*			

APPENDIX E: PUBLIC NOTIFICATIONS

The following table includes media outlets notified of Berkeley-Charleston-Dorchester Council of Governments Board of Directors meetings and Berkeley County council meetings. The notification includes an agenda indicating time, place, and opportunity for public comment. Thereafter appear the agendas of Berkeley County Council and Dorchester County Council, respectively, at which the BCHMP was presented to the public.

POST & COURIER 134 COLUMBUS STREET CHARLESTON, SC 29403	BERKELEY INDEPENDENT PO BOX 427 MONCKS CORNER, SC 29461	NEWS EDITOR THE EAGLE-RECORD PO BOX 278 ST. GEORGE, SC 29477
NEWS EDITOR WTAT - FOX 24 4301 ARCO LANE CHARLESTON, SC 29406	GOOSE CREEK GAZETTE/BERKELEY IND. PO BOX 304 GOOSE CREEK, SC 29445	JIM FRENCH THE CHRONICLE PO BOX 20548 CHARLESTON, SC 29413-0548
ASSIGNMENT EDITOR WCIV TV 4 888 ALLBRITTON BLVD. MT. PLEASANT, SC 29464	HANAHAN NEWS/N. CHAS. 1928 E. MONTAGUE AVENUE NORTH CHARLESTON, SC 29419	NEWS DIRECTOR WCBD TV 2 210 W. COLEMAN BLVD. MT. PLEASANT, SC 29464

BCDCOG Berkeley-Charleston-Dorchester Council of Governments

CHAIRMAN: Daniel W. Davis • VICE CHAIRMAN: Teddie Pryor • SECRETARY: William Swails • TREASURER: William Collins • EXECUTIVE DIRECTOR: Ronald E. Mitchum

Berkeley County Hazard Mitigation Plan Meeting
Friday, February 28th
10:00 AM to 12:00 PM

Berkeley County Office Building - Berkeley General Assembly Room
Moncks Corner, SC

The BCDCOG will be assisting Berkeley County in the upcoming months to update its Hazard Mitigation Plan (HMP) as required by FEMA. The updated HMP will address how the county and its municipalities will plan and mitigate for multiple natural hazards including flood, wind, fire, earthquake, thunderstorms and winter/ice storms. The plan update will continue to include descriptions of the natural hazards, assess each risk and update priorities for mitigation. As part of the public involvement process, there will be stakeholder meetings, public hearings and surveys involving the county municipalities, nonprofits, state and federal agencies and interested citizens throughout the spring and summer.

The first stakeholder meeting will take place on Friday February 28th from 10:00 AM to 12:00 PM in the Berkeley General Assembly Room in the Berkeley County Office Building located at 1003 Highway 52, Moncks Corner, SC. For more information, contact Vonie Gilreath at 529-0400 ext. 202 or email vonie@bcdcog.com.

1362 McMillan Avenue, Suite 100, North Charleston, SC 29405
Tel: (843) 529-0400 Fax: (843) 529-0305
www.bcdcog.com

BERKELEY COUNTY
HAZARD MITIGATION PLAN
MEETING

Berkeley County Office Building – General Assembly Room
1003 Highway 52
Moncks Corner, SC

February 28, 2014
10:00 am

AGENDA

I. Welcome/Introduction

II. Presentation: Hazard Mitigation Plan Overview

III. Roles
   a. BCDCOG Staff
   b. Planning Committee Role
   c. Public

IV. Timeline
   a. February-June [Staff]
      i. New Census Data incorporated into plan
      ii. Community hazard risk assessments updated
      iii. Map Updates
   b. Committee Meetings
      I. March – Review Plan and Revise Goals
      II. April- Revise Goals and Implementation Strategies
      III. June- Review First Draft
      IV. July- Review Final Draft
   c. Public Input Meetings
      I. April and May
      ii. Locations: Daniel Island and Berkeley County Office Building
   d. Adoption of Plan
      i. August-September
      ii. Approval by County and each Municipality
   e. Project Close out to State- October 2014

V. Discussion

VI. Adjourn

BERKELEY COUNTY
HAZARD MITIGATION PLAN
MEETING
February 28, 2014

NAME	AGENCY	ADDRESS	EMAIL ADDRESS
Tim Smith	BC EPD	PO Box 6122, Moncks Corner SC 29461	[illegible]
Lonnie Gilbert [illegible]	BCRCCG	1763 McMillian Ave	[illegible]@bcdcog.com
Nick Marino	BC EPD	PO Box 6122, Moncks Corner SC 29461	[illegible]@berkeleycountysc.gov
Eric Greenway	BC P&D	PO Box	egreenway@berkeleycountysc.gov
Edward Rogers	ACUWS	PO Box 1529 MC	[illegible]
Johnny Broome	Town of St Stephen	124 Hood Street	jlbroome@hotmail.com
Terry Thompson	Town of St. Stephen	125 [illegible] St. St Stephen	[illegible]
Jerry Barbur	Hanahan Fire dpt	5826 Campbell St Hanahan	JBarbur@city of Hanahan.com
Eddie Plowden	Berkeley Electric Co-op	414 Hwy 52 North Moncks Cor.	eddiep@BEC.coop
Daphne Wright	DRTA, LLC	104 Thousand Oaks Ct	daphnewright@comcast.net
Todd J Musselman	American Red Cross	2424 City Hall Ln. N. Chas	Todd.musselman@redcross.org
William Cather	Santee Cooper	1 Riverwood Dr Moncks Corner	William.Cather@santeecooper.com
Ken Childress Jr.	BCSD		CHILDRESSKENNETH@BCSDSCHOOLS.NET
Greg Rives	BCGIS	1003 Hwy 52	grives@berkeleycountysc.gov
Eric Shuler	TriCounty Link	305 Hatley St Moncks Corner	eric.shuler@tricountylink.com
David A. Miller	Town of Moncks Corner	118 Carolina Ave	[illegible]@[illegible]-mc.com
Mike Cochran	Hanahan P.D.	1255 Yeamans Hall Rd. Hanahan SC 29410	mcochran@cityofhanahan.com
Tricia Lisinski	211 Hotline	PO Box 63305 N Charleston	TLisinski@tuw.org

BERKELEY COUNTY
HAZARD MITIGATION PLAN
MEETING
February 28, 2014

NAME	AGENCY	ADDRESS	EMAIL ADDRESS
Marilyn Baker	Town of Moncks Corner	P.O. Box 700, [illegible]	marilyn.baker@[illegible]
CHRIS HOOPL	URS / SCDNR		CHRIS.HOOPLE@URS.com
[illegible]	Berkeley DSS	2 Belt Drive	[illegible]
D Brockington	East Cooper Pension Division	Mt Pleasant	dbrockington@[illegible].org
Kelly Pressley	Berkeley Dorchester [illegible]	98 Westview Blvd, Goose Creek, SC 29445	PressleyK@bcsdschools.net
Anthony Reid	Berkeley Dorchester Mental Health	98 Westview Blvd, Goose Creek	reidanthony@bcsdschools.net

BERKELEY COUNTY HAZARD MITIGATION PLAN MEETING – FEBRUARY 28, 2014

ATTENDEES by Organization and Title

Tom Smith, Berkeley County Emergency Management Director

Vonie Gilreath, Berkeley-Charleston-Dorchester Council of Governments Mobility Manager

Nick Marino, Berkeley County Emergency Management Homeland Security Specialist

Eric Greenway, Berkeley County Planning Department Director

Edward Rogers, Berkeley County Water and Sanitation, Customer Service Director

Johnny Broom, Town of St. Stephen, Public Works Director

Jerry Thrower, Town of St. Stephen, Public Works Services Manager

Jerry Barham, City of Hanahan Fire Department, Fire Chief

Eddie Plowden, Berkeley Electric Cooperative, Director of Marketing and Energy Services

Daphne Wright, volunteer Dorchester Services Coalition

Todd Musselman, American Red Cross, Disaster Specialist

William Gaither, Santee Cooper, Public Services Director

Ken Childress, Jr. Berkeley County School District Assistant Administrator

Greg Rines, Berkeley County GIS Director

Eric Schuler, TriCounty Link Operations Manager

David A. Miller, Town of Moncks Corner Fire Chief

Mike Cochran, City of Hanahan Police Department Police Chief

Tricia Lisinski, Trident United Way, 211 Coordinator

Chris Hobyl, SC Department of Natural Resources, Outreach Specialist

D. Brockington, East Cooper Community Outreach, Director of Programs

Betty Pressley, Berkeley-Dorchester Head Start, Head Start Family and Community Partnership Coordinator

Autumn Reid, Berkeley-Dorchester Head Start, ERSEA Specialist (Eligibility, Recruitment, Selection, Enrollment, & Attendance)

BERKELEY COUNTY

SUPERVISOR'S OFFICE
DANIEL W. DAVIS
Supervisor

SAVE THE DATE:

Berkeley County Hazard Mitigation Plan
Update Meeting
10:00AM to 11:30AM
1003 Highway 52, Moncks Corner, SC
Council Conference Room 125

On February 28th of this year, a kick off meeting was held to announce the need for Berkeley County to update the Hazard Mitigation Plan (HMP) as required by FEMA before November 2014. The updated HMP will address how the county and municipalities will plan and mitigate for multiple natural hazards including flood, wind, fire, earthquake, thunderstorms and winter/ice storms. The plan will also include descriptions and priorities of the natural hazards and assess each risk. *The project timeline is attached.*

Since February, the Berkeley County Emergency Preparedness and GIS Departments and BCDCOG staff has been reviewing the current plan, meeting with municipalities and coordinating on the mapping needs.

Please join us on **WEDNESDAY, APRIL 30th** at the Berkeley County Office Building in Council Conference Room 125 for one of three work sessions to review the suggested and provide input on the staff and municipality plan updates. The current plan is available online at http://www.bcdcog.com/BDHazardMit.htm. *Please note that this plan update is for BERKELEY COUNTY only.*

For more information or to set up an individual meeting, please contact Vonie Gilreath at 529-0400 ext. 202 or email vonieg@bcdcog.com.

Berkeley County Administration Building • P. O. Box 6122 • Moncks Corner, South Carolina [illegible] • Telephone (843) [illegible]

Berkeley County Hazard Mitigation Plan Update

AGENDA

April 30, 2014

10am

I. Welcome and Introductions

II. Status Update–Vonie Gilreath, Senior Planner, BCDCOG

a. GIS/Mapping

b. Local Government Action Plans

c. Surveys

III. Stakeholder

IV. Comments/Updates

V. Discuss Next Steps

VI. Adjourn

BERKELEY COUNTY EMERGENCY PREPAREDNESS
HAZARD MITIGATION PLAN SHAREHOLDER MEETING
1003 Hwy. 52, Moncks Corner, SC 29461

April 30, 2014
10:00 AM

NAME	AGENCY	TELEPHONE & E-MAIL
Lori Kidwell	BC EPD	843-567-0484 lkidwell@gmail.com
[illegible]	COG	
[illegible]	BC EPD	843-719-4817
Johnny Broome	St Stephen Town of	843-567-3597
KEN CHILDRESS, JR.	BERK. CTY. SCHOOL DIST.	childresskenneth@bcsd.schools.net 843-899-8782
CRAIG NESSEL	BC GIS	cnessel@berkeleycountysc.gov 843 719-4698
Alex Shook	Berkeley Citizens, Inc	843-761-0311
Lt. Mark Fields	Moncks Corner PD	843-719-7532

BERKELEY COUNTY HAZARD MITIGATION PLAN MEETING –April 30, 2014

ATTENDEES by Organization and Title

Lori Kidwell, Berkeley County Emergency Management & Homeland Security Specialist

Vonie Gilreath, Berkeley-Charleston-Dorchester Council of Governments Mobility Manager

Tom Smith, Berkeley County Emergency Management Director

Johnny Broom, Town of St. Stephen, Public Works Director

Ken Childress, Jr., Berkeley County School District Assistant Administrator

Craig Nessel, Berkeley County GIS, GIS Analyst II

Alice Shook, Berkeley County Citizens, Executive Director

Lt. Mark Fields, Moncks Corner Police Department

BERKELEY COUNTY
EMERGENCY PREPAREDNESS

Berkeley County Hazard Mitigation Plan Committee Meeting
Tuesday, September 30th
10:00 AM to 11:30 AM

Berkeley County Emergency Operations Center
223 Live Oak Drive, Moncks Corner, SC

AGENDA

I. Welcome and Introductions

II. Presentation: Vonie Gilreath, BCDCOG

a. Risk Assessment

b. Local Government Action Plans

c. Goals and Objectives

d. Maps

III. Stakeholder Comments/Updates

IV. Discuss Next Steps

V. Adjourn

P.O. Box 6122 • 223 North Live Oak Drive • Moncks Corner, South Carolina 29461-6122
Moncks Corner (843) 719-4166 • Charleston (843) 723-3600 • St. Stephen (843) 567-3136 • Fax (843) 719-4811

Daniel Island Neighborhood Association

October Meeting

Tuesday, October 7, 2014: Holy Cross Church

- President Williams called the meeting to order at 7:05 PM
- Roll Call of Officers:
  - President – D. Williams (Present)
  - Vice President – T. Neary (away)
  - Treasurer – Jim Morrill (Present)
  - Secretary – Bill Hart (away)
- Minutes from Last Meeting were approved
- Treasurer's Report: Jim Morrill
  DINA had $2,074 in the checking account starting last month. We had 6 new memberships which brought in $60. Expenses were $6 for refreshments, $25 for signs and $30 for brochures. This leaves $2,071 in the account.
- New Business:
  DINA President Dave Williams reminded the membership upcoming election of officers and committee heads for next year. People are encouraged to run for office and volunteer for committees.

- Speakers

  Jane Baker: 1. The Commemorative Park is going well. There are still opportunities to honor or remember family members or friends. The opening is scheduled for Nov 11th. 2. The annual meetings will be held on Dec 1st. For the Park Association it will be at the Daniel Island Club (5:00 pm). The rest of the Island will be at Holy Cross Church (6:30 pm). 3. Benefitfocus request a stoplight be installed at the intersection of Fairchild and River Landing. In addition, it has been requested that there be a 4-way stop at the intersection of Fairchild and Daniel Island Drive.

  In response to a comment, there was a discussion about the poor emergency response time associated with a problem on Daniel Island. Tim Callanan explained that there had been an accident on Clements Ferry Road at that time the ambulance had been dispatched there so the responding ambulance was from another area. Tim also discussed the location issue and asked that an address or the streets from the nearest intersection be provided when calling the emergency dispatch. Tim is conducting further research on this incident.

  Rindy Ryan: She provided background on her involvement with the schools along with her professional experience. She is running for the open School Board position. She was provided the opportunity to speak similar to that given to Mac McQuillin at the last meeting.
  Note: There is an Oct 14th forum for the public to ask questions of the candidates.

  Berkeley County Mitigation Team: They provided a review of the process used, natural events included (hurricanes, tornadoes, winter storms, earthquakes, floods

and other actions), risks and actions to be taken. The full report will be on the county website at the end of November.

Committee Reports:

- Land Use and Zoning—no report
- Safety – Frank Walsh reviewed several items his committee has reviewed to make 7 Farms safer for pedestrians:
  - Lighted crosswalk
  - Speed bumps or planters
  - Jane Baker suggested rumble strips as possibility
  - These will have to go to the Mayor's Office.
- Tree Trimming – no report
- Web & Social Media – no report
- Membership—Laurie Steinke reported that membership continues to grow and asked people get a neighbor or friend to join DINA.

- Next meeting December 2, 2014

Other

- There was a comment about the impact of Benefitfocus employees parking and speeding in the residential areas instead of parking in the designated lot and taking a bus. This will be referred to a committee.

- President Williams adjourned the meeting at 8:15 PM

Submitted by:
James D. Morrill for William Hart

Officers' Contact Information

President:	Dave Williams	president@dineighborhoodsassociation.org
Vice President:	Tom Neary	vp@dineighborhoodsassociation.org
Treasurer:	Jim Morrill	treasurer@dineighborhoodsassociation.org
Secretary:	Bill Hart	secretary@dineighborhoodsassociation.org

Committee Chairs' Contact Information

Membership:	Laurie Steinke	membership@dineighborhoodsassociation.org
Land Use & Zoning:	Bob Jacobs	zoning@dineighborhoodsassociation.org
Safety:	Frank Walsh	safety@dineighborhoodsassociation.org
Tree Trimming:	Bob Sauer	treetrimming@dineighborhoodsassociation.org
Web & Social Media:	Renee Flowers Jay Karen	webmaster@dineighborhoodsassociation.org

Berkeley County Hazard Mitigation Plan Presentation

Daniel Island, SC

October 7, 2014
7 PM

SIGN-IN

NAME	ADDRESS	PHONE	EMAIL
[illegible]	2324 Daniel Island Dr	315-597-1551	[illegible]
Kindy Ryan	2460 Augusta St	843-437-0156	[illegible]
[illegible]	1205 [illegible]	843-312-0931	[illegible]
Stewart & Marcia Miller	1135 [illegible] St	843-388-7702	[illegible]
[illegible] + Frank Walsh	4010 [illegible] St		
Jim & Marian Chambers	1523 Water View St	312-5580	[illegible]
Marc McQuilla	2447 [illegible] St	843-707-1341	[illegible]
Mac McBride	146 [illegible]		
Linda McBride	"		
M. Hamilton	190 [illegible]	814-441-0795	[illegible]
MARK RENCHEC	135 PIERVIEW ST		[illegible]
[illegible] Parker	30 [illegible]	843-471-1501	
[illegible]	1118 BARFIELD ST	843-377-8335	
SHIRLEY [illegible]	"	"	

Berkeley County Hazard Mitigation Plan Presentation

Daniel Island, SC

October 7, 2014
7 PM

SIGN-IN

NAME	ADDRESS	PHONE	EMAIL
Carolyn Gott	1548 Wando Landing	291-589-5513	--
Freddy Micki [illegible]	119 Bounty Rd	843-377-8155	--
Albert Ivan Vitale	107 Cartwright St	843-884-1484	
George/Lynda Tucker	144 Cartright St	412-320-1705	
Ken Kimball	130 Fairbanks [illegible]		
Graham Brown	507 [illegible] Corner St DI	843-849-9654	
Tim Wassar	2242 Daniel Island Dr	607-727-4727	[illegible].com
Donna Widener			
Jim Murray	71 Dalton St		
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THANKS [illegible]

BERKELEY COUNTY EMERGENCY PREPAREDNESS

223 North Live Oak Drive, Moncks Corner, SC 29461
HMPG APPLICATION UPDATE MEETING

OCTOBER 21, 2014
1:00 PM

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Steve Coffey	BC EMS	steve.coffey@berkeleycountysc.gov

BERKELEY COUNTY HAZARD MITIGATION PLAN MEETING –October 21, 2015, 2014

ATTENDEES by Organization and Title

Nancy Parker, FEMA Region 3, Hazard Mitigation Specialist

Lori Kidwell, Berkeley County Emergency Management & Homeland Security Specialist

Tom Smith, Berkeley County Emergency Management Director

Bernard Gilliard, SC DHEC Program Manager

Howard von Dijik, SCEMD, HMPG Specialist

Steven Cotter, Berkeley County EMS Director

HMPG GRANT MEETING 11/26/2014

1. EMS GRANT
2. TRI-COUNTY COMMUNITY GRANT
3. WESTVIEW ELEMENTARY GRANT

Print Name	Sign
C. Daniel Thrower	
T. Smith	
Michael Lewis	
Lori Kidwell	
David Taschner	