

Charleston Regional Hazard Mitigation Plan



2017 -2018

**Jurisdictions Represented and Participating in
the Charleston Regional Hazard Mitigation Plan**

CRS Jurisdictions processed by Charleston County:

Unincorporated Charleston County
Town of Awendaw
Town of Hollywood
Town of James Island
Town of Lincolnville
Town of McClellanville
Town of Meggett
Town of Ravenel
Town of Rockville
Town of Seabrook Island

Other CRS Jurisdictions:

City of Charleston
City of Folly Beach
City of Isle of Palms
City of North Charleston
Town of Kiawah Island
Town of Mt. Pleasant
Town of Sullivan's Island

Other Government Entities and Partners Represented and Participating in This Plan:

Charleston County Parks & Recreation Commission
Charleston County School District
Charleston Water System
College of Charleston
Cooper River Parks & Playground Commission
James Island Public Service District Commission
Mt. Pleasant Water Works Commission
North Charleston District
North Charleston Sewer District
Roper St. Francis
St. Andrews Parish Park & Recreation Commission
St. Andrews Public Service District
St. John's Fire District Commission
St. Paul's Fire District Commission

CONTACT US ABOUT THE PLAN:

The Charleston Regional Hazard Mitigation Plan involves all participating jurisdictions and partners but is maintained by Charleston County's Building Inspection Services Department. This plan is published on the Charleston County Building Inspection Services website and is available in the department's office.

Public comment on the Plan is always welcome and incorporated into the yearly updates. For any questions on the Plan or for information on how to be involved with the Plan, please contact Charleston County Building Inspection Services. Thank you for your interest.

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Table of Contents

SECTION 1 INTRODUCTION	9
1.1 – BACKGROUND	9
1.2 – COMMUNITY PROFILE	12
<i>Figure 1.1 Charleston Weather Averages.....</i>	<i>12</i>
<i>Figure 1.2 Monthly Highs and Lows for Charleston County.....</i>	<i>12</i>
<i>Figure 1.3 Local, State, and National Population Growth¹.....</i>	<i>13</i>
<i>Figure 1.4 Charleston Age Profile¹</i>	<i>13</i>
<i>Figure 1.5 Charleston Employment from 2016-17³.....</i>	<i>13</i>
<i>Figure 1.6 Charleston Race Profile¹.....</i>	<i>13</i>
1.3 – GOALS.....	15
1.4 – THE PLANNING PROCESS	15
1.5 – HAZARD IDENTIFICATION AND RISK ASSESSMENT.....	16
1.6 – HAZARD ASSESSMENT	16
1.7 – PROBLEM ASSESSMENT.....	17
1.8 – REVIEW OF POSSIBLE ACTIVITIES	17
1.9 – ADOPTING RESOLUTION	18
1.10 – ACTION PLAN	18
1.11 – IMPLEMENTATION PLAN.....	19
1.12 – CONCLUSION	19
<i>Attachment 1-A: Project Impact Organization Chart</i>	<i>20</i>
SECTION 2 GOALS	21
SECTION 3 PLANNING PROCESS	23
3.1 – PRE PLANNING REQUEST FOR INPUT.....	23
3.2 – PLANNING COMMITTEE.....	24
3.3 – PUBLIC INPUT.....	25
3.4 – LOCAL JURISDICTION ADOPTION	26
3.5 – IMPLEMENTATION PLAN.....	26
<i>Table 3-1: Hazard-Related, Land Use and/or Development Plans in the Charleston Region.....</i>	<i>28</i>
3.6 – PLANNING PROCESS SUMMARY	29
<i>Attachment 3-A1: Citizen Survey.....</i>	<i>32</i>
<i>Attachment 3-A2: Jurisdiction Survey.....</i>	<i>34</i>
<i>Attachment 3-B: Community Rating System Jurisdiction Members of the Charleston Regional Hazard Mitigation & Public Information Plan Committee.....</i>	<i>40</i>
<i>Attachment 3-C: Stakeholder Members of the Hazard Mitigation & Public Information Plan Committee.....</i>	<i>41</i>
<i>Attachment 3-D: Other Participating Partners of the Hazard Mitigation & Public Information Plan Committee</i>	<i>42</i>
<i>Attachment 3-E: Project Impact Committee Members Contact List</i>	<i>43</i>
<i>Attachment 3-F: Charleston Area Local Governments/Entities Adopting Records.....</i>	<i>46</i>
SECTION 4 HAZARD ASSESSMENT	47
4.1 – PRIORITIZATION.....	47
4.2 – HURRICANE	50
4.3 – FLOODING	54
4.4 – SEA LEVEL RISE.....	57
4.5 – EARTHQUAKE	60

4.6 – TORNADO	63
4.7 – HAZARDOUS MATERIALS	65
4.8 – TERRORISM	67
4.9 – WILDFIRE	70
4.10 – TSUNAMIS.....	72
4.11 – DAM FAILURE	73
4.12 – RIP CURRENTS.....	75
4.13 – SEVERE STORM	78
4.14 – DROUGHT	80
4.15 – WINTER WEATHER	83
Table 4.1 – Summary of Jurisdiction Affected	86
Table 4.2 – Summary of Hazard Extent	87
Table 4.3 – Summary of Hazard Probability.....	89
SECTION 5 PROBLEM ASSESSMENT	91
5.1 – HAZARD VULNERABILITY.....	91
Table 5-1.....	92
Table 5-2.....	95
Table 5-3.....	97
Table 5-4.....	97
Table 5-5.....	99
Table 5-6.....	99
5.2 – VULNERABLE BUILDINGS	100
Table 5-7.....	110
Table 5-8.....	111
5.3 – INFRASTRUCTURE VULNERABILITY	112
5.4 – KNOWN FLOOD DAMAGES	119
Table 5-9.....	120
5.5 – PAST FLOOD IMPACTS.....	121
5.6 – EMERGENCY WARNING NEEDS	121
5.7 – CRITICAL FACILITIES	125
5.8 – NATURAL AND BENEFICIAL FUNCTIONS OF FLOODPLAINS	129
5.9 – DEVELOPMENT AND POPULATION TRENDS.....	132
Table 5-10	133
Table 5-11	134
5.10 – ECONOMIC IMPACT	135
5.11 – RESILIENCY TO HAZARDS	136
Table 5-12 Resiliency Questions Posed to Jurisdictions.....	138
Attachment 5-A: Largest Private Sector Employer in Charleston Metro Area December 2016	139
Attachment 5-B: Largest Public Sector Employer in Charleston Metro Area December 2016..	139
Attachment 5-C: Repetitive Loss Areas within the Charleston Region	140
Attachment 5-D: Charleston Region Buildings Vulnerable to Flooding Due to Location in the Special Flood Hazard Area (SFHA) Only	145
Attachment 5-E: Charleston Region Buildings Vulnerable to Flooding Due to Year of Construction and Location in the Special Flood Hazard Area (SFHA)	146
Attachment 5-F: Charleston Region Average Valuation of Buildings and Mobile Homes.....	147
Attachment 5-G: Charleston Region Average Valuation of Site-Built Buildings by Flood Zone	148
SECTION 6 POSSIBLE ACTIVITIES	149
6.1 – PRIORITIZING PROJECTS.....	149
6.2 - PUBLIC INFORMATION PLAN	150

6.3 – PREVENTIVE ACTIVITIES	150
Table 6-1	151
6.4 – PROPERTY PROTECTION.....	152
Table 6-2	153
6.5 – NATURAL AND BENEFICIAL FUNCTIONS OF FLOODPLAINS/RESOURCE PRESERVATION.....	155
Table 6-3	156
6.6 – EMERGENCY SERVICES.....	157
Table 6-4	158
6.7 – STRUCTURAL PROJECTS	159
Table 6-5	161
6.8 – PUBLIC INFORMATION PLAN ACTIVITIES	162
Table 6-6	163
Attachment 6-A: Chart of Project Prioritization Factors Based Upon Questionnaire Responses	165
Attachment 6-B: Chart of Property Protection Project Prioritization Based Upon Questionnaire Responses	166
Attachment 6-C: Drainage Improvement Projects	167
SECTION 7 ADOPTING RESOLUTION AND JURISDICTION-SPECIFIC ACTION PLANS	180
7.1 – UNINCORPORATED CHARLESTON COUNTY	182
Resolution for Adoption	182
Action Plan for Unincorporated Charleston County	183
Status Report for Unincorporated Charleston County	195
7.2 – TOWN OF AWENDAW	213
Resolution for Adoption	213
Action Plan for the Town of Awendaw, SC	214
Status Report for the Town of Awendaw, SC	215
7.3 – CITY OF CHARLESTON	216
Resolution for Adoption	216
Action Plan for the City of Charleston, SC	218
Status Report for the City of Charleston, SC	221
7.4 – CITY OF FOLLY BEACH	225
Resolution for Adoption	225
Action Plan for the City of Folly Beach, SC	226
Status Report for the City of Folly Beach, SC	231
7.5 – TOWN OF HOLLYWOOD	236
Resolution for Adoption	236
Action Plan for the Town of Hollywood, SC	237
Status Report for the Town of Hollywood, SC	238
7.6 – CITY OF ISLE OF PALMS	239
Resolution for Adoption	239
Action Plan for the City of Isle of Palms, SC	240
Status Report for the City of Isle of Palms, SC	243
7.7 – TOWN OF JAMES ISLAND	246
Resolution for Adoption	246
Action Plan for the Town of James Island, SC	247
Status Report for the Town of James Island, SC	260
7.8 – TOWN OF KIAWAH ISLAND.....	266
Resolution for Adoption	266
Action Plan for the Town of Kiawah Island, SC	267
Status Report for the Town of Kiawah Island, SC	272
7.9 – TOWN OF LINCOLNVILLE.....	279

<i>Resolution for Adoption</i>	279
<i>Action Plan for the Town of Lincolnton, SC</i>	280
<i>Status Report for the Town of Lincolnton, SC</i>	281
7.10 – TOWN OF McCLELLANVILLE.....	282
<i>Resolution for Adoption</i>	282
<i>Action Plan for the Town of McClellanville, SC</i>	283
<i>Status Report for the Town of McClellanville, SC</i>	285
7.11 – TOWN OF MEGGETT.....	287
<i>Resolution for Adoption</i>	287
<i>Action Plan for the Town of Meggett, SC</i>	288
<i>Status Report for the Town of Meggett, SC</i>	289
7.12 – TOWN OF MT. PLEASANT.....	290
<i>Resolution for Adoption</i>	290
<i>Action Plan for the Town of Mount Pleasant, SC</i>	292
<i>Status Report for the Town of Mount Pleasant, SC</i>	303
7.13 – CITY OF NORTH CHARLESTON.....	320
<i>Resolution for Adoption</i>	320
<i>Action Plan for the City of North Charleston, SC</i>	321
<i>Status Report for the City of North Charleston, SC</i>	333
7.14 – TOWN OF RAVENEL.....	344
<i>Resolution for Adoption</i>	344
<i>Action Plan for the Town of Ravenel, SC</i>	345
<i>Status Report for the Town of Ravenel, SC</i>	346
7.15 – TOWN OF ROCKVILLE.....	347
<i>Resolution for Adoption</i>	347
<i>Action Plan for the Town of Rockville, SC</i>	348
<i>Status Report for the Town of Rockville, SC</i>	349
7.16 – TOWN OF SEABROOK ISLAND.....	350
<i>Resolution for Adoption</i>	350
<i>Action Plan for the Town of Seabrook Island, SC</i>	351
<i>Status Report for the Town of Seabrook Island, SC</i>	352
7.17 – TOWN OF SULLIVAN’S ISLAND.....	353
<i>Resolution for Adoption</i>	353
<i>Action Plan for the Town of Sullivan’s Island, SC</i>	354
<i>Status Report for the Town of Sullivan’s Island, SC</i>	360
7.18 – CHARLESTON COUNTY PARKS & RECREATION COMMISSION.....	367
<i>Resolution for Adoption</i>	367
<i>Action Plan for the Charleston County Park and Recreation Commission</i>	368
<i>Status Report for the Charleston County Park and Recreation Commission</i>	370
7.19 – CHARLESTON COUNTY SCHOOL DISTRICT.....	372
<i>Resolution for Adoption</i>	372
<i>Action Plan for the Charleston County School District</i>	373
<i>Status Report for the Charleston County School District</i>	375
7.20 – CHARLESTON WATER SYSTEM.....	377
<i>Resolution for Adoption</i>	377
<i>Action Plan for the Charleston Water System</i>	378
<i>Status Report for the Charleston Water System</i>	384
7.21 – COLLEGE OF CHARLESTON.....	390
<i>Resolution for Adoption</i>	390
<i>Action Plan for the College of Charleston</i>	391
<i>Status Report for the College of Charleston</i>	394
7.22 – COOPER RIVER PARKS & PLAYGROUND COMMISSION.....	397

<i>Resolution for Adoption</i>	397
<i>Action Plan for the Cooper River Parks and Playground Commission</i>	398
<i>Status Report for the Cooper River Parks and Playground Commission</i>	400
7.23 – JAMES ISLAND PUBLIC SERVICE DISTRICT COMMISSION	402
<i>Resolution for Adoption</i>	402
<i>Action Plan for James Island Public Service District</i>	403
<i>Status Report for James Island Public Service District</i>	408
7.24 – MT. PLEASANT WATER WORKS COMMISSION.....	414
<i>Resolution for Adoption</i>	414
<i>Action Plan for Mount Pleasant Waterworks</i>	416
<i>Status Report for Mount Pleasant Waterworks</i>	417
7.25 – NORTH CHARLESTON DISTRICT	418
<i>Resolution for Adoption</i>	418
<i>Action Plan for the North Charleston District</i>	419
<i>Status Report for the North Charleston District</i>	422
7.26 – NORTH CHARLESTON SEWER DISTRICT	425
<i>Resolution for Adoption</i>	425
<i>Action Plan for the North Charleston Sewer District</i>	426
<i>Status Report for the North Charleston Sewer District</i>	430
7.27 – ROPER ST. FRANCIS.....	434
<i>Resolution for Adoption</i>	434
<i>Action Plan for Roper St. Francis</i>	435
<i>Status Report for Roper St. Francis</i>	437
7.28 – ST. ANDREWS PARISH PARK & RECREATION COMMISSION	439
<i>Resolution for Adoption</i>	439
<i>Action Plan for St. Andrew’s Parish Parks and Playground Commission</i>	440
<i>Status Report for St. Andrew’s Parish Parks and Playground Commission</i>	441
7.29 – ST. ANDREWS PUBLIC SERVICE DISTRICT	442
<i>Resolution for Adoption</i>	442
<i>Action Plan for the St. Andrews Public Service District</i>	443
<i>Status Report for the St. Andrews Public Service District</i>	445
7.30 – ST. JOHN’S FIRE DISTRICT COMMISSION.....	447
<i>Resolution for Adoption</i>	447
<i>Action Plan for the St. John’s Fire District</i>	448
<i>Status Report for the St. John’s Fire District</i>	449
7.31 – ST. PAUL’S FIRE DISTRICT COMMISSION.....	450
<i>Resolution for Adoption</i>	450
<i>Action Plan for the St. Paul’s Fire District</i>	451
<i>Status Report for the St. Paul’s Fire District</i>	453
SECTION 8 APPENDICES	455
A.1 – OVERVIEW OF THE PUBLIC INFORMATION PLAN (PIP)	456
A.2 – OVERVIEW OF THE COMMUNITY RATING SYSTEM (CRS)	519
<i>Table A.2-1: CRS Community Ratings and Discounts</i>	520
A.3 – OVERVIEW OF PROJECT IMPACT	521
A.4 – PUBLIC MEETING NOTICES 2013-2017	522
A.5 – PREVIOUS YEARLY MEETING MINUTES	531
A.6 – CHARLESTON REGIONAL HAZARD MITIGATION PLAN SUMMARY OF CHANGES 2013-2017	561

Section 1 Introduction

1.1 - Background

The *Charleston Regional Hazard Mitigation Plan* is the result of a community wide effort to determine appropriate mechanisms to address the various types of hazards facing the Charleston Region. The *Charleston Regional Hazard Mitigation Plan* was developed as a required element of *Project Impact*, an ongoing initiative sponsored by the Federal Emergency Management Agency (FEMA) to assist local communities in the Region to become more disaster resistant through cooperative efforts of the private, public and non-profit sectors.

The **goals** of the program include, but are not limited to:

1. Protecting the lives of our citizens to the best of our abilities from natural and man-made environmental hazards.
2. Assessing the extent of our vulnerability to natural and man-made environmental hazards.
3. Establishing cooperative relationships between the public, private and non-profit sectors to enhance our preparedness, response, recovery, and mitigation for hazard events.
4. Educating our citizens regarding their vulnerability to natural hazards and steps which may be taken to reduce that vulnerability.
5. Reducing vulnerability of our infrastructure and built environment to natural and man-made environmental hazards through specific mitigation projects that will also consider the historic and environmental resources of our area.

The *Charleston Regional Hazard Mitigation Plan* was developed as a required element of *Project Impact*, and in 1998 two committees were formed: the *Hazard Mitigation Plan Committee* and the *Project Impact Advisory Committee*.

The *Advisory Committee* is comprised of the following subcommittees: *Structural Projects, Natural Benefits, Emergency Services, Property Protection and Preventative Activities*.

In 2012, the *Public Information Committee* merged with the *Hazard Mitigation Plan Committee*, to form the *Hazard Mitigation Plan & Public Information Committee*. In 2013 the *Charleston Regional Hazard Mitigation Plan & Public Information Committee* refined the roles to comply with the *Program for Public Information (PPI)* requirements of the *2013 Community Rating System Manual*. Because public information is a key component in protecting the lives of our citizens, merging the two committees into one has proven to be the best way to have the most participation and input from all areas of interest.

As part of an on-going effort to mitigate loss of life and property damage associated with flooding events, all jurisdictions in the County presently active in the National Flood Insurance Program (NFIP) - Community Rating System (CRS) have established a *Public*

Information Plan (PIP). The *Public Information Plan* is a stand-alone document that is Appendix A.1 at the end of this Plan. The purpose of the document is to collectively evaluate public information efforts across the different elements found throughout the Plan, from different types of hazards, to different outreach methods, topics and messages that should be addressed, and assessing the needs of the community, this document addresses all areas that incorporate public information activities. This *PIP* will serve all jurisdictions that have recognized the commonality of those natural disasters that pose the greatest threats to the Charleston County's Project Impact area. Establishing a single multi-jurisdictional *PIP* eliminates duplicity of efforts and resources for each jurisdiction. Membership for this function has been established within the County's Project Impact initiative, with primary responsibilities placed within the *Hazard Mitigation & Public Information Plan Committee*. The other subcommittees of Project Impact offer assistance in the form of reviewing and providing recommendations on proposed and existing outreach projects. Attachment 1-A is the Project Impact Organization Chart. Twenty-five of the activities of the 2017-2018 *Charleston Regional Hazard Mitigation Plan* action plan are specific *PIP* initiatives.

The *Charleston Regional Hazard Mitigation Plan* is the result of a community-wide effort to determine appropriate mechanisms to address the various types of hazards facing the Charleston Region. The *Hazard Mitigation Plan & Public Information Committee*, which drafted this plan, consisted of members from each of the local government entities within Charleston County, State and Federal agencies with a focus on hazard mitigation, and from partners within the non-profit and private sectors.

The purpose of this plan update is to continue guiding hazard mitigation efforts to better protect the people and property in the County from the effects of hazard events. This plan demonstrates the community's commitment to reducing risks from hazards, and serves as a tool to help decision makers direct mitigation activities and resources. This plan was also developed to ensure Charleston County and participating partners' continued eligibility for certain federal disaster assistance. Maintenance of this plan also earns points for the National Flood Insurance Program's Community Rating System (CRS), which provides for lower flood insurance premiums in CRS communities.

Overview of Project Impact & the Charleston Regional Hazard Mitigation Plan

Project Impact was a Federal Emergency Management Agency (FEMA) sponsored initiative aimed at assisting communities in becoming more disaster resistant. Project Impact is intended to involve the public, private and non-profit sectors in forming partnerships to achieve the goal of reducing the amount of loss associated with a hazard event. This initiative began in 1997 with seven pilot communities, and ultimately expanded to approximately 250 communities nation-wide. Charleston County was selected as the 1999 Project Impact community for the State of South Carolina. All of the local jurisdictions within Charleston County have partnered together in the Project Impact initiative and still participate despite the defunding of the national project in 2002.

The four phases of the Project Impact initiative are to build community partnerships, assess risks, prioritize needs, build support and communicate on addressing hazard preparedness and response. The Project Impact initiative is intended to address any types of hazards, which may strike our community. The *Charleston Regional Hazard Mitigation Plan* addresses each of these types of hazards and serves as a mechanism for the assessing risks and prioritizing needs. This plan serves as the governing document for project selection associated with the Charleston County Project Impact initiative.

Project Impact and the *Charleston Regional Hazard Mitigation Plan*, fully complement each other and are therefore fully integrated with each other for the Charleston Region. Applicable efforts undertaken through either program are considered as activities for both programs. See Attachment 1-A: Project Impact Organization Chart.

1.2 - Community Profile

Charleston County's rich blend of culture, economic activity, environmental beauty, and immense historical preservation makes it one of the most distinguished counties in the nation. A recognized leader, Charleston County is a proud community that strives to protect both its historic treasures and its environment, while still keeping an eye toward future development and citizens' needs.

The Land

Charleston County is located along the southeastern coast of South Carolina. It encompasses approximately 916 square miles of land, marshes, rivers, and wetlands with a coastline that stretches nearly 100 miles along the Atlantic Ocean. Charleston County contains vital protected areas, including the Francis Marion National Forest, Cape Romain National Wildlife Refuge, and ACE Basin National Wildlife Refuge.

The Climate

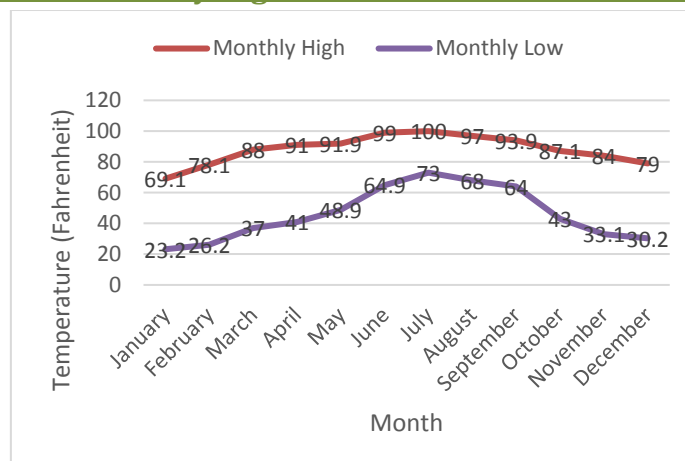
Nestled alongside the Ashley and Cooper rivers as they flow into the Atlantic Ocean, Charleston County enjoys a subtropical climate—with mild winters and warm, sunny summers. On average, July is our warmest month, January is our coldest, and August gets the most rainfall. In January, the average temperature is 48.5 degrees Fahrenheit; in July, the average temperature is 82 degrees Fahrenheit. The first frost usually occurs in December and the last frost usually occurs in February. Fluctuations in these trends happen every year. The year 2016 saw everything from three-digit temperatures to freezing conditions.

Figure 1.1 Charleston Weather Averages

Annual high temperature:	76.1°F
Annual low temperature:	55.6°F
Average temperature:	65.85°F
Average annual precipitation - rainfall:	51.06 inch
Days per year with precipitation - rainfall:	119 days
Annual hours of sunshine:	2993 hours

Source: US Climate Data

Figure 1.2 Monthly Highs and Lows for Charleston County



The People

Charleston County is home to an estimated 396,484 people¹. With a median age of 37.1, most of the county's population is old enough to work and young enough to continue doing so for years to come. 65.1 percent of the county's population is in the civilian labor force, earning a median household income of \$53,437¹. An estimated 14.9 percent of the population lives in poverty². Around 89.7 percent of Charleston County residents have a high school degree or higher level of education, while 40.4 percent hold a bachelor's degree or higher.¹ Caucasian and black races make up 68.2 percent and 28.1 percent of the population, respectively¹. Just over half of the county's population is female.

Figure 1.3 Local, State, and National Population Growth¹

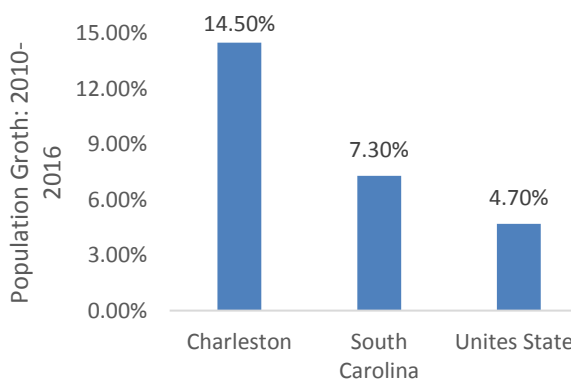


Figure 1.4 Charleston Age Profile¹

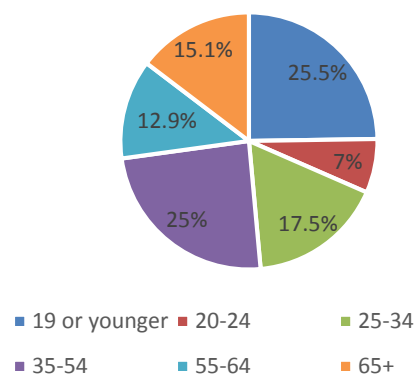
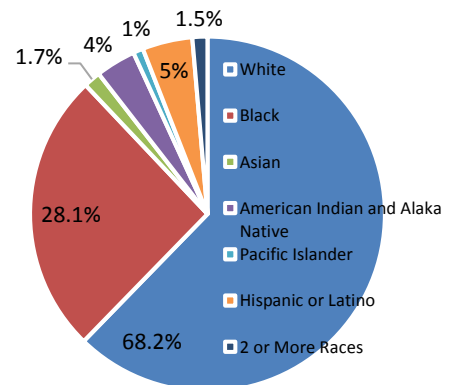


Figure 1.5 Charleston Employment from 2016-17³

Charleston employment (numbers in thousands)	Change from Apr. 2016	
	Apr. 2017	Number Per
Total nonfarm	352.5	6.7
Mining, logging, and construction	20.1	1.2
Manufacturing	26.2	0.7
Trade, transportation, and utilities	64	0.7
Information	5.8	-0.6
Financial activities	14.5	0.1
Professional and business services	54.7	2.6
Education and health services	38.9	0.4
Leisure and hospitality	47.6	0.7
Other services	13.9	0.1
Government	66.4	0.8

Figure 1.6 Charleston Race Profile¹



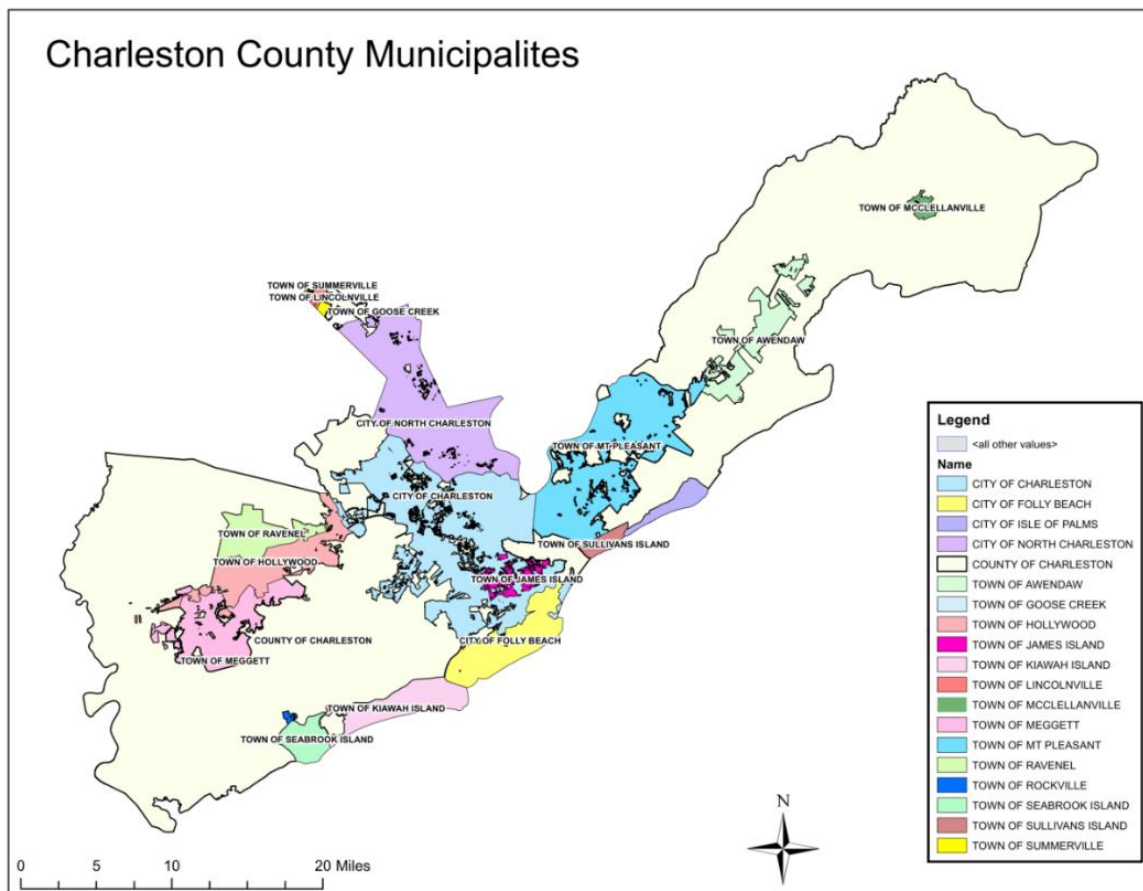
¹ U.S. Census Bureau

² 2015 Small Area Income and Poverty Estimates (SAIPE)

³ U.S. BLS, Current Employment Statistics

The Government

Charleston County uses the Council-Administrator form of local government. This form allows a board to hire an administrator to carry out council policy and personnel functions. The clerk of court, coroner and sheriff are constitutional officers that are elected countywide to four-year terms. Other officers elected countywide to four-year terms are auditor, treasurer and probate judge. South Carolina's counties are granted enough authority to expand their services beyond traditional limited county purposes. With these enhanced powers, the counties are able to provide a diverse range of services such as water treatment, transportation, alcoholism and drug programs, and libraries. Charleston County consists of the unincorporated areas and the municipalities of the Town of Awendaw; Town of Hollywood; Town of James Island; Town of Lincolnville; Town of McClellanville; Town of Meggett; Town of Ravenel; Town of Rockville; Town of Seabrook Island; the City of Charleston; City of Folly Beach; City of Isle of Palms; Town of Kiawah Island; Town of Mount Pleasant; City of North Charleston; and Town of Sullivan's Island.



1.3 - Goals

The Section 2 *Goals* of the *Charleston Regional Hazard Mitigation Plan* compliment the goals of the Charleston County area Project Impact initiative. In general, these goals are intended to minimize future losses of life and property associated with hazard events facing the Charleston Region. Since this plan is a regional plan intended for adoption by the local government entities, the *Charleston Regional Hazard Mitigation & Public Information Plan Committee* provided flexibility within this plan to enable local government and entities with specific goals to include those in this section as they deemed appropriate.

1.4 - The Planning Process

The *Charleston Regional Hazard Mitigation Plan* is unique in the fact the Plan is updated annually and is a joint effort of all local governmental jurisdictions. This allows a continual planning process to keep the *Plan* current and the history more dynamic.

Initially, the planning process utilized a questionnaire regarding hazard mitigation (assessment and emergency preparedness), project prioritization, and resiliency (coordinated with Resilient America) via online through Google Forms and email as well as through meetings with professional organizations to solicit input regarding the content of the *Plan*. Public meetings were also conducted in multiple areas in the Region to obtain additional input from citizens and create public awareness of the *Charleston Regional Hazard Mitigation Plan*. These efforts were repeated in the years 2004, 2008, and 2012, as well as 2017 to maintain an updated profile. The results of the latest questionnaire are included in this *Plan*.

The *Plan* has been drafted in such a manner that the local government entities within Charleston County are able to prepare an action plan for their respective entities and adopt this *Plan* for their use within their government entity. This cooperative approach enables the Region to have a more standardized way of addressing hazards, which face the entire County and avoids duplication of effort that would occur if all of the government entities individually undertook this type of planning initiative.

As a strengthening of this cooperation among the communities, a *Program for Public Information (PPI)* was established for the 2013 *Plan* as part of the Region's on-going efforts to better inform its citizenry on proper preparedness and mitigation measures to be undertaken to make the Region more resilient to those natural hazards that pose the greatest threat of loss and damage. The *Program for Public Information (PPI)* was renamed the *Public Information Plan (PIP)*. The *Public Information Plan* is now a document that is both a part of the *Charleston Regional Hazard Mitigation Plan*, but can also serve as a stand-alone document. This allows the *Hazard Mitigation and Public Information Plan Committee* to enhance upon existing projects and add new projects as it sees fit annually. The Committee's project recommendations are an essential component of the planning process by integrating new ideas and projects that will ultimately fulfill the *Public Information Plan's* goal of educating the public.

1.5 – Hazard Identification and Risk Assessment

A *Hazard Identification and Risk Assessment Report* is a systematic way to identify and analyze hazards to determine their scope, impact, and the vulnerability of the built environment to such events. Through the yearly *Charleston Regional Hazard Mitigation Plan*, such a systematic process and assessment has already been put into place for the area. To avoid duplication, a separate hazard identification and risk assessment document is not included due to the fact each component is already addressed throughout this plan.

Each aspect of a typical report is discussed in the *Charleston Regional Hazard Mitigation Plan*, including identification of hazards and resource requirements, profiles of previous hazardous events, vulnerability assessments, estimates of potential losses by a variety of simulations, local outreach and education programs, emergency operations procedures, inventories, plans, and shortfalls.

In addition, due to the fact the *Charleston Regional Hazard Mitigation Plan* encompasses a regional perspective rather than a single municipality or organization, the effect is a more complete and coordinated plan to improve the safety of citizens against potential natural and manmade hazards. The *Charleston Regional Hazard Mitigation & Public Information Plan Committee* works with each government or adopting entity, and together this collaborative regional plan for hazard mitigation can also serve as a *Hazard Identification and Risk Assessment Report*.

1.6 – Hazard Assessment

The *Charleston Regional Hazard Mitigation Plan* is based upon the results of the questionnaires and the comments received through both committee and public meetings. Section 4 *Hazard Assessment* of the *Plan* includes a ranking of the types of hazards facing the Charleston Region, with hurricanes being the most serious threat, followed by flooding, tornadoes, wildfires, hazardous materials, earthquakes and sea level rise. Additional hazards for which the possibility of occurrence is much more remote or non-existent, such as dam failures and tsunamis are now discussed in the *Plan* to meet the *Disaster Mitigation Act of 2000* requirements. The hazard description section of the *Plan* provides a brief description of the nature of each identified hazard within the Charleston Region. The discussion section of the *Plan* provides a more detailed description of the history of hazard event incidents in the Charleston Region. The Charleston Region has had numerous, mostly localized, hazard events and a few large-scale hazard events (e.g. Hurricane Hugo in 1989, the earthquake of 1886, Hurricane Matthew in 2016) throughout our history.

1.7 - Problem Assessment

The *Charleston Regional Hazard Mitigation Plan* also addresses the vulnerability of the Region to each of the major types of hazards facing the Region in Section 5 *Problem Assessment*. Each of the major hazard types are discussed in terms of:

- Types of buildings that are most vulnerable to particular hazards
- Estimation of the total number of buildings vulnerable to flood/hurricane damage
 - 80,390 buildings in the Region are vulnerable to such damage based on their location in *Special Flood Hazard Area*
 - 36,465 buildings of the total number listed above are also vulnerable due to their date of construction
- Estimated potential building/property losses due to earthquakes and tornadoes
- The types of hazards that pose a threat and in what manner
- known flood damages
- past flood impacts
- Emergency Warning Needs
- Critical Facilities
- Natural and Beneficial Functions of floodplains
- Development and Population Trends
- Economic Impact of hazard events

The overall determination from this section is that the Charleston Region is potentially vulnerable to loss as a result of a hazard event to a relatively high degree, particularly considering the increasing number of residents not necessarily familiar with the types of hazards facing the Region and how best to prepare and protect themselves from these hazards. Since tourism plays such a predominant role in the local economy and is often negatively affected by large-scale hazard events with national media coverage, the potential economic losses associated with a hazard event are potentially high.

1.8 - Review of Possible Activities

Section 6 *Possible Activities* of the *Charleston Regional Hazard Mitigation Plan* provides prioritization factors to be utilized in selecting projects to be performed, as well as a description of the on-going activities currently being performed within the Region. This section also lists other suggested activities that possibly could be performed to enhance hazard mitigation efforts within the Charleston Region. This section discusses: Preventive Activities (e.g. primarily regulatory activities designed to provide improved resistance of development to hazard events); Property Protection Activities (e.g. activities designed to improve the ability of the citizens or the existing building stock/infrastructure to withstand hazard events); Natural and Beneficial Functions of Floodplains/Resource Preservation Activities (e.g. activities geared towards the preservation of the natural and historic resources of the Region); Emergency Services (e.g. activities geared

towards hazard event warning and government response); Structural Projects (e.g. activities which are infrastructure improvements designed to enhance the hazard resistance of the Region); and Public Information Activities (e.g. activities geared towards educating the citizens of the Region regarding hazard preparation and response). The overall view provided within this section is that the Region is already doing many activities for the enhancement of our hazard mitigation; however, there are also additional activities, which may be done to further prepare our residents for the hazard events to which the Region is vulnerable. The Public Information Activities portion of this section has been reduced as this information has been moved to its own plan, the *Public Information Plan* in Appendix A.1. This section has been utilized by the respective government entities to draft their individual action plans regarding which types of activities they intend to pursue in the future to reduce their hazard vulnerability. The prioritization factors within these sections also play a major role in additional project determination under Project Impact as new possible activities are considered.

1.9 - Adopting Resolution

This plan is intended to be a working document, which may be subject to revision as the Community Rating System schedule changes, or as Project Impact decision making committees request revisions that would enhance their ability to perform their functions. The adopting resolutions for the government entities therefore generally include a section recognizing the *Charleston Regional Hazard Mitigation & Public Information Plan Committee* as a continuing entity to be charged with maintaining and making annual revisions to this plan as needed, and making periodic reports regarding this plan to the respective governing councils or commissions for the adopting entities. The Plan now includes the *Public Information Plan* as Appendix A.1. This Plan is also intended to be a working document to be reevaluated and updated annually. The Committee is charged with maintain that the *Public Information Plan* continues to meet the requirements set forth for Community Rating System credit.

1.10 - Action Plan

Each government or other adopting entity has included within the Plan for their entity a specific action plan, regarding activities that they propose be undertaken or continued during each year. This action plan includes several projects reflecting all of the activities discussed within the Plan. While it is the intention of the entities to undertake the activities included within the action plan, it is also recognized that circumstances may change and the activities listed may not be able to be accomplished within the time frame indicated, depending upon the circumstances encountered. The action plan for each entity is periodically updated to reflect changes and to indicate activities for the time period for each year. Each entity that adopted the Plan has completed a status report on the action plan annually through 2017, indicating the progress towards the activities listed within the Plan. Status reports included in this update of the Plan report on the collective activity of the 4 years prior and specific activity for the last year.

1.11 - Implementation Plan

The plan is intended to serve as the guiding document for prioritization of hazard mitigation projects undertaken within the Charleston Region. Actual project selection for any projects undertaken as Project Impact initiatives are carried out in accordance with this plan. As the Plan is utilized in this capacity, suggested revisions are considered and incorporated where appropriate into the Plan on an as needed basis. The *Charleston Regional Hazard Mitigation & Public Information Plan Committee* maintains the Plan and makes any necessary revisions as may be required to continue receiving Community Rating System credit for the Plan. A review of the Plan occurs at least annually. A progress report on the Plan is submitted to the governing councils of the adopting jurisdictions and the local media are notified of the availability of the latest edition of the Plan and progress reports on an annual basis.

Every five years, public hearings on the Plan, including its amendments, are conducted, and the local governing councils and commissions are asked to re-adopt the Plan as revised. The plan is also provided to applicable planning entities for potential use in updates to other applicable plans. Similarly, applicable updates to other plans are considered for inclusion in the *Charleston Regional Hazard Mitigation Plan*, as appropriate. Section 3 *Planning Process* Table 3-1 provides a list of other specific plans in use by the jurisdictions within Charleston County that are considered for updates to the *Charleston Regional Hazard Mitigation Plan*, and which include applicable provisions of the *Charleston Regional Hazard Mitigation Plan* by reference or through excerpts [this table indicates whether and how information from the indicated plan is included in the *Charleston Regional Hazard Mitigation Plan* and whether and how information from the *Charleston Regional Hazard Mitigation Plan* is included in the indicated plan, when appropriate].

1.12 - Conclusion

The *Charleston Regional Hazard Mitigation Plan* is the result of a cooperative effort of the public and private sectors and intended to enhance the ability of all of the local jurisdictions within the Charleston Region to prepare for and respond to hazard events. The plan is comprehensive and compliments other initiatives to help make the Region more resistant to disasters. Additional information regarding this plan is available through the local jurisdictions or Charleston County Building Inspection Services.

Attachment 1-A: Project Impact Organization Chart

Project Impact



Section 2 Goals

The *Charleston Regional Hazard Mitigation Plan* is intended to serve as a guiding document for project selection under Project Impact and *Public Information Plan (PIP)* initiatives. Charleston County's Project Impact initiative, which began in 1998, is a community-based partnership of all local governments in Charleston County, SC and multiple other partners from the private, public (Federal, State, Regional government entities) and non-profit sectors. There are 177 partners in Project Impact.

The mission of Charleston County's Project Impact initiative is to create a more disaster resistant community through cooperative efforts of the private, public and non-profit sectors.

Based upon the responses to the latest survey questionnaire, the following are the goals for this plan (listed in the order of importance):

1. Reduce potential flood damage
2. Improve storm drainage
3. Minimize future flood occurrence
4. Minimize future hurricane damage
5. Improve hazard resistance of infrastructure
6. Minimize future earthquake damage
7. Protect environmental resources/preserve open and green space
8. Minimize future terrorist incidents
9. Improve water quality
10. Preserve historic building inventory
11. Higher regulatory standard
12. Minimize future hazardous material incidents

In addition to the goals as ranked by the questionnaires, the *Hazard Mitigation & Public Information Plan Committee* determined that the following additional goals should be added to this plan (please note that no specific ranking for these goals was indicated):

1. To enhance the provision of emergency shelters for those areas in the Region that do not currently have an emergency shelter in close proximity.
2. To recognize that shelters in certain areas should not be provided, due to a lack of safe locations for such facilities.
3. Shelters that are not currently sanctioned by the American Red Cross are to be classified as "shelters of last resort".
4. The Committee also determined that jurisdictions might have additional goals that they would like to pursue through this plan, and that these additional goals should be included in those jurisdictions action plans, as deemed appropriate.

The average ranking of these goals demonstrated the importance of all of them as it relates to this plan, since they all were rated between moderately important to very important, based on the average raw score, and all of the goals are within a maximum of (1) point of each other. Given this relative importance assigned by the survey respondents to these goals, these goals accurately, reflect the overall vision for the hazard mitigation activities to be performed in the Region.

The goals for this plan are also consistent with the hazard vulnerabilities, as determined through the *State of South Carolina Hazards Assessment* and the frequency/severity of hazard events risk assessment methodologies for those hazards considered most likely to damage buildings and/or cause loss of life (e.g. hurricanes, floods, wildfires and earthquakes). Working towards achieving all of these goals is expected to minimize hazard-related losses associated with any of the hazards within the Charleston Region.

Section 3 Planning Process

3.1 - Pre Planning Request for Input

The sample questionnaires, included as Attachment 3-A1 and 3-A2 to this section, are distributed to jurisdictions or citizens, requesting their input at the beginning of the planning and update process. The recipients of the questionnaire were considered knowledgeable regarding hazards experienced in the Charleston Region and the potential vulnerabilities of the Region to these hazards.

Completing a questionnaire is considered one form of participation in the planning process. Alternate means of participation in the planning process include, but are not limited to, attendance at committee meetings, or having one or more representatives on a committee that develops or provides input into the Plan or the Plan website. The questionnaire asked the respondents to assess the hazards indigenous to the Charleston Region, the nature of the problem these hazards create, and to rate/provide potential goals for the Plan, possible activities for the Plan to address, and criteria for prioritizing projects under the Plan. The questionnaire also asked the respondents to provide copies of existing hazard-related mitigation plans, if available.

In addition to those questionnaires sent to prospective respondents, questionnaires were discussed at Project Impact presentations to community professional organizations/advisory groups (e.g. Contractor's Associations, Construction Specifications Institute, Charleston Chapter of the American Institute of Architects, etc.), and those interested in completing questionnaires were asked to do so. Questionnaires were also distributed to individuals who requested to provide their input.

The latest questionnaire was distributed in the summer of 2017. In an effort to reduce cost and increase response, the survey was digitized and responses were recorded in a Google poll.

A simplified version of the survey was also produced for the general public to increase the response rate. A link for this simplified public survey was placed on the Charleston County Building Inspection Services' webpage and sent to several citizens that had previously requested to be involved in mitigation planning. In addition, survey information was also made available at several public meetings, expos and hearings. The public survey asked participants to simply describe the area within the County that they lived, rank the natural and man-made hazards previously identified in order of severity and preparedness, and provided the participants an opportunity to leave an email address if they were interested in receiving additional communication regarding the Plan.

Responses received were consistent with previous surveys confirming the fact that the priorities previously established for outreach and mitigation are still appropriate. Hurricanes were perceived as the biggest threat to the Lowcountry, with flooding, earthquakes, and tornadoes earning very high marks as well. Sea level rise was a new addition this year ranking in the top spots in both the public and the jurisdiction/government surveys.

3.2 – Planning Committee

Based upon input received from the questionnaires, the *Hazard Mitigation & Public Information Plan Committee* established a draft for the Plan update. The local Community Rating System Jurisdiction members of this Committee are listed in Attachment 3-B to this section. If a member of the Committee was unable to attend a meeting, applicable drafts and/or information that were distributed and/or discussed at the planning committee meeting was mailed or hand delivered to the member to obtain any comments from the Committee member as an alternative form of participation in the planning process. Members and general public could also participate by telephone. Minutes and/or meeting notes, copies of meeting handouts, and attendance rosters for Committee meetings are maintained in the Charleston County Building Inspection Services Department. Attachment 3-C to this section lists the stakeholder members of the *Hazard Mitigation & Public Information Plan Committee* and Attachment 3-D to this section lists the Other Participating Partners. Because this is a joint committee serving to make recommendations on the *Charleston Regional Hazard Mitigation Plan* and the *Public Information Plan*, the makeup of the Committee meets the standards set for both functions.

The governing bodies of the local jurisdictions represented on the planning committee were provided with a list of the members of the Committee and a Project Impact organizational chart, in order for these governing bodies to recognize the Committee and approve the proposed organization for Project Impact. The Project Impact committees also routinely provide input into the Plan, as they discuss projects they recommend performing to make the community more resistant to disasters. A list of the governing bodies that have officially recognized the *Hazard Mitigation & Public Information Plan Committee* is included in Attachment 3-F of this section. Copies of the governing body actions are available at the local jurisdiction offices and the Charleston County Building Inspection Services office.

The *Hazard Mitigation & Public Information Plan Committee* meets to discuss the hazard assessment, problem assessment, goals, and possible activities addressed within this plan update. The Committee meets annually (typically at least two times per year), to update the Plan. Project Impact subcommittees meet quarterly. The annual update process includes County staff making routine updates that include, but are not limited to: changes to Committee membership to reflect personnel changes; additional hazard events that have occurred during the year; changes to building vulnerability based on revised building counts or valuations; and government entities providing updates to applicable sections of the Plan (drainage projects status, repetitive flood loss properties, changes to critical facilities, and so forth).

Project Impact Committee members also provide input throughout the year including activities to include on the action plans for the coming year, as they discuss projects they would recommend for hazard mitigation during their routine meetings throughout the year. Each signatory to the Plan develops an action plan for each year and provides a status report on the proposed activities in the previous year's action plan on an annual basis, and provides their recommended revisions to any sections of the Plan, as applicable.

Changes are made to the *Goals* Section of the Plan on an as-needed basis, as determined by the multiple committees involved in the Plan update process. The *Summary of Changes* is an update of changes based on the revisions made to the Plan each year, as applicable. The criteria used for this update/evaluation is threefold: whether all hazards have been included, whether the Plan meets the needs of the signatory governments, and whether the updates are in accordance with FEMA planning guidelines. The *Hazard Mitigation & Public Information Plan Committee* meets as a group at least once a year to review the updates made to the Plan, to suggest any further updates and to approve the updates made to the Plan for that year. Details as to the changes made to the Plan are provided to the Committee members in advance of the Committee meeting. The Committee also approves an annual report of plan changes for the governing councils/commissions during this meeting.

3.3 – Public Input

Public input into the Plan is obtained on a routine basis through the Project Impact committees as they determine projects to recommend. All meetings are open to the public and advertised through the local media. The notices for the public meetings exceed *Freedom of Information Act* requirements, since they are sent to six local newspapers, including the *Post and Courier*, which is the newspaper with the largest general circulation in the Region. These notices are also sent to four local television stations and to three radio station groups, which include most of the local radio stations. Notice is also included on the information board found in the lobby of the Public Services Building, which advertises public meeting information. Additional opportunities for public input is available since most local governmental entities in Charleston County with websites are linked to Charleston County's website, where the Plan is easily accessible to their residents and they have the ability to provide comments or suggested revisions to the Plan. Additional public hearings on the Plan are also conducted on a five-year cycle to obtain further public comments on the Plan, including any revisions that have been made or are proposed for the Plan. For 2017, there were three public meetings held for public and jurisdictional input, revisions and suggestions, and approval of the Plan.

Yearly update meetings, which when combined represent the foundation for the 5-year formal plan, are publicized and the public is invited. Furthermore, the *Hazard Mitigation & Public Information Plan Committee* is comprised of both local governments and non-governmental groups, ensuring that representation from all areas and aspects of the County are present.

Public input into the Plan continues as the *Project Impact Committee* and *Hazard Mitigation & Public Information Plan Committee* meetings are public meetings, advertised as indicated above through the local media outlets. The version of the Plan posted on the Charleston County's website is also updated as revisions to the Plan are done annually, so that those who do not attend Committee meetings or public hearings have an opportunity to comment on the latest edition of the Plan. (An e-mail address for comments is provided on the website.)

In 2014, a separate and simplified version of the hazard assessment survey was created to be distributed publically. This new survey was established online and utilized Google polling. A link to the survey was forwarded to all partners who were participants in the Plan so that they could share it with active citizens or anyone else they wished to distribute it to. A printed version of the same survey was made available in the Charleston County Building Inspection Services Department, in the hopes of capturing contractors, builders, and citizens as they waited on permits or other building related issues. In 2017, this survey was redistributed in the same manner with the addition of questions on emergency preparedness for hazards and resiliency of communities in the area. Any additional feedback recorded will be included in future meetings and editions of this plan.

3.4 – Local Jurisdiction Adoption

The plan was adopted by the local government entities listed in Attachment 3-F by the respective governing councils or commissions for these entities. The local government entities were able to modify the Plan to fit their individual needs if desired. The plan was also re-adopted by the participating local governments in the Charleston Region in 2004, as a part of the five-year cycle process and again in 2008. The five-year plan for 2012-2013 submitted in 2012 was approved by FEMA on September 10, 2013. The most recent formal five-year *Charleston Regional Hazard Mitigation Plan* approval was given by FEMA on September 10, 2013. The next FEMA formal plan review is scheduled for 2017 (See attachment 3-F).

3.5 – Implementation Plan

The plan is intended to serve as the guiding document for prioritization of hazard mitigation projects undertaken within the Charleston Region. Actual project selection for any projects undertaken as Project Impact initiatives are carried out in accordance with this plan by the Committees that correspond to the activity classifications of this plan (e.g. preventive activities, property protection activities, natural and beneficial function-related activities, emergency service-related activities, structural projects, and public information activities). As the Plan is utilized in this capacity, suggested revisions are considered and incorporated where appropriate into the Plan on an as needed basis. The *Hazard Mitigation & Public Information Plan Committee* maintains the Plan and makes any necessary revisions as may be required to continue receiving Community Rating System credit. A review of the Plan occurs at least annually. A progress report on the Plan is submitted to the governing councils of the adopting jurisdictions at least

annually. The local media are notified of the availability of the latest edition of the Plan and progress reports.

Every five years, public hearings on the Plan, including its amendments, are conducted, and the local governing councils and commissions are asked to re-adopt the Plan as revised. The plan is also provided to applicable planning entities for potential use in updates to other plans, including but not limited to the *Charleston County Comprehensive Plan*, *Emergency Operations Plan*, or other applicable plans. Similarly, applicable updates to other plans are considered for inclusion in the *Charleston Regional Hazard Mitigation Plan*, as appropriate. Table 3-1 attached provides a list of other specific plans in use by the jurisdictions within Charleston County that are considered for updates to the *Charleston Regional Hazard Mitigation Plan*, and which include applicable provisions of the *Charleston Regional Hazard Mitigation Plan* by reference or through excerpts. This table indicates whether and how information from the indicated plan is included in the *Charleston Regional Hazard Mitigation Plan*, and whether and how information from the *Charleston Regional Hazard Mitigation Plan* is included in the respective indicated plans, when appropriate.

Table 3-1: Hazard-Related, Land Use and/or Development Plans in the Charleston Region

Hazard-Related, Land Use and/or Development Plans in the Charleston Region			
Jurisdiction	Name of Plan(s)	Information from this plan in the Charleston Regional Hazard Mitigation Plan (CRHMP)	Charleston Regional Hazard Mitigation Plan (CRHMP) included in this plan
Town of Awendaw	Town of Awendaw Comprehensive Plan	Not applicable	Applicable excerpts from CRHMP included in this plan.
City of Charleston	Charleston Century V City Plan	Not applicable	Preservation of open space is a mutual goal of both plans - no need for cross-referencing.
Charleston County (Unincorporated)	Charleston County Comprehensive Plan; Charleston County Emergency Operations Plan; Beach Management Plan; Flood Ordinance; Building Ordinance; Stormwater Management Plan; Flood Analyses; Charleston County Watershed Master Plan; Greenbelt Plan; Repetitive Loss Area Analysis (RLAA)	Applicable excerpts included in CRHMP.	Applicable excerpts from CRHMP included in these plans.
City of Folly Beach	Not applicable	Not applicable	Not applicable
Town of Hollywood	Not applicable	Not applicable	Not applicable
City of Isle of Palms	Updated Comprehensive Plan for the City of Isle of Palms	Not applicable	Entire CRHMP included by reference, CRHMP is referenced on the City's web site (www.iop.net) with a link to the plan.
Town of Kiawah Island	Town of Kiawah Island Emergency Preparedness Plan, Comprehensive Plan, Municipal Code, Article 12, Land Use and Zoning	Not applicable	Entire CRHMP included in some plans by reference; applicable excerpts from the CRHMP included in others.
Town of Lincolnville	Town of Lincolnville Comprehensive Plan	Not applicable	Applicable excerpts from CRHMP included in plan.
Town of McClellanville	Comprehensive Plan for the Town of McClellanville	Not applicable	Entire CRHMP included by reference, and applicable excerpts from the CRHMP in this plan.
Town of Meggett	Not applicable	Not applicable	Not applicable
Town of Mt. Pleasant	Community Rating System, 2003 Comprehensive Land Use Plan, NPDES Phase II	Applicable excerpts included in CRHMP.	Entire CRHMP included by reference.
City of North Charleston	North Charleston Comprehensive Development Plan, North Charleston Emergency Operations Plan	Not applicable	References to CRHMP included in other plans.
Town of Ravenel	Town of Ravenel Comprehensive Plan, 1999	Not applicable	Entire CRHMP included by reference.
Town of Rockville	Not applicable	Not applicable	Not applicable
Town of Seabrook Island	Not applicable	Not applicable	Not applicable
Town of Sullivan's Island	Town of Sullivan's Island Comprehensive Plan 1998, revised June 19, 2000	Not applicable	Entire CRHMP included by reference.
Charleston County Parks & Recreation Commission	CCPRC Mission Statement; CCPRC Comprehensive Development Plan; CCPRC Hurricane Plan	Not applicable	Entire CRHMP included by reference.
Charleston CPW	Not applicable	Not applicable	Not applicable
Cooper River Parks & Playground Commission	North Charleston Comprehensive Development Plan; North Charleston Emergency Operations Plan	Not applicable	Include reference to CRHMP in other plans.
James Island Public Service District	Not applicable	Not applicable	Not applicable
Mt. Pleasant Water Works	Mt. Pleasant Waterworks Emergency Plan	Not applicable	Entire CRHMP included by reference.
North Charleston District	Not applicable	Not applicable	Not applicable
North Charleston Sewer District	Not applicable	Not applicable	Not applicable
St. Andrews Parish Parks & Recreation	Not applicable	Not applicable	Not applicable
St. Andrews Public Service District	Not applicable	Not applicable	Not applicable
St. John's Fire District	St. John's Fire District Strategic Plan	Goals & Objectives and Risk Assessment information included in CRHMP.	Entire CRHMP included by reference, and applicable excerpts from the CRHMP in this plan.
St. Paul's Fire District	St. Paul's Fire District Emergency Operations Plan	Not applicable	Entire CRHMP included by reference.

3.6 – Planning Process Summary

The public is invited to participate in the mitigation planning process through yearly planning meetings that involve all participating jurisdictions and entities. All planning meetings are open to the public. Each municipality or entity’s representative in the yearly planning and update meeting conveys the public input they have received within their district. Public feedback is encouraged through Project Impact outreach activities that are held throughout the tri-county Region. During the 2013-2017 plan update, there have been more than 155 Project Impact events, including hurricane awareness expos, school science fair partnerships, educator and classroom grants, neighborhood presentations, industry meetings, emergency planning sessions, and more. Televisions messages, targeted mailings, radio interviews, and emergency preparedness billboards, just to name a few, impact hundreds of thousands of residents continuously. (See appendix A.4 for the minutes from the planning committee meetings).

To keep the information in the Plan current and up to date, the *Hazard Mitigation & Public Information Plan Committee* performs a plan update each year, addressing any changes in hazard events, drainage improvement projects, repetitive loss areas, etc. Each of the participating jurisdictions and other entities submits an annual status report, which is compiled to reflect the formal five-year update cycle. Each jurisdiction also has the opportunity to clarify and add items to their action plan. All annual changes are reviewed and approved at a public meeting with representatives from all jurisdictions, media, and the public is invited to attend and provide input. The yearly meetings and yearly updates ensure the Plan is continually being monitored, evaluated and updated to reflect the most current hazard information possible.

Public meetings during 2013-2017 to update this plan were held on:

- August 7th, 2013
- July 8th, 2014
- September, 24th, 2014
- September 25, 2015
- August 31st, 2016
- September 28th, 2016
- June 13th, 2017
- July 18th, 2017
- August 22nd, 2017

The plan will continue to be updated annually, involving all jurisdictions, partners, and the public. Varieties of stakeholders outside of Charleston County have the opportunity to be involved in the planning process and Project Impact outreach activities. In addition to the fact that all municipalities within Charleston County participate in Project Impact and other countywide initiatives, several municipalities have physical borders that extend beyond Charleston County. The City of North Charleston, for instance, is located within Charleston County, Berkeley County and Dorchester County. Additionally, many residents of neighboring

communities, like Summerville, commute into Charleston County for work, shopping, services, etc.

Project Impact and Charleston County also work with the Local Emergency Planning Committee (LEPC), which, in addition to meeting monthly, has a quarterly meeting with neighboring Berkeley and Dorchester County's Emergency Management Departments to discuss preparedness and hazard mitigation. Many of the events where Project Impact outreach activities take place also includes local businesses, insurance agents, and non-profits, all of which have impacts beyond Charleston County. Project Impact's outreach activities and messages affect the Region, reaching the public from Beaufort, south of Charleston County, to Georgetown, north of Charleston County.

The public and all stakeholders are invited to attend and participate in the public meetings. All planning meetings are open to the public. Each municipality/entity's representative in the yearly planning and update meeting speaks for the public based on input they have received within their jurisdiction. Public feedback is incited through Project Impact outreach activities that are held throughout the Tri-County Region including activities such as regular seminars, lectures, expos and meetings. In addition to public meetings and events, the current update of the Plan is always available on Charleston County's website for public review and comment.

Project Impact has a presence on social media to further connect with the public. Twitter and Facebook both help raise awareness for hazard vulnerability, risk, and mitigation, and encourage public participation. All publications and events have contact information available for public feedback or specific questions.

Charleston County engages the public through professional and trade organizations as well, speaking monthly with the Tri-County Homebuilders Association and is regularly involved with specific trade groups. These interactions are not only educational opportunities, but provide valuable feedback. Public input is regularly reviewed and incorporated into the document. To continue to include public participation in the planning process for the upcoming five-year cycle, a new expanded questionnaire will be distributed to the public, local jurisdictions, regional partners, state and federal agencies, and interested parties through a targeted email survey campaign. Charleston County and Project Impact outreach events, websites, and social media networks will also provide access to the questionnaire, extending the access and increasing public feedback.

Charleston County's Floodplain Manager is in charge of maintaining the Plan, serves as the principal contact for public questions concerning local hazards, and is responsible for coordinating the yearly update and the formal five-year full update cycle. While the Plan is not formally approved annually by FEMA, Charleston County and all other local Councils and governing boards receive notice of changes on an annual basis to have the most current information.

The most recent formal five-year *Charleston Regional Hazard Mitigation Plan* approval was given by FEMA on September 10, 2013. The next FEMA formal plan review is scheduled for 2017.

Attachment 3-A1: Citizen Survey

To complete this survey online, please visit:

www.charlestoncounty.org/departments/building-inspection-services/hazard-mitigation-plan.php

Charleston Regional Hazard Mitigation Plan Citizen Survey

The Charleston Regional Hazard Mitigation Plan, originally adopted in 1999, is a community-wide effort consisting of input from 31 local entities. These organizations include 16 local government jurisdictions working alongside major stakeholders in the community, including private, non-profit and State agencies, in addition to smaller community commissions and districts. The combined effort of all of these entities composes a regional, multi-jurisdictional mitigation plan that takes into account all visions of what concentrated efforts should be placed on specific hazards and mitigation measures. The Plan is updated annually to address specific needs and changes in the area and it is adopted by all participating jurisdictions on a 5-year cycle.

Hazard Assessment:

The Charleston Region is affected by several types of hazards each year. The purpose of this survey is to identify a priority list of hazards in the Charleston Regional Hazard Mitigation Plan.

Please rank each of the hazards based on the threat level to your community.

Please give a rating of 1-5 for each hazard below. (1= Most Threatening; 5= Least Threatening)

Earthquake _____	Terrorist Incidents _____
Flooding _____	Dam Failure _____
Hurricanes _____	Tsunamis _____
Wildfires _____	Sea Level Rise _____
Tornadoes _____	Hazard Materials Incidents _____

Are there any other hazards that you feel are pressing to your community?

Emergency Preparedness:

On a scale of 1-5, how prepared (survival kit, evacuation plan, awareness, etc.) are you for the following situations if they were to occur? Please give a rating of 1-5 for each hazard below.

(1 =Most Prepared, 5= Least Prepared)

Earthquake _____	Terrorist Incidents _____
Flooding _____	Dam Failure _____
Hurricanes _____	Tsunamis _____
Wildfires _____	Sea Level Rise _____
Tornadoes _____	Hazard Materials Incidents _____

If there are any other hazards that you feel are pressing to your community, what are they and how prepared do you feel you are for the hazard(s)? _____



To complete this survey online, please visit:

www.charlestoncounty.org/departments/building-inspection-services/hazard-mitigation-plan.php

Project Impact:

Charleston County Area Project Impact is an on-going initiative that performs outreach projects which help make our communities more prepared and resistant to damages caused by hazards or events, such as natural disasters.

Would you be interested in helping to protect your community from dangerous hazards?

If yes, please provide your name and contact information below to receive more information on how you can become involved.

Name: _____ Phone #: _____
Email address: _____

Committee Areas of Interest (please check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Structural Projects (Engineers) | <input type="checkbox"/> Emergency Services (First Responders) |
| <input type="checkbox"/> Natural Benefits (Environmentalists) | <input type="checkbox"/> Property Protection/ Preventative Activities (Construction/ Regulatory) |

Demographics:

What area of Charleston are you located? _____

What is your zip code? _____

Please list the contact information (preferably email) for anyone you know who may be interested in also filling out this survey.

Thank you for your participation in the Charleston Regional Hazard Mitigation Plan Survey! Your survey responses are very important!

Contact us with any questions regarding the survey, the Charleston Regional Hazard Mitigation Plan, Charleston Area Project Impact Initiative, or to find out the results.

Return The Completed Survey Via Mail to the Address Below:



Charleston County Building Inspection Services
4045 Bridge View Drive, Room A311
North Charleston, SC 29405-7464
(P) 843.202.6940
buildingservices@charlestoncounty.org



Attachment 3-A2: Jurisdiction Survey

Charleston Regional Hazard Mitigation Plan Jurisdiction/Organization Survey

The Charleston Regional Hazard Mitigation Plan, originally adopted in 1999, is a community-wide effort consisting of input from 31 local entities. These organizations include 16 local government jurisdictions working alongside major stakeholders in the community, including private, non-profit and State agencies, in addition to smaller community commissions and districts. The combined effort of all of these entities composes a regional, multi-jurisdictional mitigation plan that takes into account all visions of how efforts should be concentrated on specific hazards and improve mitigation measures. This year's survey results will be reflected in the 5 year update to be adopted late summer of 2017.

Your input is appreciated and needed.

* Required

Please respond to this survey by May 24 so we can compile the results prior to the first HMP Committee meeting, to be scheduled for June.

Some of these questions are thought provoking and may take some time to answer. Taking your time to complete the survey is greatly appreciated.

Hazard Assessment Rankings

1. Please rank each of the following hazards based on the threat level to your community, on a scale of 1 to 5 (1=Most Threatening and 5=Least Threatening).

Mark only one oval per row.

	1 (Most)	2	3	4	5 (Least)
DAM FAILURE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EARTHQUAKES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FLOODING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HAZARDOUS MATERIAL INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HURRICANES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SEA LEVEL RISE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TERRORIST INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TORNADOES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TSUNAMIS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WILDFIRES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Are there any other hazards that you feel are pressing to your community? Please rank (1=Most Threatening; 5=Least Threatening).

Emergency Preparedness

3. On a scale of 1-5, how prepared (evacuation plan, awareness, etc.) is your jurisdiction/organization for the following situations if they were to occur? Please give a rating of 1-5 for each hazard below (1 =Most Prepared, 5= Least Prepared).

Mark only one oval per row.

	1 (Most)	2	3	4	5 (Least)
DAM FAILURE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EARTHQUAKES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FLOODING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HAZARDOUS MATERIAL INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HURRICANES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SEA LEVEL RISE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TORNADOES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TERRORIST INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TSUNAMIS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WILDFIRES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. If there are any other hazards that you feel are pressing to your community, what are they and how prepared to you believe your jurisdiction/organization is for the hazard(s)? Please rank (1=Most Prepared; 5=Least Prepared).

STRUCTURES - Vulnerability Assessment Rankings

5. How vulnerable to damage are the structures within your jurisdiction/organization in the event that the following hazards were to occur? (1=Most Vulnerable and 5=Least Vulnerable)

Mark only one oval per row.

	1 (Most)	2	3	4	5 (Least)
DAM FAILURE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EARTHQUAKES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FLOODING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HAZARDOUS MATERIAL INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HURRICANES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SEA LEVEL RISE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TORNADOES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TERRORIST INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TSUNAMIS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WILDFIRES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. If there are any other hazards that you feel are pressing to your community, what are they and how vulnerable to do believe the structures within your jurisdiction are to these hazards? Please rank (1=Most Vulnerable; 5=Least Vulnerable).

CRITICAL FACILITIES - Vulnerability Assessment Rankings

7. How vulnerable to damage are the critical facilities within your jurisdiction (e.g. police stations, fire stations, emergency operation centers, hazardous material storage facilities, etc.) if one of the following hazards were to occur? (1=Most Vulnerable; 5=Least Vulnerable)

Mark only one oval per row.

	1 (Most)	2	3	4	5 (Least)
DAM FAILURE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EARTHQUAKES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FLOODING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HAZARDOUS MATERIAL INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HURRICANES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SEA LEVEL RISE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TERRORIST INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TORNADOES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TSUNAMIS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WILDFIRES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. If there are there any other hazards that you feel are pressing to your community, what are they and how vulnerable to you believe the structures within your jurisdiction/organization are to these hazards? Please rank (1=Most Vulnerable; 5=Least Vulnerable).

INFRASTRUCTURE - Vulnerability Assessment Rankings

9. How vulnerable to damage is the infrastructure within your community (roads, bridges, etc.) if one of the following hazards were to occur? (1=Most Vulnerable and 5=Least Vulnerable)

Mark only one oval per row.

	1 (Most)	2	3	4	5 (Least)
DAM FAILURE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EARTHQUAKES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FLOODING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HAZARDOUS MATERIAL INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HURRICANES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SEA LEVEL RISE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TERRORIST INCIDENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TORNADOES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TSUNAMIS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WILDFIRES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. If there are any other hazards that you feel are pressing to your jurisdiction/organization, what are they and how vulnerable is the infrastructure to these hazards? Please rank (1=Most Vulnerable; 5=Least Vulnerable).

11. Please utilize this space to provide any specific comments regarding the vulnerability of your jurisdiction/organization to hazard events. What is your assessment of the overall vulnerability of the Charleston region to these hazards?

12. Please rate the following potential goals for the regional plan according to the needs of your jurisdiction or organization (1=Most Important and 5=Least Important).

Mark only one oval per row.

	1 (Most)	2	3	4	5 (Least)
Higher regulatory standards	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve hazard resistance of infrastructure	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve storm drainage	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve water quality	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimize future earthquake damage	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimize future flood occurrence	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimize future hazardous material incidents	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimize future hurricane damage	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimize future terrorist incidents	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Protect environmental resources/preserve open an green space	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preserve historic building inventory	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reduce potential flood damage	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Are there any other goals that you feel are pressing to your jurisdiction/organization? Please rank (1=Most Important; 5=Least Important).

Existing Plans/Interest in Participation

14. Does your jurisdiction/organization have any hazard-related mitigation plans other than the Charleston Regional Hazard Mitigation Plan?

Check all that apply.

- Yes (If Yes, please provide a copy of your plan via email or standard mail)
- No

Hazard Resilience Survey Questions

The Resilient America program of the National Academies of Sciences, Engineering, and Medicine asks for your input on a few additional questions to help assist the community as a whole in resiliency efforts.

15. Does your organization include issues of resiliency (e.g. preparedness, adaptation, mitigation, response & recovery) in your planning documents, such as the Comprehensive Plan, or in other planning efforts? If so, what are some examples of these policies?

16. Reflecting upon recent hurricane threats and flooding events, what has your jurisdiction/organization learned from a hazard preparedness standpoint from these events? Are some areas of preparedness weaker than others in your jurisdiction?

17. What challenges does your organization face when it comes to incorporating disaster resiliency into your planning or implementation efforts?
18. Does your jurisdiction/organization participate in emergency operations center activities or command? Please explain your participation level.
19. What could be done at the regional scale to mitigate impacts to disasters and disruptions? This could include providing technical assistance, setting regional policies, providing a forum for peer sharing, etc. Is your organization currently involved in any regional efforts?
20. Please share information about relevant projects related to building resilience to hazards (e.g. preparedness, adaptation, mitigation, response, and recovery efforts) that your community is undertaking (e.g. educational programs, risks programs, increased freeboard requirements, etc.).

Jurisdiction/Agency Information

If you are not representing a town or city but rather a parks commission or sewer district, for example, please select "Other," and fill in the name below.

21. Select your jurisdiction? *

Mark only one oval.

- City of Charleston
- City of North Charleston
- City of Folly Beach
- City of Isle of Palms
- Town of Mt. Pleasant
- Town of James Island
- Town of Sullivan's Island
- Town of Awendaw
- Town of Hollywood
- Town of Lincolnville
- Town of McCellanville
- Town of Meggett
- Town of Rockville
- Town of Seabrook Island
- Town of Kiawah Island
- Unincorporated Charleston County
- Other

22. If other, please specify.

Point of Contact

23. Name: *

24. Title:

25. Mailing Address:

26. Telephone Number: *

27. Fax Number:

28. E-Mail Address: *

Thank You!

Thank you for participating in the Charleston Regional Hazard Mitigation Plan Jurisdiction/Organization Survey.

Contact Us

Charleston County Floodplain Management
Niki Grimball, Public Services Building
4045 Bridge View Drive, Room A311
North Charleston, SC 29405-7464
(P) 843.202.6940
buildingservices@charlestoncounty.org

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Attachment 3-B: Community Rating System Jurisdiction Members of the Charleston Regional Hazard Mitigation & Public Information Plan Committee

Jurisdiction	CEO	Designated Member
Town of Awendaw	Miriam Green, Mayor	D. William Wallace, Town Administrator
Town of Hollywood	Jackie Heyward, Mayor	Edward Holton, Zoning Administrator
Town of James Island	Bill Woolsey, Mayor	Ashley Kellahan, Town Administrator
Town of Lincolnton	Charles Duberry, Mayor	Charles B. Duberry, Mayor
Town of McClellanville	Rutledge B. Leland, III, Mayor	Michelle McClellan, Town Clerk
Town of Meggett	Harry V. Herrington, Mayor	Stephanie Smith, Town Administrator
Town of Ravenel	Opal N. Baldwin, Mayor	Mark Bloomer, Planning Administrator
Town of Rockville	Riley A. Bradham, Mayor	Carl H. Simmons, Director, Building Inspection Services
Town of Seabrook Island	Ronald Ciancio, Mayor	Randy Pierce, Town & Zoning Administrator
City of Charleston	John Tecklenberg, Mayor	Laura Cabiness, Director, Public Service Dept.
City of Folly Beach	Tim Goodwin, Mayor	Eric Lutz, Building Official
Town of Kiawah Island	Craig Weaver, Mayor	Stephanie Tillerson, Town Administrator
City of Isle of Palms	Dick Cronin, Mayor	Douglas Kerr, Director, Building, Planning, & Zoning
Town of Mt. Pleasant	Linda Page, Mayor	Hillary Repik, Stormwater Manager
City of North Charleston	R. Keith Summey, Mayor	James Whittaker
Town of Sullivan's Island	Patrick O'Neal, Mayor	Randy Robinson, Building Official
Unincorporated Charleston County	Jennifer Miller, Administrator	Carl H. Simmons, Director, Building Inspection Services

Members of the Project Impact committees also provide input into the process as they determine projects to perform under this initiative. These communities have broad-scale representation from multiple public, private, and non-profit organizations with an interest in hazard mitigation in the Charleston County Area.

Attachment 3-C: Stakeholder Members of the Hazard Mitigation & Public Information Plan Committee

Name	Representing
Shawn Engelman, Deputy Chief of Administration	James Island PSD
Chris Seabolt, Fire Chief	James Island PSD
Gary Alford, Assistant District Manager of Operations	North Charleston District and Sewer District
Ken Fischer, Manager	St. Andrews PSD
Christie Holderness, District Manager	St. Andrews PSD
Gavin Gilcrease, Administrative Assistant Chief	St. John's Fire District
Mike Rakoske, Assistant Chief of Administration	St. Paul's Fire District
Kent Scarborough, Safety Director	Charleston Water System
Ronnie Freeman, Safety Director	Mt. Pleasant Water Works
Ryan Henderson, Safety Compliance Director	Charleston Co Parks & Recreation Commission
Susan Klugman, CFO	St. Andrews Park & Playground Commission
Gary McJunkin, Director	Cooper River Parks & Playground Commission
Angela McJunkin, Director Code Enforcement	Cooper River Parks & Playground Commission
Michael Reidenbach, Security & Emergency Management	Charleston County School District
Sean Hughes, Facility Director	Charleston County School District
Woody Doossche, Safety Manager	Charleston County School District
Dana Henderson, Director of Risk Management	Charleston County School District
Randy Beaver, Dir. Envir Health & Safety	College of Charleston
Jordan Bradway, Emergency Manager	Roper St. Francis
Anne Sass, Grants Director	Roper St. Francis
Peter DiNicola, Director of Plant Operations	Roper St. Francis
Scott Cave, Certified Business Continuity Consultant	Atlantic Business Continuity Services
Mike Horton	Davis and Floyd
Robert George, Director of Conservation	SC Aquarium
Justin Healy, Owner	Shutter Services & Sales
William Salters, Coastal Services Project Manager, Planning	SC DHEC - OCRM
Amanda Ritsema, Hospital Preparedness Program Coordinator	SC DHEC
Aleta Riesberg, Real Estate Agent	Anchorline Properties
Chris Silcox, Insurance Agent	C.T. Lowndes & Co.
Debbie Eckard, District Manager, Education Coordinator	Charleston Soil & Water Conservation District
Cedric Green, Vice President	SCANA
Tim Mobley, VP, Engineering and Operations	Berkeley Electric Cooperative
Stewart Weinberg	Floodplain Resident
Bill West	Floodplain Resident
Thomas Payne	Floodplain Resident
Aleen Kinter	Floodplain Resident
Julie Hensley	Floodplain Resident
Nicole Elko	Floodplain Resident
Robert Cochran	Floodplain Resident
Henry Dingle	Floodplain Resident

Attachment 3-D: Other Participating Partners of the Hazard Mitigation & Public Information Plan Committee

Name	Representing
*Jody Muldrow, Planning Administrator	Town of Awendaw
*John Porcelli, Building Official	Town of James Island
Mark Johnson, Public Works	Town of James Island
James Hackett, Code and Safety Officer	Town of James Island
*Larry Brown, Town Council	Town of Lincolnville
Charles Gannt, Fire Chief	Town of Lincolnville
*Henry Holst, Town Council	Town of Rockville
*John Gregg, Mayor Pro-Tem	Town of Seabrook Island
John Turner, Town Council	Town of Seabrook Island
Tom O'Brien, Deput Director Public Service	City of Charleston
*Mark Wilbert, Emergency Management	City of Charleston
*Aaron Pope, Zoning Administrator	City of Folly Beach
Bob Maibach, (Fire) Training Officer	City of Isle of Palms
*Linda Tucker, Town Administrator	City of Isle of Palms
Desiree Fragoso, Assistant Administrator	City of Isle of Palms
*Bruce Spicher, Building Official	Town of Kiawah Island
Katherine Hendricks, Assistant Town Administrator	Town of Mt. Pleasant
*Rob Rogerson, Floodplain Manager	Town of Mt. Pleasant
Emily Raby, Stormwater	Town of Mt. Pleasant
Michael Hardy, Staff Engineer	City of North Charleston
Eyda Arroyave, Planning and Zoning Assistant	City of North Charleston
*Darbis Briggman, Chief Building Official	City of North Charleston
Benjamin Brown, Inspector	City of North Charleston
*William Barfield, Emergency Preparedness Coordinator	City of North Charleston
*Joe Henderson, Zoning Administrator	Town of Sullivan's Island
*William Horne	Charleston County Building Inspection Services
Cindy Cahill	Charleston County Building Inspection Services
Niki Grimball	Charleston County Building Inspection Services
Eric Adams	Charleston County Transportation
Taylor Hall	Charleston County Transportation
*Brock Clary	Charleston County EMD
Chris Wannamaker	Charleston County Public Works
Shawn Smetana	Charleston County Public Informaiton Officer
<p align="center"><i>* Denotes other participating partners that are considered alternative voting members in the absence of the designated member.</i></p>	

Attachment 3-E: Project Impact Committee Members Contact List

Project Impact Committee Members Contact List	
Advisory Committee	
Name	Organization
Arroyave, Eyda	City of North Charleston
Dalrymple, Mike	City of North Charleston
Durette, Fred	Charleston Parks & Recreation
Easley, Cathy	
Healy, Justin	Shutter Services Inc
Horton, Michael	Davis & Floyd
Kearns, Mark	
Mays, Tim	
Mitchum, Ron	
Murray, Johnna	Charleston County
Repik, Hilary	Town of Mount Pleasant
Carl Simmons	Charleston County Building Department
Stoney, John	
Swords, Steve	
Property Protection/Preventive Activities Committee	
Name	Organization
Blaschke, Dennis	McKellar & Associates Architects
Briggman, Darbis	City of North Charleston
Bob Chambers	Low Country Walls, LLC
Clark, Nancy	INRECON
Coe, Steve	Rosenblum Coe Architects, Inc
Connor, Stephen	S.C. State Ports Authority
Drescher, David	C3 Industries
Dumouchel, Phil	Charleston Home Ownership Center
Dunn, John	City of North Charleston
Hardy, Michael	City of North Charleston
Harper, Margaret	Charleston Home Ownership Center
Healy, Justin	Shutter Services Inc
Herridge, Van	Rapid Repairs
Herring, Troy	Storm & Security Guard, Inc.
Holland, Greg	Advanced Windows Products
Horton, Michael	Davis & Floyd
Jacques, Bill	American Inspection Services, Inc
James, Zoe	Clemson Extension Service
Jeffcoat, Ted	SCE&G
Johnson, Duane	Storm & Security Guard, Inc.
Kiser, Miles	Weather Shield Windows & Doors
Leris, Michael	The Muhler Company
Mays, Tim	Citadel
Nimmo, James	HurriSAFE Property Services Co., Inc.
Page, Marian	DHEC OCRM
Pierce, Randy	Town of Seabrook Island
Poulin, Dana	Town of Huger
Repik, Hilary	Town of Mount Pleasant
Sampson, Scott	Schmitt Sampson Walker Architects
Turpin, Don	

Attachment 3-E: Project Impact Committee Members Contact List (cont.)

Structural Projects Committee	
Name	Organization
Cabiness, Laura	City of Charleston
Hardy, Michael	City of North Charleston
Harrell, Ken	Dorchester County Emergency Services
Horton, Michael	Davis & Floyd
Hurley, Noel	US Geological Survey
Jeffcoat, Ted	SCE&G
Lund, Prentiss	BCD Council of Governments
Marcy, Douglas	US Army Corps of Engineers
Murphree, Brian	
Murray, Cal	SC Dept of Transportation
Pilgrim, Mark	Santee Cooper
Repik, Hilary	Town of Mount Pleasant
Ritter, H. N.	SC Dept of Transportation
Roberson, Ann	SC Dept of Insurance
Rodenberg, Dolph	Davis & Floyd
Saverno, Lynette	Natural Resources Conservation Service
Schweikart, Sue	Retired
Tilden, Thomas	SC Dept of Transportation
Trott, C. M. "Budge"	Town of Rockville
Emergency Services Committee	
Name	Organization
Farnsworth, Larry	CareAlliance
Glennon, Toy	County of Charleston Assessor's Office
Kann, Donna	Charleston County
Krantz, Rick	College of Charleston
Moss, Paul	MUSC
Nesmith, Alonzo	MUSC
Whiddon, Jack	Grainger Industrial Supply
Williams, Mark A.	SC DHEC
Natural Benefit Committee	
Name	Organization
Achenberg, Robert	Edisto Beach State Park
Anderson, Michael	Dial Cordy and Associates, Inc.
Barfield, Ed	City of North Charleston
Barton, Amanda	City of Charleston
Bowen, Brett	FEMA, Region IV
Cochrane, Nancy	
Crow, Jim	Historic Charleston Foundation
Durette, Fred	Charleston Parks & Recreation
Eckard, Debbie	Charleston Soil & Water
Floyd, Mickey	Conservation District
Gordon, David	US Fish & Wildlife Service
Handal, Leigh	Historic Charleston Foundation
Hengst, Robert	US Coast Guard
Hernandez, Debra	DHEC
Kennerty, William	Charleston Soil and Water Conservation District
Nunnally, Sis	SC Coastal Conservation League
Page, Marian	DHEC OCRM
Rodenberg, Dolph	Davis & Floyd
Saverno, Lynette	Natural Resources Conservation Service
Schweikart, Sue	Retired
Sisson, Paula	US Fish & Wildlife Service
Smith, Samuel	Dewees Builders, Inc.
Straw, William	FEMA, Region IV

Attachment 3-E: Project Impact Committee Members Contact List (cont.)

Public Information Committee	
Name	Organization
Arroyave, Eyda	City of North Charleston
Barrickman, Cheryl	Charleston County Building Department
Bryant, Victoria	Charleston Area Convention & Visitor's Bureau
Carroll-Ramsey, Suzane	Prudential Classic Commercial Properties
Cox, Danna	Westvaco Kraft Division
Crawford, Tom	WCIV TV -- Channel 4
Grieg, Deborah Tibbetts	WCIV TV -- Channel 4
Groover, Jerry	City of North Charleston
Hamburger, Stacy	Barnes & Noble Bookseller
Hausdoerfer, Karen	City of North Charleston
Kenyon, Kat	Town of Sullivan's Island
Kern, Douglas	City of Isle of Palms
Mays, Tim	Linbergh & Associates
Pierce, Randy	Town of Seabrook Island
Pope, Aaron	City of Folly Beach
Rankin, Andy	Charleston Area Convention & Visitor's Bureau
Roberts, Marlene	Charleston Southern University
Robertson, Mike	SC DHEC - OCRM
Rogers, Rob	Town of Mount Pleasant
Smart, James	Palmettomall.com
Strong, Willard	Santee Cooper
Toomes, Nickie	US Dept of Agriculture - Rural Development
Walsh, Bill	WCSC -- Channel 5
White, Bruce	State Farm
Miscellaneous Attendees	
Name	Organization
Horne, William	Charleston County Building Department
Muldrow, Jody	Town of Awendaw
Powell, Thomas	CareAlliance Health Services
Saben, David	City of North Charleston
Sanford-Coker, Christine	SC DHEC
Spencer, Elizabeth	City of Charleston
Townsend, Frances	Americorps NCCC

Members of the Project Impact committees also provide input into the planning process as they determine projects to perform under this initiative. These committees have broad-scale representation from multiple public, private, and non-profit organizations with an interest in hazard mitigation in the Charleston County Area.

Attachment 3-F: Charleston Area Local Governments/Entities Adopting Records

**Note: Table will be updated with new dates for plan adoption will be added as they occur.*

Charleston Area Local Governments/Entities Adopting the Charleston Regional Hazard Mitigation Plan					
Name of Jurisdiction/Entity	Date Adopted by Governing Council				
Town of Lincolnville	June 2, 1999	March 3, 2004	September 30, 2008		
Town of Awendaw	June 3, 1999	February 5, 2004	August 7, 2008	November 7, 2013	
Town of McClellanville	June 7, 1999	February 2, 2004	August 4, 2008	October 7, 2013	
Town of Mt. Pleasant	June 8, 1999	February 10, 2004	September 10, 2008	September 11, 2013	
Unincorporated Charleston County	June 15, 1999	February 17, 2004	September 2, 2008	November 7, 2013	
Town of Rockville	June 21, 1999	January 19, 2004	August 18, 2008	November 18, 2013	
Town of Kiawah Island	June 22, 1999	January 13, 2004	August 27, 2008	December 3, 2013	
Town of Seabrook Island	June 22, 1999	January 27, 2004	August 26, 2008	October 22, 2013	
Town of Ravenel	June 29, 1999	March 16, 2004	September 4, 2008	October 29, 2013	
Town of Meggett	July 15, 1999	March 22, 2004	August 25, 2008	October 28, 2013	
Town of Sullivan's Island	July 20, 1999	February 17, 2004	August 19, 2008	November 19, 2013	
City of North Charleston	September 9, 1999	January 22, 2004	August 14, 2008	October 24, 2013	
City of Charleston	September 20, 1999	February 13, 2004	September 23, 2008	October 22, 2013	
City of Folly Beach	August 22, 2000	September 23, 2004	August 26, 2008	October 8, 2013	
City of Isle of Palms	June 22, 1999	January 27, 2004	August 26, 2008	September 24, 2013	
Commissioners of Waterworks - Town of Mt. Pleasant	May 19, 2003	February 16, 2004	August 18, 2008	November 18, 2013	
Town of James Island		January 20, 2004	August 5, 2008	October 16, 2014	
North Charleston District Commission		January 12, 2004	August 11, 2008	October 14, 2013	
North Charleston Sewer District Commission		January 12, 2004	August 11, 2008	October 14, 2013	
Cooper River Park & Playground Commission		January 19, 2004	August 19, 2008	November 18, 2013	
St. John's Fire District Commission		February 4, 2004	September 8, 2008		
St. Paul's Fire District Commission		February 5, 2004	September 11, 2008	November 18, 2013	
James Island Public Service District		March 8, 2004	September 22, 2008	October 28, 2013	
Charleston County Park & Recreation Commission		March 29, 2004	August 27, 2008	October 18, 2013	
St. Andrews Public Service District		April 1, 2004	September 2, 2008	November 4, 2013	
Town of Hollywood		April 7, 2004	September 22, 2008	December 16, 2013	
Charleston Commissioners of Public Wks. (now known as Charleston Water System)		April 27, 2004	September 22, 2008		
College of Charleston		July 12, 2006	September 10, 2008	October 21, 2013	
Charleston County School District			August 11, 2008		
St. Andrews Parish Park & Recreation Commission		March 18, 2004	August 28, 2008	October 24, 2013	
Roper St. Francis				August 19, 2015	

Section 4 Hazard Assessment

4.1 - Prioritization

The following data is taken directly from the responses of the 2017 Charleston Regional Hazard Mitigation Plan jurisdiction/organization and citizen questionnaires. The data also includes local newspaper accounts, National Weather Service data, and/or academic research conducted regarding hazard-related events that have occurred in the Charleston County area or have been studied as potential hazards for this area. Hazard priorities from the questionnaires were rated in severity from 1 to 5, five being the least priority. Responses came from a cross section of various organizations, governmental and private sector, in and around the Charleston Region.

The highest priority hazard per the questionnaires was the threat of a hurricane. The next highest concern was flooding. Local concern over sea level rise led to the addition of this hazard to the surveys this year. The community reflected this concern by ranking sea level rise as the third highest priority. Earthquakes were considered the next most serious threat. The threat of tornadoes, the next most serious hazard, appeared to be a significant concern particularly among the private sector respondents. Hazardous materials, terrorism, and wildfires sequentially followed. Other hazards, such as tsunamis and dam failures were the lowest priority hazards. Since 1999, each major survey has confirmed the general ranking of hazards with hurricanes topping list of concerns, followed closely by similarly ranked flooding, earthquakes, and tornadoes.

The Disaster Mitigation Act of 2000 added hazards to the survey and is also evaluated in the hazard mitigation plan.

Following is the hazard ranking as determined from the most recent survey: 1. Hurricane; 2. Flood; 3. Sea Level Rise; 4. Earthquake; 5. Tornado; 6. Hazardous Materials Incident; 7. Terrorist Incident; 8. Wildfire; 9. Tsunami; and 10. Dam Failure. Other hazards indicated on this questionnaire were environmental/water and air quality. In this Plan, environmental hazards such as water pollution/contamination are included in the hazardous materials release discussion, as are highway accidents that result in a release of a hazardous material or involve mass transit. Miscellaneous hazards also included in this Plan are winter weather, severe storm, drought, and rip currents as they are hazardous and quantifiable in the area, but not a top priority.

In the 2017 survey, hurricanes again topped the list as the most dangerous and hazardous on both the public surveys as well as the government/organization survey. Flooding followed as a close second on both surveys. The significance of the newest listed hazard, sea level rise, was validated with its ranking as the third most threatening hazard. Earthquakes, tornadoes, and wildfire trailed closely for both surveys, but had very similar average scores.

These results are in line with the anecdotal evidence from dozens of public Project Impact community events, disaster expos, and neighborhood association meetings. Hurricane and flooding mitigation questions comprise most of the questions directed at the Charleston County Building Inspections Department. Charleston County borders the Atlantic Ocean for nearly 100 miles and the ocean is a defining characteristic for the Region, both economically and certainly from a hazardous perspective.

Social Vulnerability

Social Vulnerability is considered in this document to analyze the underlying characteristics of the population that either attenuate or exacerbate the effects of hazard events. The Social Vulnerability Index (SoVI) provides a peer reviewed methodology for creating a standardized comparative metric aimed at understanding differences in socio-economic and demographic information between places. SoVI includes those population characteristics known to influence the ability of social groups and communities to prepare for, respond to, and recover from disasters. Key social indicators that consistently appear in the literature as influencing pre-impact preparedness and post-event response and recovery include attributes such as socioeconomic status (wealth, education, occupation), age (elderly populations and young children are more vulnerable); gender, race and ethnicity; employment and employment sector; and special needs populations. However, it is not just the proportion of the residents in these broad categories that is important, but instead how race, socioeconomic status and gender interact to produce socially vulnerable populations. Selecting one variable does not adequately capture communities that are described as below the poverty level, all people in poverty are in one element.

Based on the SoVI methodology, the scores use a three-class standard deviation model where greater than 0.5 standard deviation means elevated; 0.5 to -0.5 means moderate; and less than -0.5 mean limited. Charleston County has a SoVI of -1.93 on limited impact based on U.S. Census Data 2010, Hazards and Vulnerability Research Institute calculation.

Emergency Preparedness

In the 2017 survey, a series of questions were asked about emergency preparedness concerning different hazards discussed in this Plan to two audiences: jurisdiction/organization representatives and citizens. Analysis of the jurisdiction and citizen surveys show discrepancies between how governing bodies and individual citizens rank hazards and how well prepared the community is to face these hazards. Below are two tables showing the rankings on emergency preparedness: one for jurisdictions and the other for citizens. From these tables, it is evident that both jurisdiction representatives and citizens feel prepared for hurricanes, flooding and tornadoes. This is beneficial as these among the top hazards when asked about threat level in the hazard assessment questions. The most notable hazard is sea level rise, as it is perceived as the third most threatening hazard but jurisdictions and citizens are eighth and fifth most prepared, respectively, for this hazard among all ten hazards in the survey.

Rankings for Emergency Preparedness: based on <i>Citizen Survey</i>	
Rank	Hazard
1	Hurricane
2	Flooding
3	Tornadoes
4	Wildfires
5	Sea Level Rise
5	Earthquakes
7	Hazardous Materials
8	Terrorist Incident
9	Dam Failure
10	Tsunami

Rankings for Emergency Preparedness: based on <i>Jurisdiction Survey</i>	
Rank	Hazard
1	Hurricanes
2	Flooding
3	Tornadoes
4	Hazardous Materials
5	Wildfires
5	Terrorist Incident
7	Earthquakes
8	Sea Level Rise
9	Dam Failure
10	Tsunamis

Below is a table of all of the hazard events for the 2016-2017 year.

Hazard Events May 1, 2016-April 30, 2017		
Event	Incidents	Description and Information
Flooding	16	Includes flash flooding and coastal flooding.
Rip Current	4	One injury involved.
Hurricane, Tropical Storm, Tropical Depression	3	Hurricane Matthew made landfall in South Carolina as a Category 1 Hurricane
Severe Weather	58	Includes strong wind, thunderstorms, hail, and lightning strikes.
Winter Weather	0	
Fire	1155*	Includes aircraft fire, explosion, marine fire, outside fire, wildfire*, vehicle fire, and train or rail fire.
Tornado	0	
Earthquake	0	
Drought	6	Fourteen total weeks of a drought condition of D0-abnormally dry.
Water Rescue	86	Includes floodwater rescue, inland and coastal rescue, oceanic rescue, and vehicle water rescue.
Train and Rail	0	
Hazardous Material	506	Includes fuel spill, gas leak, and hazmat incidents.
Suspicious Packages	111	3 explosives was found.
Bomb Threat	13	
Pandemic	0	

*Wildfire statistics are from 2015-2016. Will be updated once available from SC Forestry Commission.

4.2 - Hurricane

Background

Hurricanes and tropical storms are classified as cyclones, and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere with a diameter averaging 10 to 30 miles across. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Tropical cyclones maintain intact by extracting heat energy from the ocean at high temperatures and releasing heat at the low temperatures of the upper troposphere. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico during the official Atlantic hurricane season, which extends from June through November.

The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, tornadoes and flooding. Coastal areas are also vulnerable to the additional forces of storm surge, wind-driven waves, tidal flooding and beach erosion. Storm surge is often the greatest hurricane-related hazard. Storm surge is water that is pushed toward the shore by the force of the winds swirling around the storm. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the water level twenty (20) feet or more. In addition, wind driven waves are superimposed on the storm tide. This rise in water level can cause severe inundation in coastal areas, particularly when the storm tide coincides with the normal high tides.

Classification

The National Weather Service's National Hurricane Center uses the Saffir-Simpson Scale to classify hurricane severity. The scale categorizes a hurricane's present intensity on a one (1) to five (5) rating and provides an estimate of property damage and coastal flooding upon landfall. Wind speed determines a hurricane's Saffir-Simpson Scale rating since storm surge is greatly dependent on the coastline shape and slope of the continental shelf.

Saffir-Simpson Hurricane Scale					
Category	Winds (mph)	Storm Surge (ft)	Minimum Surface Pressure (Millibars)	Damage	Damage Description
1	74 - 96	3 - 5	Greater than 980	Moderate	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.
2	97 - 111	6 - 8	979 - 965	Severe	Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings.
3	112 - 131	9 - 12	964 - 945	Extensive	Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures, with larger structures damaged by floating debris. Terrain may be flooded well inland.
4	132 - 155	13 - 18	944 - 920	Extreme	More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.
5	>155	19+	Less than 920	Catastrophic	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.

Source: National Hurricane Center

Storm Surge: Storm Surge is elevated water level that is pushed towards the shore by the force of strong winds that result in the piling up of water. The advancing surge combines with the normal tides, which in extreme cases can increase the normal water height to rise over 20 feet. The storm surge arrives ahead of the storm’s actual landfall and the more intense the hurricane is; the sooner the surge arrives. Water rise can be very rapid and can move far inland, posing a serious threat to those who have not yet evacuated any flood-prone areas especially since about 68% of the Charleston Region rests within a floodplain and some jurisdictions are located 100% in the floodplain. Debris carried by the waves can also contribute to the devastation. A surge of high water topped by waves driven by hurricane force winds can be devastating to coastal regions, causing severe beach erosion and property damage along the immediate coast.

Wind: The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous, however, and require preventative measures. A tropical storm becomes a hurricane when the winds meet or exceed speeds of 74mph. The strongest, and subsequently most threatening, hurricanes can exceed speeds of 157mph. The strong winds of a hurricane can cause dangerous waves, posing a significant hazard to mariners and coastal residents and visitors as waves overwhelm sea walls and flooding occurs. Such high winds can pick up debris and turn them into dangerous missile-like objects, knocking down trees and buildings.

Heavy Rain: Hurricanes are capable of generating great amounts of rainfall. Rainfall rates are related to the size and strength of the hurricane; slower moving and large storms tend to generate more rain. Hurricane Isaac in 2012, being both large and slow moving, produced 1 to 2 inches of rain per hour in some locations.

Tornadoes: Hurricanes and tropical storms may spawn tornadoes that are typically further out from the center of the system; generally embedded in the rain bands. Hurricane-spawned tornadoes also generally have a shorter lifespan but can still cause great damage.

Erosion: Erosion is the process that wears away land due to chemical or physical activity of wind, water, or other meteorological conditions. The two major leading forces to erosion are wind and water. Major storms can cause erosion by picking up soil, sand or vegetation from the combination of high winds, heavy surf and storm surge. Human interactions, such as new development or construction in coastal regions can influence erosion as well.

Hurricanes often threaten the Charleston Region in the summer and early fall seasons. The most devastating hurricane to the Charleston Region in terms of dollars of property damage was Hurricane Hugo (Category 4), which struck on September 21, 1989 and was the 11th most damaging hurricane in the history of the United States as of September 2005. Charleston also had a brush with Hurricane Floyd (Category 2) on September 15, 1999. The most recent event to strike the Charleston Region was Hurricane Matthew on Oct. 8, 2016 with the impending threat triggering a mandatory evacuation from Governor Nikki Haley.

Location

Hurricanes and tropical storms threaten the entire Atlantic and Gulf coast of the United States, as well as the Pacific coast. Hurricanes that originate in the Gulf of Mexico can still impact the Charleston Region. With about 68% of the Charleston Region in the floodplain and some jurisdictions located 100% in the floodplain and with the community being a coastal community, the Region is vulnerable to hurricanes and tropical storms and their aftermaths. Since hurricane-landing patterns are unpredictable until the storm has formed and is within a short time from landing, the Region cannot presume that past strike history will continue into the future, and all areas within the Region are subject to these types of events.

Occurrences

Hurricane Events between May 1, 2013 - April 30, 2017			
Name	Category	Date	Damage Description
Tropical Storm Andrew		June 6, 2013	Heavy rainfall 3-7 inches
Tropical Storm Arthur		July 3, 2014	Tropical storm watch was posted for Santee River to Bogue Banks, NC. Wind gusts up to 42 mph (68 km/h) along coastal areas, resulting in scattered power outages
Tropical Storm Ana		May 7-8, 2015	Tropical storm warning from South Santee River to Surf City, NC. Produced a small storm surge along Charleston County coast.
Hurricane Joaquin	4	October 1-5, 2015	Did not make landfall in the US, but caused catastrophic flooding in South Carolina and intense flooding and power outages in Charleston County. South Carolina Governor Haley declared a State of Emergency.
Hurricane Matthew	1	October 7-8, 2016	Once a Category 5 hurricane before ripping through Haiti and eastern Cuba, Hurricane Matthew had downgraded to a Category 1 by the time it hit South Carolina. Even so, 830,000 South Carolinians lost power, 355,000 evacuated from their homes, and 4 lost their lives.

Probability

From August 11th, 1940 to April 30, 2017, Charleston County experienced 34 hurricane type events, from named hurricanes to tropical storms/depressions. Hurricane Hugo is known to be the Region's 100-year storm since it hit the area directly and was the most devastating hurricane event for the Region. A 100-year storm has a 1% probability of occurring at that location in any given year. Encountering a "100-year storm" on one day does not decrease the chance of a second 100-year storm occurring in that same year or any year to follow. However, the Region is highly likely or has a 100% chance each year of being affected by hurricane type events, either directly or by the remnants of a hurricane, tropical storm or a tropical depression. Given the records, the chance of a storm to affect the Region is 42%.

4.3 - Flooding

Background

Flooding is the most frequent and costly natural hazard in the United States and are a potential threat for most areas in the U.S. every day. The National Flood Insurance Program defines a flood as a general and temporary condition of partial or complete inundation of normally dry land. Flooding is simply the overflow of water that submerges land, which is usually dry. The National Weather Service monitors conditions around the clock that may lead to flooding. Flooding can occur around the United States and the Charleston Region due to heavy precipitation, tropical storms/hurricanes, stream and river basin topography problems, dam failure, and drainage problems. According to the National Oceanic and Atmospheric Administration (NOAA), about three fourths of all presidential disaster declarations are due to flooding. Non-hurricane related flooding events occur each year with variation in intensity and are usually classified in the following three categories: coastal flooding, flash flooding, and general flooding. The National Weather Service also categorizes flooding in relation to their potential damage in three categories: Minor, Moderate and Major.

Classification

Classifying floods is often very diverse in their meaning and are always broadly classified into different categories. Most of the flooding that occurs in the Charleston Region can be labeled as Coastal Flood, Flash Flood, and the general term Flood according to the National Oceanic and Atmospheric Administration (NOAA).

Coastal Flood: Flooding of coastal areas are due to the vertical rise above normal water level caused by strong, persistent onshore wind, high astronomical tide, and/or low atmospheric pressure, resulting in damage, erosion, flooding, fatalities, or injuries. Coastal areas are defined as those portions of coastal land zones (coastal county/parish) adjacent to the waters and bays of the oceans. Farther inland, the Storm Data preparer must determine when and where to encode a flood event as Flash Flood or Flood.

Flash Flood: A rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within six hours of the causative event (e.g., intense rainfall, dam failure, ice jam-related), on a widespread or localized basis. Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising floodwaters. Flash floods do not exist for two or three consecutive days.

Flood: A flood is any high flow, overflow, or inundation by water, which causes or threatens damage. In general, this would mean the inundation of a normally dry area caused by an increased water level in an established watercourse, or ponding of water, generally occurring more than 6 hours after the causative event, and posing a threat to life or property. This can be on a widespread or localized basis.

National Weather Service Flood Categories	
Category	Damage Description
Minor	Minimal or no property damage but with some public inconvenience.
Moderate	Inundation of secondary roads, some evacuation may be required, and higher elevation necessary to save property.
Major	Extensive inundation and property damage. Evacuation of people and closure of both primary and secondary roads.

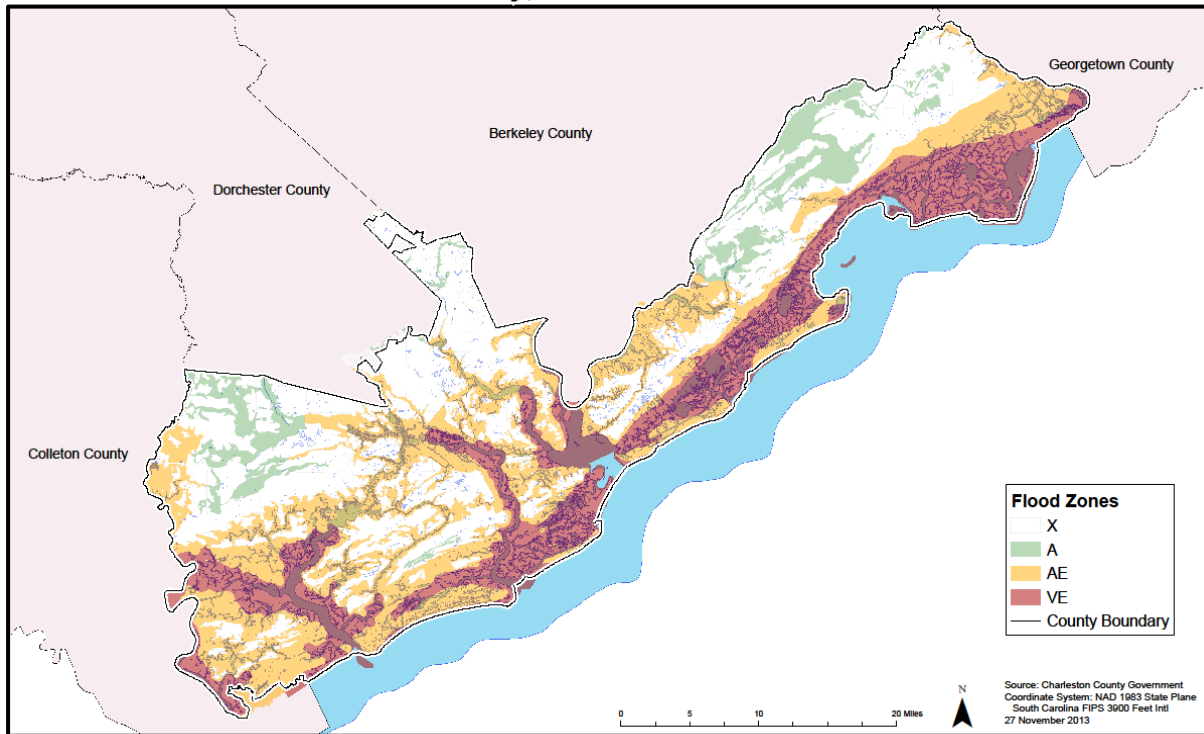
Source: National Weather Service

A Flood hazard is a serious threat to everyone in the Charleston Region because of its low elevation and frequency of storms. The Charleston Region’s worst experience with flooding came when Hurricane Hugo hit with a storm surge that reached 19.3 feet, which flooded both coastal and inland areas. Flooding events occur each year with great variation throughout the Charleston Region but the impact of such flooding events is completely dependent upon the area.

Location

Flooding can occur throughout most of the Charleston Region since around 68% resides within a floodplain. Floodplains are designated by the frequency of the flood that is large enough to cover them. Flood frequencies are determined by plotting a graph of the size of all known floods for an area and calculating how often floods occur. Federal Emergency Management Agency (FEMA) identifies floodplain areas by producing Flood Insurance Rate Maps (FIRM). These maps show all locations near major bodies of water, and show base flood elevations and floodplain boundaries like the 100-year floodplain boundaries. 100-year flood event is a 1% probability of occurring in any given year. The roughly 68% of the areas located in the floodplain are exposed to the threat of floods but that does not mean the other areas are not vulnerable to a flash flood or flooding events. Damage infrastructure and roadways can limit mobility for citizens. All areas can experience flooding hazards.

Charleston County, South Carolina Flood Zones



Historical Occurrences

Flooding Events between May 1, 2013 - April 30, 2017	
	# of Events
Flash Flood/Flood	89
Coastal Flood	58
Total	148 Flooding Events during 68 days total
Total	Estimated Property Damage \$19,247,000

Source: NOAA National Centers for Environmental Information

These flooding events were mainly the result from heavy rain or severe weather (thunderstorms, tropical storms, heavy rain) incidents that caused flooding in the Charleston Region. Charleston broke its record for number of annual-flood days last year. The previous record of 38 days, observed in 2015, was exceeded by 12 days for a total of 50 annual-flood days in 2016. Compared to 1995, trends in flooding during 2016 have increased by 130 percent on average.

Probability

Since about 68% of the Region is within the floodplain, those areas are highly likely to experience a flood event at any given point in a given year. Given the 148 events over the years of 2013 to April 30, 2017, there is a 90% chance of a flooding event to occur. However, with the Region located on the coast, low elevation, and the unpredictability of severe weather, there is a 100% probability that the effects of flooding can occur.

4.4 – Sea Level Rise

Background

Over the years, sea level rise has threatened the world and coastal communities as more water is added to the ocean and more development occurs at the coast. With the addition of other climate driven events such as storms and flooding, irreversible change is predicted to occur in the coastal regions, especially Charleston County. There are two main causes of sea level rise: the melting of land ice and the expansion of warm seawater. Both of these phenomena add water to the overall Global Mean Sea Level (GMSL). Even small amounts of sea level rise drastically affect flooding incidences and can make rare floods more common. The current rate of sea level rise is 3.2 mm per year. A century ago, the rate was about half the amount. This shows that over time the sea level is rising faster as time goes on. Over the past century sea level has risen 10 to 20 centimeters overall. These data measurements and predictions come from core samples, tide gauge readings and satellite imagery. Tides and storm surge are two indicating factors that demonstrate how a community will be affected by sea level rise in the future. Tides are the daily submergence and reemergence of land due to the rising and falling of the sea based on the lunar cycle. Tides are good indicators of sea level as they are predictable. Tides are rising and flooding coastal zones more frequently and at previously unaffected areas as sea, level rises. King tides which are higher than normal high tides coinciding with the alignment of the earth, moon and sun. These tides bring an additional amount of water on land, and in the future these king tides will be the normal high tides. Storm surge is also increasing to become higher than normal as sea level rises with storms becoming more severe and affect areas further inland. Sea level rise can be categorized into two types: eustatic and isostatic, and communities can be ranked based on their coastal vulnerability index.

Classification

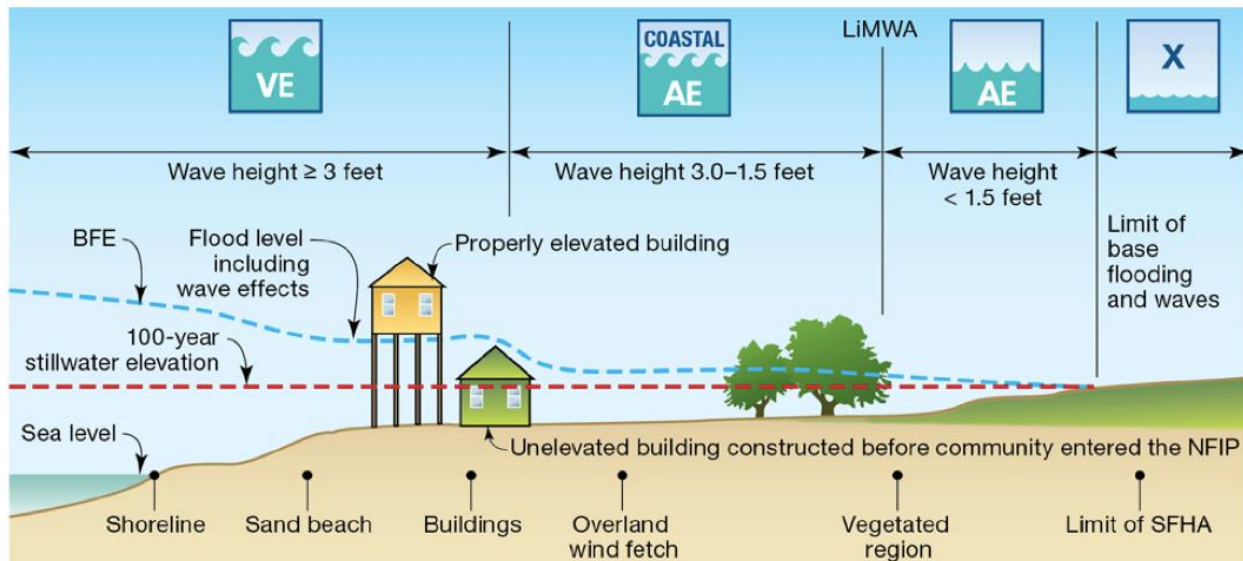
Classifying sea level rise is broad in nature, and case studies of individual areas take a closer look at the effects of sea level rise. There are two types of sea level rise: eustatic and isostatic. Eustatic refers to the global sea level rise and major trends being observed. Isostatic refers to the local sea level rise based on shoreline changes in the area. Sea level rise is occurring globally, but at different scales. Some areas are affected more than others due to their coastal vulnerability, if land is sinking or rising, amount of urbanization and development, and proximity to glaciers. The topography and landforms of Charleston consists of barrier islands and wetlands, which tend to be low-lying areas more susceptible to sea level rise. According to the following tables, the Charleston County area would be classified as “very high” on the coastal vulnerability index.

VARIABLE	Ranking of coastal vulnerability index				
	Very low	Low	Moderate	High	Very high
	1	2	3	4	5
Geomorphology	Rocky, cliffed coasts Fiords Fiards	Medium cliffs Indented coasts	Low cliffs Glacial drift Alluvial plains	Cobble beaches Estuary Lagoon	Barrier beaches Sand Beaches Salt marsh Mud flats Deltas Mangrove Coral reefs
Coastal Slope (%)	>0.115	0.115 – 0.055	0.055 – 0.035	0.035 – 0.022	< 0.022
Relative sea-level change (mm/yr)	< 1.8	1.8 – 2.5	2.5 – 3.0	3.0 – 3.4	> 3.4
Shoreline erosion/accretion (m/yr)	>2.0	1.0 – 2.0 Accretion	-1.0 – +1.0 Stable	-1.1 – -2.0	< - 2.0 Erosion
Mean tide range (m)	> 6.0	4.1 – 6.0	2.0 – 4.0	1.0 – 1.9	< 1.0
Mean wave height (m)	<0.55	0.55 – 0.85	0.85 – 1.05	1.05 – 1.25	>1.25

Source: US Department of Interior & US Geological Survey

Location

Flooding and tidal flooding is a good indicator of what areas are most at risk for sea level rise and the stressors that accompany it: nuisance flooding, increased storm surge, loss of property. Land in the most susceptible flood zones (AE and VE) will be most affected as sea level continues to rise. Areas of the most susceptibility include Eastern Folly Beach and Morris Island, the tips of Sullivan’s Island, the northeastern coast of James Island near SC-30 and Harbor View Rd., all of Seabrook and Edisto’s coastline, eastern Isle of Palms and Caper’s Island, all of Awendaw’s coastline, and the northeastern coastline of Murphy Island and the coast of the Dunes West Golf and Resort Club. Below is an illustration of the definitions of the different flood zones:



Amount of Land Area of Charleston County Above Sea Level										
Elevation above spring high water (m)	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
Area of Land (sq. km)	108.6	175.5	223	305.5	344.2	421.8	464.9	587.2	684.4	858.2
Percent of Total Land Cover	4.6%	7.4%	9.4%	12.9%	14.5%	17.8%	19.6%	24.8%	28.9%	36.2%

Occurrences

King tides, which is the above average high tide occurring when once a lunar cycle, are a good predictor of sea level rise. On average there were 10.4 observed king tides for every king tide event, compared to the predicted 4.9 king tides. The depth averaged more than half a foot deeper than expected. There were 44 more king tides than predicted in 2016 and a cumulative 4.7 feet higher. King tides give a community a glimpse into what it will be like to live with a higher sea level. Communities can expect more king tides in the future as sea level continues to rise.

Duration and Depth* of King Tides in Charleston Area from April 2016- December 2016**										
Months of 2016	April	May	June	July	Sept	Oct	Nov	Dec	Average	Total
Predicted Number of Tides	3	4	4	3	7	7	6	5	4.9	39
Observed Number of Tides	7	7	11	5	11	21	14	7	10.4	83
Predicted Depth (ft.)	6.8	7.0	6.9	6.6	6.8	7.2	7.2	6.9	6.9	55.4
Observed Depth (ft.)	7.0	7.7	7.6	7.2	7.3	7.8	7.9	7.6	7.5	60.1

*Depth is based off the Charleston Harbor Tide Gauge

**Data gathered through MyCoast.org backed by SC DHEC: <https://mycoast.org/sc/king-tides>



Photo from Barre St on April 24th, 2017, 2 days before the predicted king tides. The observed water level on this day was 7.5 feet at the Charleston Harbor Tide Station, 1.3 feet higher than predicted. The average high tide depth for April 2017 was around 5.7 feet.

Probability

While sea level rise predictions vary on how much the sea level will rise, there is a general consensus that sea level will continue to rise. According to the Intergovernmental Panel on Climate Change (IPCC), the ocean is expected to rise 11 to 38 inches by the year 2100. This would have dramatic effects on Charleston County and other coastal communities across the East Coast.

It is also predicted that the number of king tides will increase in 2017, as well. Below is a list of the predicted dates of king tides from SC Department of Health and Environmental Control.

2017 Predicted King Tides
April 26-29
May 24-28
June 22-25
July 21-24
August 19-21
September 18
October 7-9
November 3-8
December 2-6

4.5 - Earthquake

Background

An earthquake is a sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. Most earthquakes are caused by the release of stresses accumulated because of the rupture of rocks along opposing fault planes in the Earth's outer crust. These fault planes are typically found along borders of the Earth's 10 tectonic plates. The areas of greatest tectonic instability occur at the perimeters of the slowly moving plates, as these locations are subjected to the greatest strains from plates traveling in opposite directions and at different speeds. Deformation along plate boundaries causes strain in the rock and the consequent buildup of stored energy. When the built-up stress exceeds the rocks' strength, a rupture occurs. The rock on both sides of the fracture is snapped, releasing the stored energy and producing seismic waves, generating an earthquake. Ground acceleration caused by earthquakes has the potential to destroy buildings and infrastructure and cause loss of life. Aftershocks are typically smaller than the main shock, and can continue over a period of weeks, months, or years after the initial earthquake is felt. In addition to the effects of ground acceleration, earthquakes can also cause landslides, and liquefaction under certain conditions. Liquefaction occurs when unconsolidated, saturated soils exhibit fluid-like properties due to intense shaking and vibrations experienced during an earthquake. Together, ground shaking, landslides, and liquefaction can damage and destroy buildings, disrupt utilities (i.e. gas, electric, phone, water), and trigger fires.

Classification

Earthquakes are measured in terms of intensity and magnitude. Magnitude is measured with the Richter Scale, which is an open-ended logarithmic scale that describes the energy of an earthquake through the measure of shock wave amplitude. Intensity uses the Modified Mercalli Intensity (MMI) scale to measure the effects of an earthquake at a particular place.

Magnitude and Intensity Rating	
Richter Magnitude Scale	Typical Maximum MMI
1.0 to 3.0	I
3.0 to 3.9	II to III
4.0 to 4.9	IV to V
5.0 to 5.9	VI to VII
6.0 to 6.9	VII to IX
7.0 and Higher	VIII or Higher

Modified Mercalli Intensity Scale		
Scale	Intensity	Description of Effects
I	Instrumental	Detected only on seismographs.
II	Feeble	Some people feel it.
III	Slight	Felt by people resting; like a truck rumbling by.
IV	Moderate	Felt by people walking.
V	Slightly Strong	Sleepers awake; church bells ring.
VI	Strong	Trees sway; suspended objects swing, objects fall off shelves
VII	Very Strong	Mild alarm; walls crack; plaster falls.
VIII	Destructive	Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged.
IX	Ruinous	Some houses collapse; ground cracks; pipes break
X	Disastrous	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread.
XI	Very Disastrous	Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards.
XII	Catastrophic	Total destruction; trees fall; ground rises and falls in waves.

Source: Federal Emergency Management Agency

The most significant earthquake to happen in the Charleston Region was in 1886, when an estimated 7.3M occurred in Summerville, SC outside of Charleston. This earthquake was the

most destructive, killing 60 people and causing \$5 to \$6 million (1886) worth of damage. This was the largest known earthquake on the east coast and is the type of event that occurs only every 500 years.

Location

Earthquakes are not an uncommon occurrence in South Carolina. The majority of earthquakes worldwide occur at plate boundaries when plates stick and then jump past each other. The cause of earthquakes in South Carolina is not so clear; the quakes are located within a plate rather than at a plate boundary. In South Carolina, approximately 70 percent of the earthquakes occur in the Coastal Plain and most are located around three areas west and north of Charleston: Ravenel-Adams Run-Hollywood, Middleton Place - Summerville, and Bowman. Geologically, Charleston lies in one of the most seismically active areas in the Eastern United States. This seismic cluster is known as the Middleton Place - Summerville Seismic Zone (MPSSZ).

Historical Occurrences

Earthquake Events May 1, 2013 - April 30, 2016		
Date	Location	Magnitude
9/7/2013	Ladson	2.3
9/15/2013	Lincolnton	2.3
9/20/2013	Ladson	2.2
11/3/2013	Ladson	1.9
11/18/2013	Ladson	1.7
6/23/2014	Summerville	1.8
7/27/2014	Ladson	1.9
5/22/2015	Summerville	1.7
7/20/2015	Ladson	1.2
8/24/2015	Summerville	2.1
12/5/2015	Summerville	1.3
2/8/2016	Ladson	1.9
5/14/2016	Lincolnton	1.8
6/7/2016	Summerville	1.8
9/25/2016	Seabrook Island	1.9
9/30/2016	Ladson	1.7
10/1/2016	Ladson	1.9
Total	17 Earthquake Events	

Source: South Carolina Department of Natural Resources

Probability

Since different magnitude levels are felt from short to long ranges, we can include there is a highly likely chance or 100% chance that the whole Region can experience an earthquake or the

aftershocks on one, causing minor to severe damage or loss of life. The earthquake of 1886 was estimated to be a 1 in 500-year event, meaning there is an estimated 0.2% chance of a comparable earthquake happening again.

4.6 - Tornado

Background

A tornado is a violently rotating column of air forming a funnel-shaped cloud that extends toward the ground from the base of a thundercloud. They are often referred to as a twister or cyclone although cyclone is a term in meteorology to name any closed low-pressure circulation (e.g. hurricane). This violent storm can produce winds up to 300 miles per hour and can move any direction at an average speed of 30 miles per hour. Tornadoes are most often generated by thunderstorms but sometimes are a result from hurricanes or tropical storms, which is why tornadoes are a threat to the Charleston Region. Tornadoes may form at any time of the year, but the peak of events occurs in the spring and early summer from March through June.

Classification

High winds of tornadoes are the driving force for all damages during a tornado. Picking up debris, and turning them into deadly missiles. It is rare to be able to measure pressure changes and wind speeds of a passing tornado, but it is possible to classify the damage. Mostly, tornadoes cause the greatest damage to structures like residential homes that are lightly constructed and hard to remain localized. The Fujita Scale (F-Scale) was the standard measurement for rating the strength of a tornado. The scale is based on an analysis of damage after a tornado to infer wind speeds. After 2007, the National Weather Service introduced the Enhanced Fujita Scale (EF-Scale). The new scale takes into account quality of construction and standardizes different kinds of structures. The only differences between the two are the adjusted wind speeds.

Enhanced Fujita Scale (EF-Scale)		
EF-Scale Number	Wind Speed (mph)	Type of Damage Done
EF0	65 - 85	Minor damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees push over.
EF1	86 -110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111 - 135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame houses shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136 - 165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166 - 200	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	>200	Extreme damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m; steel reinforced concrete structure badly damaged; high-rise buildings have significant structural deformation.

Source: National Oceanic and Atmospheric Administration

The strongest tornado in the Charleston Region was an EF2 tornado that had maximum winds reaching 120mph. The tornado touched down near Morris Acres on Johns Island in 2015. It is possible for a stronger tornado to impact the Charleston Region, though most of the tornado reports are unconfirmed or are a confirmed EF0 tornado.

Location

Tornadoes are not limited to specific geographic regions, although they are most common in states like Oklahoma, Texas, and Kansas. Tornadoes have been documented in every state within the United States. Hurricanes are the biggest threat to the Region and since a hurricane can produce a tornado then the whole Charleston Region is vulnerable to the threat of a tornado during a hurricane or tropical storm. Tornadoes can also form over water as well as land.

Historical Occurrences

Tornado Events between May 1, 2013 - April 30, 2017			
Date	Area	Scale	Damage
5/31/2014	Rockville	EF0	0
9/24/2015	Morris Acres	EF2	\$1,540,000
Total*	2 Tornado Events		\$1,540,000

**No tornado events have occurred since 2015
Source: National Climatic Data Center*

Probability

According to the National Climatic Data Center and the National Oceanic and Atmospheric Administration, there is approximately one tornado every year in Charleston County. However, there is around a 94% chance it will be classified an EF1 or below. A tornado above EF1 has only occurred twice in the Region's history. It is possible for a stronger tornado to impact the area.

4.7 - Hazardous Materials

Background

In most places, chemicals and hazardous materials surround communities. Hazardous materials come in many different forms and incidents can happen in fixed or mobile facilities. Hazardous materials are stored in homes and businesses throughout but also are shipped daily throughout communities through the highways, waterways, railways, or through pipelines. Incidents involving hazardous materials can include spilling, emitting, discharging, disposing, leaking, or escaping into the environment of any hazardous material. These materials, in their various forms, can cause injury, long-term health problems, damage to property, and even death.

Classification

The United States Department of Transportation regulates hazmat transportation within the territory of the U.S. The Federal Motor Carrier Safety Administration was established as a separate administration within the U.S. Department of Transportation in 2000 to reduce crashes, injuries, and fatalities involving large trucks and buses. Together they develop and enforce safety regulations, and educate about hazardous materials. The U.S. Department of Transportation uses a standard system of nine classes that identify different hazardous materials. These nine classifications must be labeled on all hazardous materials even if they are in mobile or fixed facilities.



Class 1: Explosives: Materials with an explosion, projection, fire, or blast hazard.

Class 2: Gases: Flammable or non-flammable compressed gases, toxic or non-toxic.

Class 3: Flammable liquids: Flammable liquids (flash point below 141°) and combustible liquids (flash point 141°-200°).

Class 4: Flammable Solids: Flammable solids, spontaneously combustible and dangerous when wet materials.

Class 5: Oxidizer and Organic Peroxide

Class 6: Toxic Materials: Poisonous materials and infectious substances.

Class 7: Radioactive Materials: Materials that emit radiation.

Class 8: Corrosive Materials: Materials that cause destruction of human skin at site of contact or corrosion rate on steel or aluminum.

Class 9: Miscellaneous: Materials that present a hazard during transport but do not meet other class definitions (ex. dry ice or lithium batteries).

The Charleston Region has experienced minor incidents relating to hazardous materials such as natural gas leaks, chemical spills, automobile accident cleanups and more. No serious incidents or injuries have been reported due to a hazardous materials incident.

Location

The Charleston Region is a rapidly growing international port with many industries and growing businesses. The Charleston Region also has a United States Air Force Base and several other smaller military establishments, which handle various types and quantities of hazardous

materials. Hazardous materials are a continuous potential hazard due to the large amount of transportation of these materials occurring in and around the Region.

Historical Occurrences

The Charleston Regional Hazard Mitigation Plan began collecting Hazardous Material incident data from the Charleston County Consolidated 9-1-1 system in 2012. Below is a table summarizing hazardous material incidents from 2013-2017.

Hazardous Materials Incidents from May 1, 2013 to April 30, 2017					
As Reported by Charleston County Consolidated 9-1-1					
Category	2013-2014	2014-2015	2015-2016	2016-2017	
Hazmat	37	51	18	24	
Fuel Spill	104	111	102	85	
Gas Leak/Gas Odor (Natural and LP Gases)	278	201	360	397	
Total	419	363	480	506	1768

Probability

Hazardous Materials are located in residential and commercial locations throughout the Region. Gas leaks and automobile accidents occur frequently in both locations. Since the Charleston Region is a growing international port and military base location, the transportation of hazardous materials happens every day. The Region has a 100% chance of hazardous material incidents occurring each year but no major incidents or related injuries are expected.

4.8 - Terrorism

Background

Terrorism is commonly defined as the use of violence and threats to intimidate or coerce in the pursuit of political, religious, or any ideological goal with disregard to the safety of innocent humans. Terrorism is often described as both a tactic and strategy or a crime and a holy duty. The U.S. Department of Defense, The Federal Bureau of Investigation (FBI) and the U. S. Department of State all defined terrorism differently but all definitions have the same key elements of violence, intimidation, and fear.

Classification

Terrorism can be in the form of many different threats like kidnapping, hijacking, bombings, assassinations and the use of chemical, nuclear, or biological weapons. All of these threats range from minimal to extreme losses of life, injury, destruction of property and economic loss. Military or civilian government facilities, airports, large cities, public gatherings and landmarks are often high-risk targets for acts of terrorism. The following are main terrorism threats from the Federal Emergency Management Agency and the U.S. Department of Homeland Security that are used in a terrorism situation.

Explosions: An explosive device is one of the most common weapons among terrorist. They are highly portable and can be easily detonated from remote locations or by suicide bombers. Information for making an explosive device is readily available to anyone. Bombs have been used to damage or destroy political, financial and religious institutions. The aftermath of an explosion can lead to other threats like fire and the damage extent is unpredictable.

Biological threats: Biological agents are toxins or organisms that can kill or incapacitate people, crops, and livestock. An attack is when there is a deliberate release of biological substances or germs through the air, animals, food/water, and humans. The three basic groups of biological agents that would likely be used as weapons are bacteria, viruses and toxins. If encountered, humans should contact authorities of any unusual and suspicious substances.

Chemical threats: Chemical agents are poisonous liquids, solids, vapors and aerosols that have toxic effects on people, animals or plants. Agents can be released by bombs, or sprayed from vehicles or aircraft. A chemical attack could come without warning, and the agents are usually odorless and tasteless with effects like irritation, nausea, burning sensations or difficulty breathing. While potentially lethal, chemical agents are difficult to deliver in lethal concentrations but signs of a release can have immediate effects or a delayed effect.

Nuclear blast: Is an explosion with intense light and heat, a damaging pressure wave, and widespread radioactive material that contaminates the air, water and ground for miles. A nuclear device can be transported by an individual or by an intercontinental missile launched by a terrorist group or hostile nation. Deadly effects are associated with a nuclear blast like intense heat (thermal radiation), initial nuclear radiation, fires and blinding light. The extent, nature and arrival time of these hazards are difficult to predict.

Radiological dispersion device (RDD): Also known as a “dirty bomb” is considered more likely than use of a nuclear explosive device. A RDD combines a conventional explosive device with radioactive material. It scattered dangerous and sub-lethal amounts of radioactive material over an area. RDDs do not require much technical knowledge to build or deploy, and the radioactive material are easier to obtain compared to nuclear weapons with uranium or plutonium.

Cyber-attack: Unlike physical threats, cyber threats are often difficult to identify and comprehend. Cyber-attacks can be intruders breaking into systems and altering files, using your computer to attack others, stealing confidential information, or erasing entire systems or files. Some attacks are more serious than others and can have wide-ranging effects on individuals, organizations and at the national level. Risks include disrupted services or power to transportation, data breaches with organizations or governments and an intrusion on individuals obtaining their personal information.

Homeland Security Advisory System

The U.S. Department of Homeland Security designed the Homeland Security Advisory System to provide a national framework and comprehensive means to disseminate information regarding the risk of terrorist acts to government authorities, private sector, and the American people. It provides warnings in the form of a set of graduated “threat conditions” that increase as the risk of the threat increases. Each level will provide suggested protective measures that the government, private sector and the public can take. Alerts are heard through their website, or media channels.



The Region has not experienced a major threat or attack but do see many isolated incidents of domestic terrorism like shootings and bomb threats. Area police and emergency teams regularly perform drills to be prepared in case of a terrorist attack.

Location

The Charleston Region is always at risk of being targeted for a terrorist attack due to the Charleston Port. With Charleston being a major metropolitan area, it is subjected to possible terrorist attacks. With attacks ranging from size and destruction, the whole Region could experience the effects of a terrorist attack.

Historical Occurrences

The Charleston Region has not experienced any major terrorist threats or attacks. Isolated incidents like bomb threats, suspicious packages are reported each year. In January 2008, nine out of ten public safety dispatch operations in Charleston County finalized an Intergovernmental Agreement to consolidate dispatch operations. The City of Folly Beach still maintains their own Dispatch Center but have 9-1-1 calls transferred to them.

Suspicious Packages and Bomb Threat					
From May 1, 2013 - April, 30 2017					
As reported by Charleston County Consolidated 9-1-1 Center					
Category	2013-2014	2014-2015	2015-2016	2016-2017	
Bomb Threat	21	2	5	12	
Bomb Threat (Suspected Caller)	2	0	0	1	
Ordinance/Explosive Found	8	5	8	14	
Suspicious Package	66	110	111	95	
Suspicious Package with Leakage Residue	1	1	4	2	
Total	98	118	128	124	468

Probability

There is no evidence to suggest there is any substantial risk for a terrorist event.

4.9 - Wildfire

Background

According to the South Carolina Forestry Commission, any forest fire, brush fire, grass fire, or any other outdoor fire that is not controlled and supervised is called a wildfire. These fires cause damage to the forest resource as well as wildlife habitat, water quality, and air quality. All though wildfires are considered dangerous, they are a natural process in the environment in order to clear dead vegetation. Anything that can burn is considered fire fuel, like branches, pine needles, and dead leaves. The most common cause of wildfires however is by negligent human behavior (debris burning, fireworks, arson). Another common cause of wildfires is lightning strikes but only two percent of wildfires in South Carolina are attributed to lightning, however weather is an important factor in dealing with wildfires. Wind, humidity and droughts will have an effect on the spread and flammability of wildfires. Forest fire danger is usually highest in late winter and early spring (January through mid-April). South Carolina's fire season is in the winter because most vegetation is dead or dormant during that time. Fires do not start or spread as quickly when vegetation is green. Of course, the increasing concern is the threat wildfires pose to homes and lives of people and animals. Wildfires burn 20-30 homes in the state every year, and hundreds more are threatened each fire season.

Classification

There are three classes of wildfires: surface fire, ground fire, and crown fire. A surface fire is the most common of these three classes moving slowly burns along a forest floor. A ground fire (muck fire) is usually started by lightning or human carelessness and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees.

The northeast part of Charleston County holds the Francis Marion National Forest, a large expanse of land that is home to many native plants and animals. The most significant fire to occur

in our Region happened within the Francis Marion National Forest in March of 2011 when 2,600 acres along the Charleston/Georgetown County line burned. The fire also burned two buildings, and residents within a six-mile area were voluntarily evacuated.

Location

Wildfire is a potentially serious threat in the Charleston Region, particularly in areas with a high density of vegetation and areas within or surrounding the Francis Marion National Forest. Areas where there is an urban-wild land interface like (St. John’s Fire District) are also at risk. Even urban areas within the Region pose the threat of wildfires, since they are defined as uncontrolled fires, which most fires are. For the purpose of this plan, all areas, buildings and facilities are considered to be equally exposed.

Historical Occurrences

The table below shows the amount of fires and acres burned each fiscal year from 2013 to 2017.

Wildfire Events from 2013-2017					
Year	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Fires	19	15	9	6	*
Acres	656.6	37.5	349.9	134.8	*
<i>Source: South Carolina Forestry Commission</i>					
<i>*Statistic is not available for 2016-2017. Will be updated when posted by SC Forestry Commission.</i>					

Below is a table summarizing fire incidents from 2012-2017 recorded by the Consolidated 9-1-1 system.

Fire Incidents from May 1, 2013 - April 30, 2017					
As Reported by Charleston County Consolidated 9-1-1					
Category	2013-2014	2014-2015	2015-2016	2016-2017	
Outside Fires	893	542	632	999	
Trail/Rail Fires	3	1	2	1	
Marine Fires	13	5	11	11	
Vehicle Fire	102	90	111	111	
Total	1011	638	756	1122	3527

Probability

The most significant fire in the last decade was located in March of 2011 along the Charleston/Georgetown County line with most of the burned area located within Georgetown County. However, wildfire can affect the whole Region and force evacuation of people. Since only around half of the county has protected acreage of rural land which can be affected by wildfire, there are other events like vehicle fires, house fires and marine fires that can happen anywhere within the Region. Acreages burned between the years of 1946–2017 have varied. It is unpredictable how much land will be damaged per year or where a fire will occur.

In any given year, it is expected that there will be between 32 and 114 wildfires per year, and between 691 and 992 acres burned according to the 5 year and 50 year averages.

Wildfire Averages for Charleston County								
Averages	5 Year	10 Year	15 Year	20 Year	25 Year	30 Year	40 Year	50 Year
Fires	32	38	63	72	87	97	121	114
Acres	691.1	483.7	618.3	662.3	735.2	916.5	1,036.6	991.9

Source: South Carolina Forestry Commission

4.10 - Tsunamis

Background

Tsunami is a Japanese word for “harbor wave”. Tsunamis are a series of waves caused from vertical faulting beneath the sea, underwater landslides, meteorite impacts, or volcanic explosions above or below water. From where the waves originate, they move outward in all directions. The waves can travel up to speeds of 500 miles per hour in deep water to 30 miles per hour in shallow water. At its origin in the deep ocean, the wave may only be a few inches, but as it approaches shore, it builds in height. As they slow in shallower water, it causes them to effectively pile up and wave heights dramatically increase up to several meters high. As opposed to typical waves which crash at the shoreline, tsunamis bring with them a continuously flowing ‘wall of water’ with the potential to cause devastating damage in coastal areas located immediately along the shore. Tsunamis are generally considered a significant hazard threat primarily for land areas near the Pacific Ocean, and are considered a rare phenomenon in the Atlantic Ocean.

Classification

The National Oceanic and Atmospheric Administration (NOAA) is the primary agency for providing tsunami warnings, with roles in research and observations as well. They create maps that help identify areas of likely tsunami flooding for at-risk communities. Forecast models and Inundation models are provided to the NOAA’s Weather Service forecasters to provide information to emergency managers, planners, and states. The DART system (Deep-ocean Assessment and Reporting of Tsunamis) is a real-time tsunami monitoring system positioned at strategic locations throughout the ocean for forecasting purposes. Most tsunamis are measured by height of the wave. These monitoring devices detect irregularities in the ocean and can determine the height of the wave once it hits shore and how much time it will take to reach shore. Damage ranges from the height of the wave when hitting shore, and debris carried from them onto shore create the most damage and drowning being the leader in deaths.

There are reports of 1 event in 1886, though information on damage or extent is extremely limited. The tsunami is likely tied to the record earthquake that occurred on August 31st, 1886. The USGS and Department of the Interior rated the entire Eastern coastline as having a “Very low to low” probability of a tsunami event in a 500-year timeframe. Preparedness measures are similar to a

hurricane. Charleston has a tsunami-warning buoy 425 miles off the coast and was designated as a "Tsunami Ready Community" in 2006.

Location

A tsunami poses the threat on all coastal communities even though tsunamis are generally considered a significant hazard threat primarily for land areas near the Pacific Ocean, and are considered a rare phenomenon in the Atlantic Ocean. Historical evidence does indicate that tsunamis have affected the Eastern United States but are not the result of traditional sources of tsunami waves (i.e., subduction zones such as the Cascadia Subduction Zone in the Pacific Ocean). They are typically the result of slumping or land sliding associated with local earthquakes or with wave action associated with strong storms such as hurricanes. Other possible causes of tsunami-like activity along the East Coast could include explosive decompression of underwater methane deposits, the impact of a heavenly body (i.e., an asteroid, comet or oceanic meteor splashdown), or a large underwater explosion. The Charleston County area is not an "at-risk" area for a significant type of Atlantic Ocean tsunamis. Consequently, the Charleston County area would not generally be expected to experience a tsunami but as with any coastal community along the Atlantic Ocean, there is still an extremely remote chance of events happening that can cause a tsunami.

Historical Occurrences

With the report of 1 event with limited information on damage and extent, which was likely tied to the record earthquake that occurred on August 31st, 1886, the Charleston Region has not experienced any tsunami events since. Through the National Climatic Data Center from National Oceanic and Atmospheric Administration (NOAA), the database shows zero events from the years 2008 through April 30th, 2017.

Probability

There is no evidence to suggest there is any substantial risk for a tsunami event.

4.11 - Dam Failure

Background

Dam failure is the collapse, breach, or any incident that compromises a dam structure resulting in downstream flooding. The energy of the water stored behind a dam is capable of causing loss of life and severe property damage downstream of the dam. Dam failure can be the result of human-induced or natural events. Design error, poor maintenance and terrorism acts are examples of human-induced events, while earthquake, prolonged rainfall (flooding) and erosion are natural events that can cause structural damage to dams resulting in failure.

Classification

A series of dam failures in the 1970s resulted in a national focus on inspecting and regulating dams. States are primarily responsible for protecting their populations from dam failure. State governments regulate about 90 percent of the approximately 84,000 dams in the United States. The federal government only owns or regulates only 5% of the dams in the United States. About 27,000 dams throughout our Nation could incur damage or fail, resulting in significant property damage, lifeline disruption (utilities), business disruption, displacement of families from their homes, and environmental damage.

The federal government has used the National Dam Safety Program (NDSP) to protect Americans from dam failure for over 30 years. The NDSP is a partnership of the states, federal agencies and other stakeholders that encourages individual and community responsibility for dam safety, which includes information, training, grant assistance and research. There are also many partners of the NDSP like the Interagency Committee on Dam Safety, National Dam Safety Review Board, and the Association of State Dam Safety Officials (ASDSO), which is a non-profit organization that supports dam safety programs and communities.

Since states are primarily responsible for their dams, South Carolina passed the S.C. Dams and Reservoirs Safety Act in 1977. The act protects citizen’s health, safety, and welfare by creating a regulatory program to reduce the risk of failure of dams. The law confers upon the Department of Health and Environmental Control as the regulatory authority to accomplish the purposes of the act. The act also provides a classification for potential hazards that pertain to potential loss of human life or property damage in the event of failure or improper operation of the dam or appurtenant works.

Dam Failure Hazard Potential Classification	
Classification	Hazard Potential
High Hazard (Class I)	Dams located where failure will likely cause loss of life or serious damage to homes, industrial and commercial facilities, important public utilities, main highway(s) or railroads.
Significant Hazard (Class II)	Dams located where failure will not likely cause loss of life but may damage homes, industrial and commercial facilities, secondary highway(s) or railroads or cause interruption of use or service of relatively important public utilities.
Low Hazard (Class III)	Dams located where failure may cause minimal property damage to others. Loss of life is not expected.

Source: South Carolina Department of Health & Environmental Control

Two dams could impact areas of the Charleston County. The Pinopolis Dam could temporarily flood parts of North Charleston with up to 15.4 feet of water. The Santee Dam could temporarily

flood McClellanville with up to 22.7 feet of water. To this date, there has not been any major historical event.

Location

Dam failures are extremely rare events. Santee Cooper, a state-owned utility, operates both the Santee Dam and the Pinopolis Dam System, a failure of which could affect areas within Charleston County. A catastrophic failure at either of these dams would create flooding within the Charleston County area, and would be a significant event. The most likely root cause of such a failure would be an earthquake of a larger magnitude than 7.6 on the Richter scale or perhaps an act of terrorism. While dam failure is unlikely, it is possible that the Charleston County area could experience dam-related flooding.

Historical Occurrences

There have been no recorded historical incidents regarding the Santee Cooper Dam and Pinopolis Dam, which are the only two dams that would impact the Charleston Region during a failure.

Probability

There is no evidence to suggest there is any substantial risk for a dam failure.

4.12 - Rip Currents

Background

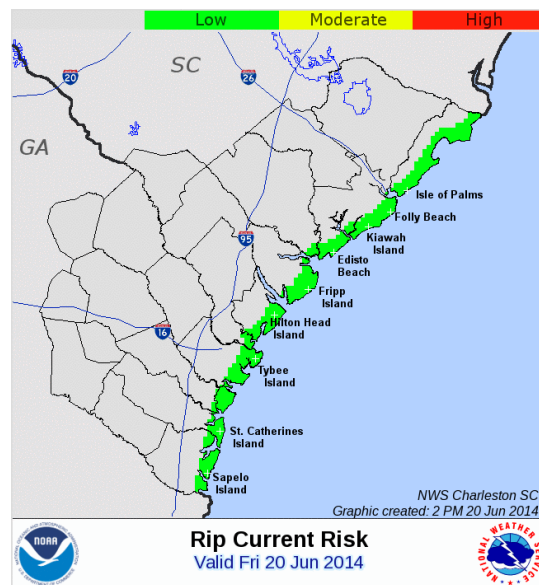
Rip currents are powerful channels of water flowing quickly away from shore. As waves travel from deep to shallow water, they break close to the shoreline. As they break, they generate currents that flow in both alongshore and offshore directions. Currents flowing away from the coast are called rip currents. A rip current forms this narrow, fast moving section of water. They can also form when a current traveling along the shoreline encounters a structure and is forced offshore. Rip currents typically form at breaks in sandbars, or at low spots. According to the United States Lifesaving Association, 80% of surf beach rescues are attributed to rip currents, and more than 100 people die annually from drowning in rip currents.

Classification

The National Weather Service Family of Services (FOS), the National Oceanic and Atmospheric Administration (NOAA), Weather Wire Service and the Emergency Manager's Weather Information Network (EMWIN) created The Surf Zone Forecast in the Summer of 2003. The Surf Zone forecast is issued from the National Weather Service's Forecast Offices every day. It provides valuable information on the hazards of the surf zone to communities. It describes the precipitation, visibility, wind speed, wind direction, wave height, surf temperature, tide information, rip currents, and more. The Rip Current Outlook portion of the Surf Zone Forecast provides the public with standard terminology for describing the rip current hazard. That terminology is categorized into three sections: Low Risk, Moderate Risk and High Risk.

Rip Current Outlook for the Surf Zone Forecast	
Risk	Description
Low	Wind and/or wave conditions are not expected to support the development of rip currents. However, rip currents can still occur, especially at low spots or breaks in the sandbar and in the vicinity of structures such as groins, jetties and piers. Know how to swim and heed the advice of lifeguards and the beach patrol. Pay attention to flags and posted signs.
Moderate	Wind and/or wave conditions support stronger or more frequent rip currents. Only experienced surf swimmers that know how to escape a rip current should enter the water. Pay attention to flags and posted signs.
High	Wind and/or wave conditions support dangerous rip currents. No one should enter the surf due to this life threatening hazard. Pay attention to flags and posted signs.

Source: National Oceanic and Atmospheric Administration



An example of the Surf Zone Forecast that is issued every day.

In the United States, it is estimated that 100 people will lose their life due to rip currents each year. Extensive signage and education efforts continue to educate beachgoers, though future deaths are possible and unfortunately likely as rip currents occur regularly. In 2014, one person drowned in a rip current in the Charleston Region.

Location

The Charleston Region stretches nearly 100 miles along the Atlantic Ocean. The Region’s beaches are prone to rip currents daily leaving citizens who enjoy the beaches vulnerable to this threat. This type of hazard does not cost damage to buildings or infrastructure but it continues to take

lives of residents and visitors on an annual basis. Since majority of people in the Region will experience being around the water at some point, the whole Region can be affected.

Historical Occurrences

According to the National Oceanic and Atmospheric Administration (NOAA) and the National Climatic Data Center (NCDC), rip currents will be listed in Storm Data only when they cause a drowning(s), near-drowning(s), result in numerous rescues (i.e., 5 or more at one beach community), or damage watercraft. Events associated with other surf-related currents, such as long-shore or tidal currents, will not be included in Storm Data as Rip Current events. Rip currents can occur any time and any place along beaches or in other bodies of water.

Rip Current Events from May 1, 2013 - April 30, 2017			
Date	Location	Deaths/Injuries	Details
5/27/2013	Charleston Zone	0	Strong offshore winds created a strong rip current. Four rescues were made.
6/30/2013	Charleston Zone	1 death, no injuries	Thunderstorms created a strong rip current. One person drowned while trying to rescue another.
7/13/2013	Charleston Zone	2 injuries	A waterspout caused a strong rip current that sent two people to the hospital for water inhalation.
5/7/2014	Charleston Zone	1 death, no injuries	Three rip currents caused by strong wind and increased swell energy, resulted in one death.
5/8/2014	Charleston Zone	0	Strong wind and increased swell activity caused several rip currents. Five rescues were made.
5/10/2014	Charleston Zone	0	Strong wind and increased swell activity caused several rip currents. Ten rescues were made.
5/1/2015	Charleston Zone	1 death, no injuries	Rip currents developed in the afternoon at several beaches within the onshore flow. A 23-year-old male drowned between Stations 23 and 24 on Sullivan's Island due to a rip current.
6/7/2016	Isle of Palms	0	There were 3 rescues made this day, all at Isle of Palms.
6/19/2016	City of Folly Beach	0	No injuries or deaths reported. Rip current event occurred at 1 o'clock in the afternoon.
6/20/2016	Isle of Palms	1	This rip current occurred at 9:15 AM resulting in an injury.
6/26/2016	Isle of Palms	0	One rescue was made in this riptide event due to high winds.
Total	7 Rip Current Events with 3 Deaths and 2 Reported Injuries		

There have been no recorded events since 2016.

Source: National Climatic Data Center

Probability

Since the Charleston Region is located along the coast, the ocean presents a strong threat to the communities close and away from it. With the beach being a popular location for many in the Region, we can claim that the whole Region is exposed to the threat of a rip current during a beach visit. Rip currents occur every day posing a low to high-risk threat. There is a 100% chance that a rip current could occur every day leaving a 100% chance someone could experience this hazard.

4.13 - Severe Storm

Background

Severe thunderstorms, windstorms, and hail can occur any day throughout the year. According to the National Weather Service, there are approximately 100,000 thunderstorms that occur in the United States per year and about 25 million lightning flashes a year. The rapid upward movement of warm, moist air causes severe thunderstorms. As the warm moist air moves upward, it cools, condenses, and forms cumulonimbus clouds. Cumulonimbus clouds can move in lines, in clusters, or singularly, and they can move through an area very quickly or linger for hours. These types of clouds, which produce thunderstorms, also produce lightning, which is a serious threat during a thunderstorm. Along with lightning, thunderstorms can produce other accompanying hazards like windstorms and hailstorms.

Classification

Thunderstorms: Thunderstorms are usually classified as severe when at least wind speeds exceed 58 miles per hour or when hail exceeds 0.75 inch in diameter. Nearly 10% of yearly thunderstorm events are classified as severe. Thunderstorms form and clump together in a variety of different ways; Single cell, Multi-cell clusters, Multi-cell lines, and Super cells. The term “cell” refers to each separate principal updraft. The more updrafts, the more severe the thunderstorm can be.

Windstorms: Severe thunderstorms have the ability to produce strong winds, typically resulting to be categorized as a windstorm. These high winds can cause downed trees, power lines, flying debris, and damage infrastructures. Wind speeds during a windstorm typically exceed 34 miles per hour, which can be attributed to gusts, either short bursts or long periods of sustained winds. Flying debris is the primary cause of damage during high winds.

Lightning: Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges in cumulonimbus clouds that produce thunderstorms. When the charges are strong enough, it creates a “bolt” of electricity that travels between the cloud and the ground or within the clouds. Lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Thunder is heard from the rapid heating and cooling of the surrounding air following the bolt of lightning. On average, less than 100 people die every year by lightning.

Hailstorms: Hail is produced when ice crystals form due to the rapid rising of warm air into the upper atmosphere and the subsequent cooling of the air mass. Updrafts carry raindrops into parts of the atmosphere where the temperatures are below freezing. These raindrops gradually accumulate onto the ice crystal, and when they develop sufficient weight, they fall as precipitation, usually in the shape of irregularly shaped masses or in the shape of a ball, and greater than 0.75 inches in diameter. The Tornado and Storm Research Organization (TORRO) in England is a privately supported research body, serving the national and international public interest. The Tornado and Storm Research Organization (TORRO) produced a Hailstorm Intensity Scale, which puts different hail sizes into categories with damage descriptions.

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

Source: The Tornado and Storm Research Organization

Hail Size Comparison			
Size Code	Size (mm)	Size (inches)	Object
H0	5 - 9	0.25	Pea
H1	10 - 15	0.5	Mothball
H2	16 - 20	0.75 (Classifies storm as severe)	Marble, Grape
H3	21 - 30	1	Walnut
H4	31 - 40	1.5	Squash ball
H5	41 - 50	1.75	Golf ball
H6	51 - 60	2	Hen's egg
H7	61 - 75	2.5	Tennis ball
H8	76 - 90	3	Orange
H9	91 - 100	3.75	Grapefruit
H10	>100	4	Melon

Source: The Tornado and Storm Research Organization

The Charleston Region typically experiences hail events between size codes H0 to H2.

Location

A thunderstorm event is an atmospheric hazard, and has no geographic boundaries. They can occur in all regions of the United States however, thunderstorms are most common in the central and southern states because atmospheric conditions are more favorable for generating thunderstorms. Since thunderstorms are unpredictable, all jurisdictions are equally exposed to these hazards.

Historical Occurrences

Severe Storm Events between May 1, 2013 – April 30, 2017						
Year	Thunderstorm Wind Events	Hail Events	Lightning Strikes	Over Total # of Days	Total Damage (in thousands)	Total Deaths/Injuries
2013-2014	17	6	2	13	\$139,250	0
2014-2015	9	5	1	10	\$27,000	0
2015-2016	63	5	0	10	\$0	0
2016-2017	34	2	22	13	\$10,000	0
Total	123	18	25	46	\$176,250	0

Source: National Climate Data Center

Probability

Since thunderstorms are unpredictable and can occur any day of the year, all jurisdictions are equally exposed to these hazards, and there is a 100% chance that the area will be hit by severe weather in any given year. The likelihood of Hail events depends on the severity of the storm. There have been 16 hail events over the past four years, averaging four hail events per year.

4.14 -Drought

Background

Drought and heat advisories do not damage buildings and roads, drainage channels and other similar types of infrastructure; however, drought does cause potential loss of agricultural production and increases the possibility of wildfires. Droughts are the consequence of a natural reduction for precipitation expected over an extended period. High temperatures, high winds, and low humidity can exacerbate drought conditions. In addition, human actions and demands for water can hasten drought-related impacts. Since droughts can be a natural and human component, it is defined in both conceptual and operational terms. Droughts are generally defined in these four terms; meteorological, agricultural, hydrological, or socioeconomic.

Meteorological: Based on the degree of dryness or actual precipitation from an expected average of time. They have a slow-onset that usually takes at least three months to develop and may last for several seasons or years.

Agricultural: Based on the impact to agricultural activity from a deficit in precipitation, soil moisture, ground water supply, or reservoir levels.

Hydrological: Based from a precipitation deficit that affects the surface and subsurface water supply (stream flow, lake levels, and ground water). Other facts such as changes in land use, land degradation, and construction of dams can contribute to hydrological droughts.

Socioeconomic: Based on the adverse supply and demand relationship between economic goods that are dependent on precipitation and water supply. Occurs when water shortage beings to affect the population, individually and collectively.

Classification

In the United States, the U.S. Drought Monitor is a weekly map product produced through the partnership of the National Drought Mitigation Center, US Department of Agriculture (USDA), and the National Oceanic and Atmospheric Administration (NOAA). Drought Monitor maps measure present drought levels and outlooks through a synthesis of multiple drought indices. Meteorologists predict and monitor droughts using drought indices, as well as monitoring variables that reflect precipitation patterns, stream flow, and soil moisture. The U.S. Drought Monitor is a composite index that includes many indicators but its primary purpose measures drought intensity using a scale of D0 through D4. D0 being abnormally dry, D1-moderate, D2-severe, D3-extreme, D4-exceptional.

U.S. Drought Monitor - Drought Severity Classification		
Category	Description	Possible Impacts
D0	Abnormally Dry	<u>Going into drought:</u> short-term dryness slowing planting and growth of crops or pastures. <u>Coming out of drought:</u> some lingering water deficits; pastures or crops not fully recovered.
D1	Moderate Drought	Some damage to crops and pastures; streams, reservoirs, or wells low; some water shortages developing or imminent; voluntary water-use restrictions requested.
D2	Severe Drought	Crop or pasture losses likely; water shortages common; water restrictions imposed.
D3	Extreme Drought	Major crop/pasture losses; widespread water shortages or restrictions.
D4	Exceptional Drought	Exceptional and widespread crop and pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies.

S=Short-Term, typically less than 6 months. L=Long-Term, typically more than 6 months.
Source: National Drought Mitigation Center

The Palmer Drought Severity Index Scale was developed in the 1960's and uses temperatures and rainfall information in a formula to determine dryness, incorporates soil moisture, and is considered most effective for non-irrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief.

Palmer Drought Severity Index Classifications	
Category	Description
4.0 or more	Extremely Moist
3.0 to 3.9	Very Moist
2.0 to 2.9	Moderately Moist
1.9 to -1.9	Near Normal
-2.0 to -2.9	Moderate Drought
-3.0 to -3.9	Severe Drought
-4.0 or less	Extreme Drought

Source: National Oceanic & Atmospheric Administration

Location

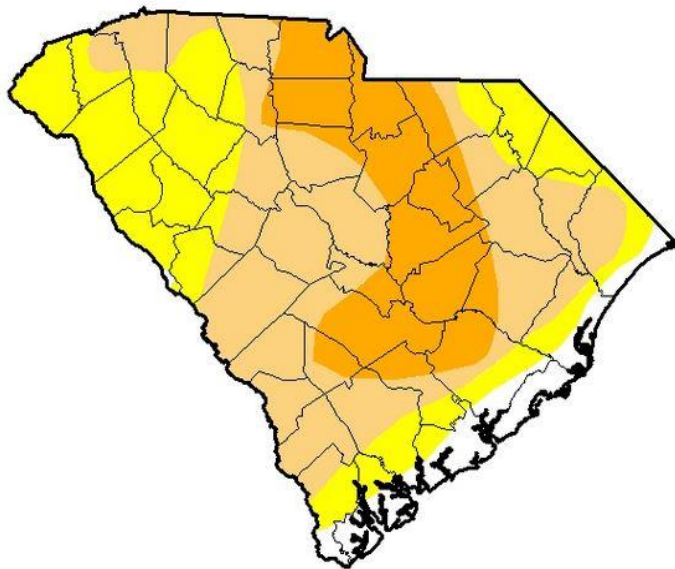
Droughts typically cover a large area and cannot be confined to any geographic boundary. For this purpose, the whole Charleston Region is vulnerable to the threat of a drought.

U.S. Drought Monitor South Carolina

August 4, 2015

(Released Thursday, Aug. 6, 2015)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	7.16	29.25	40.12	23.48	0.00	0.00
Last Week 7/28/2015	14.26	38.21	47.50	0.03	0.00	0.00
3 Months Ago 5/5/2015	99.71	0.29	0.00	0.00	0.00	0.00
Start of Calendar Year 12/31/2014	96.63	3.37	0.00	0.00	0.00	0.00
Start of Water Year 9/30/2014	47.90	52.10	0.00	0.00	0.00	0.00
One Year Ago 8/5/2014	84.88	15.12	0.00	0.00	0.00	0.00

Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Mark Svoboda

National Drought Mitigation Center

(An example of the extent of drought that the State experienced in early August 2015)

Historical Occurrences

Number of weeks of Drought Events between May 1, 2013 – April 30, 2017							
Year	Category						Description
	None	D0 Abnormally Dry	D1 Moderate Drought	D2 Severe Drought	D3 Extreme Drought	D4 Exceptional Drought	
2013-2014	42	10	0	0	0	0	The Region experienced only 10 weeks in drought stage. 42 weeks of no drought stage were reported and 10 weeks of D0 drought from October to December.
2014-2015	40	12	0	0	0	0	The Region experienced only 12 weeks of D0 drought. During weeks when drought was experienced, only approximately 10-20 percent of the county was affected. 40 weeks of the year, the Region experienced no drought.
2015-2016	36	16	0	0	0	0	The Region experienced 16 weeks of D0 drought. During weeks when drought was experienced, only approximately 10-20 percent of the county was affected. 36 weeks of the year, the Region experienced no drought.
2016-2017	38	14	0	0	0	0	The Region experienced 14 weeks of drought stage. During these 14 weeks, the drought stage remained at D0. 38 weeks of the year, the Region experienced no drought.

Source: U.S. Drought Monitor

According to the U.S. Drought Monitor, the Charleston Region was in the D4 (Exceptional Drought) category for a number of weeks in early 2012 with a Palmer Drought Index of at least -5.0 (Extreme Drought). It is possible for severe and exceptional drought periods to return to the Charleston Region.

Probability

Since droughts typically cover a large area and are not confined to any geographic boundary, the chance that the Region will experience some stage of drought is 100%. Over the past six years, the Region has experienced D2 (Severe Drought), D3 (Extreme Drought), and D4 (Exceptional Drought) only 45 weeks. The probability of the Region being in a severe or worst drought is 14%.

4.15 – Winter Weather

Background

Winter weather is generally rare in the Charleston Region; however, there have been a few instances of winter weather in the area. A winter storm can range from just a moderate snow over a certain amount of time to blizzard conditions with blinding wind-driven snow. They are often thought of as a snowstorm but winter storms usually have other types of weather associated with it that can be extremely dangerous. Winter storms can be accompanied by dangerous conditions with freezing rain, heavy winds, snow and sleet. A winter storm develops from three basic elements; cold air, moisture and lift. Freezing temperatures near the ground and in the clouds are necessary for snow and ice. Moisture is needed to form clouds and precipitation. Lift is needed to raise the moist air to form clouds and precipitation, which is when warm air collides with cold air and is forced to rise over the cold air. Winter conditions can be significant enough to affect several states or just affect localized areas only. All winter weather conditions have the potential to be very dangerous to the affected area. Snowfall can reduce visibility in driving

conditions, and freezing conditions can damage infrastructure throughout the area. These storms are not necessarily restricted to the winter season; they may occur in early spring or late autumn.

Classification

There is no general accepted classification of winter weather or winter storms but they generally include snow, ice, freezing rain, and freezing temperatures. The following are a few that the Charleston Region can be affected because of winter weather or winter storms.

Ice Storms/Freezing Rain: An ice storm is when freezing rain accumulates to at least ¼ inch of ice on exposed surfaces. Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Freezing rain occurs when rain falls onto surfaces with temperatures below freezing, thus turning the rain to ice on contact. They can be perceived as rainstorms occurring just below freezing temperatures. Freezing rain can create black ice on roads, which is difficult for drivers to see and may cause an accident. Ice and freezing rain can lead to frozen water lines and other infrastructures.

Snow: Snowfall can immobilize a region and paralyze a city, stopping the flow of supplies, and disrupting emergency and medical services. The cost of snow removal, repairing damages, and loss of business can have large economic impacts on cities and towns. Regions not prone to annual winter weather may lack the resources to safely remove snow or ice.

Freezing temperatures: Any impact from winter weather requires temperatures below 32°. Prolonged exposure to cold temperatures can cause hypothermia or frostbite and become life threatening. Freezing temperatures can cause severe damage to crops or other vegetation in the Region. It could also freeze pipes in homes that are poorly insulated or have exposed pipes.

The Charleston Region experienced an extremely rare snowfall in 2010 with isolated areas reporting up to 8 inches of snow and ice. Trees were down due to the ice and snow. Most winter hazards that the Region experiences are freezing pipes/temperatures, vegetation damage, and ice, but the Region is still vulnerable to larger winter weather events.

Location

While the Region does not regularly encounter extreme winter storms, some aspects of winter weather occur in the Region annually. With the random nature of this hazard, all jurisdictions are subject to winter weather conditions.

Historical Occurrences

Winter Weather Events between May 1, 2013 - April 30, 2016			
Date	Type	Area	Damage
1/28/2014	Ice Storm	Charleston Zone	10K
2/12/2014	Ice Storm	Charleston Zone	0
Total	2 Winter Weather Events		10K

Source: National Climatic Data Center

There were no new winter weather events from May 1, 2016 to April 30, 2017.

Probability

The Region has experienced only 5 winter events between the years of 2008 and 2015. The Region is located in a subtropical climate zone but will still experience low temperatures in the winter season every year. The probability of extreme winter weather events affecting the Region is approximately 30% per year.

Table 4.1 – Summary of Jurisdiction Affected

Jurisdictions Affected by Hazard Type		
Hazard	Jurisdictions Affected	Comments
Hurricane	Countywide	Hurricanes and Tropical Storms threaten the entire Atlantic Coast. Landing patterns are unpredictable until the storm has formed and is within a short time from landing.
Flood	Countywide (Emphasis on Specific Jurisdictions)	Around 68% of the Charleston Region is in a floodplain. Some jurisdictions aren't located in that floodplain but are still considered at risk for the aftermaths of a flooding event.
Sea Level Rise	Countywide (Emphasis on Specific Jurisdictions)	Land in the most susceptible flood zones (AE and VE) will be most affected as sea level continues to rise. Areas of the most susceptibility include Folly Beach and Morris Island, Sullivan's Island, James Island, Seabrook Island and Edisto Island, Isle of Palms and Caper's Island, Awendaw's coastline, and Murphy Island.
Earthquake	Countywide	Charleston lies in one of the most seismically active areas in the Eastern United States, so the whole county is at risk of the aftermaths of an Earthquake.
Tornado	Countywide	Tornados aren't limited to any specific geographic region. The landing of tornados is unpredictable so all areas in the region are at risk.
Hazardous Materials	Countywide (Emphasis on Specific Jurisdictions)	The Charleston Region is a rapidly growing international port, areas around the port and Air Force base are at a higher risk but hazardous materials are located in most homes and incidents can occur anywhere.
Terrorism	Countywide (Emphasis on Specific Jurisdictions)	The urban areas of the region are more at risk for terrorism threats but the whole region is still at risk depending on size and destruction of an attack.
Wildfire	Countywide (Emphasis on Specific Jurisdictions)	Jurisdictions close to the Francis Marion National Forest or any other protected acreage are more likely to experience a wildfire. However, uncontrollable fires can occur in urban cities, so all areas are considered at risk.
Tsunamis	Countywide (Emphasis on Specific Jurisdictions)	Tsunamis could only affect jurisdictions located along the coast, however depending on size and destruction, the whole region could experience the aftermaths of a tsunami event.
Dam Failure	Countywide (Emphasis on Specific Jurisdictions)	Dam failure are extremely rare events and would the flooding could only affect certain jurisdictions, however after a catastrophic failure, the whole region would be affected either physically or economically.
Rip Currents	Countywide (Emphasis on Specific Jurisdictions)	Rip currents only occur near jurisdictions located on the coast, but the whole region has access to the ocean and anyone could be caught in a rip current.
Severe Storms	Countywide	Thunderstorms or severe storms have no geographic boundaries so all areas are at risk.
Drought	Countywide	Droughts can cover large areas and aren't confined to any geographic boundary so the whole region is at risk.
Winter Weather	Countywide	Extreme winter weather conditions are rare for the region, but low temperatures are common in the Winter. With the random nature of winter weather events, all areas are at risk.

Table 4.2 – Summary of Hazard Extent

Summary of Hazard Extent			
Hazard Type	Extent (based on historical events)		Comments
	Minimum	Maximum	
Hurricane/ Tropical Storm/ Coastal Storm/ Coastal Erosion	Tropical Depression	Category 4	On September 21st, 1989, Charleston was hit by Hurricane Hugo. Hugo made landfall as a Category 4 hurricane. On October 7, 2016, Charleston was hit by Hurricane Matthew. Previously a Category 5, Matthew had downgraded to a Category 1 before making landfall in Charleston. The hurricane still left considerable damage; 830,000 South Carolinians lost power and 355,000 evacuated their homes. Tropical Storms have passed by Charleston County and caused considerable erosion problems and minor related damage.
Flooding	0 ft.	19.3 ft.	Following Hurricane Hugo, storm surge flooding reached 19.3 feet. Non-hurricane related flooding events occur each year with great variation in intensity. This report includes isolated storm water flooding events and riverine flooding that reached various levels, but such flooding is completely dependent upon the area.
Sea Level Rise	N/A	N/A	King tides, which is the above average high tide occurring when once a lunar cycle, are a good predictor of sea level rise. On average there were 10.4 observed king tides for every king tide event, compared to the predicted 4.9 king tides. The depth averaged more than half a foot deeper than expected. There were 44 more king tides than predicted in 2016 and a cumulative 4.7 feet higher.
Earthquake	0 M	7.3M	In 1886, an earthquake with an estimated magnitude of 7.3M occurred in Summerville, SC outside of Charleston. This was the largest known earthquake on the east coast. This type of event is extremely rare and expected to occur only every 500 years.
Tornado	EF0	EF2	The strongest tornado in the Charleston region since the first Hazard Mitigation Report in 1999 was an EF2 Tornado with maximum winds reaching 120mph that touched down near Wadmalaw Island in 2008. It is possible for a stronger tornado to impact the area, though the majority of tornado reports are unconfirmed or are confirmed EFO.
Hazardous Materials	N/A	N/A	Category includes natural gas leaks, small automobile accident cleanups, chemical spills, and more. No common measure exists. No serious injuries have been reported due to a hazardous materials incident since this Hazard Mitigation Report has been produced.
Terrorism	N/A	N/A	Due to the Charleston Port, the terrorism threat to the area may be increased. Isolated incidents of domestic terrorism are always possible, though area police and emergency teams regularly perform drills for shootings, bomb threats, and full scale terrorism events.
Wildfire	0 acres	2,600 + acres	Numerous small fires (fractions of an acre) are reported annually and countless are unreported. The most significant fire in the last decade was located in March of 2011 along the Charleston/Georgetown County line which burned nearly 2,600 acres within the Francis Marion National Forrest.

Tsunamis	1 event in 1886	1 event in 1886	There are reports of 1 event in 1886, though information on damage or extent is extremely limited. The tsunami is likely tied to a record earthquake. Due to the vast amount of coastland, a tsunami is a possibility, though extremely remote. The entire Eastern coastline was rated as having a "Very low to low" probability of a tsunami event in a 500 year timeframe by the USGS and Department of the Interior. Preparedness measures are similar to a hurricane. Charleston has a tsunami warning buoy 425 miles off the coast and was designated as a "Tsunami Ready Community" in 2006.
Dam Failure	0 ft.	22.7 ft.	The Santee Dam and Pinopolis Dam could both impact areas of Charleston County. The larger Santee Dam is far enough away from homes to give nearly four hours of notice should a breach occur and regular testing of warning sirens and messages occur. The smaller Pinopolis Dam could temporarily flood parts of North Charleston with up to 15.4 feet of water. The Santee Dam could temporarily flood McClellanville with up to 22.7 feet of water.
Severe Storms/Wind Storms/Hail/Other	H0	H8	The Charleston County region has experienced baseball size hail (2.75in / 70mm) in 2011. This H8 rating estimates severe damage to windows, some tree limbs, small animals, and automobiles. More common to the area are H0-H2 hail (0mm-20mm), which causes damage mainly to crops and vegetation.
Drought/Heat Advisory/Climate Change	Palmers 0 / D0	Palmers -5 / D4	The Charleston County region saw a drought period in 2012 that reached to the D4 stage (Exceptional Drought) with a Palmers Drought index of at least -5.0. for 3 weeks. According to the Drought Monitor, the Charleston Region is regularly in a moderate drought (D1) or listed as abnormally dry (D0). This responds to a Palmers Drought index between 0-2.9.
Winter Weather	0 inches	8 inches	An extremely rare snowfall occurred in 2010 with isolated areas reporting up to 8inches of snow and ice. Many trees were downed by the snow and ice. Most winter hazards are associated with vegetation damage, freezing pipes, and occasional icing of roads.

Table 4.3 – Summary of Hazard Probability

Future Probability Summary for Each Hazard			
Hazard Type	Previous Incidents		Future Probability / Frequency
	Historical Range	Recorded in 2008-2013	
Hurricane/ Tropical Storm/ Coastal Storm/ Coastal Erosion	31 total events since August 11th, 1940.	According to the National Climatic Data Center, there have been 5 Tropical Storms that affected the area.	In any given year, there is a 42% chance Charleston County will be impacted by a Hurricane/Tropical Storm/Coastal Erosion Event. Hurricane Hugo is known to be the Region's 100 year storm. A 100 year storm has a 1% probability of occurring at that location in any given year.
Flooding	Minor and isolated flooding events regularly occur. It is estimated a major hurricane landfall near Charleston County is needed for a regional, widespread flooding event. Hurricane Hugo has been the only major flooding event in history.	According to the National Climatic Data Center, there have been 34 regular minor and isolated flooding events. There have been zero major, widespread flooding events.	Hurricane Hugo was a massive regional flooding event (up to 19.3ft). This type of flooding is considered a 100 year flood, which is a 1% probability of occurring. It is expected small, isolated flooding events will 100% occur each year but given the 34 events between 2008 - 2013, there is a 68% chance per year of a flooding event.
Sea Level Rise	Sea level rise has been accelerating in the last decade.	On average there were 10.4 observed king tides for every king tide event, compared to the predicted 4.9 king tides. The depth averaged more than a half a foot deeper than expected.	There were 44 more king tides than predicted in 2016 and a cumulative 4.7 feet higher. These values are expected to increase in 2017 and onward.
Earthquake	1 major earthquake in 1886 with minor tremors several times per year, on average, in the north area of the county or in Summerville. (Berkley County)	According to the South Carolina Department of Natural Resources, there have been 14 tremors in the past 5 years. The average magnitude for these tremors has been 2.31.	In any given year, it's estimated that there will be about 2.8 small earthquakes per year (14 earthquakes in the previous 5 years), all likely to be located in the Summerville area. The earthquake of 1886 was estimated to be a 1 in 500 year event, meaning there is an estimated 0.2% chance of a comparable earthquake happening.
Tornado	16 tornadoes from 1996 through 2012. This equates to one tornado every year on average.	The National Climatic Data Center has 3 confirmed tornadoes in the region over the past 5 years.	In any given year, it's estimated there is a 100% chance of a tornado occurring. Based off historic standards, there is roughly a 94% chance a tornado would be a EF1 or below. (15 of 16 tornadoes have been EF1 or below).
Hazardous Materials	No major hazardous materials incidents or related injuries.	No major hazardous materials incidents or related injuries.	No major incidents or related injuries are expected. 100% chance of small isolated hazardous material incidents to occur each year.
Terrorism	N/A	N/A	There is no evidence to suggest there is any substantial risk for a terrorist event.
Wildfire	Over the last 50 years, there were an average of 114 wildfires per year burning an average total of 991.9 acres per year in Charleston County.	The South Carolina Forestry Commission has produced an average of 32 fires per year burning an average of 691 acres per year according to a 5 year average.	In any given year, it's expected that there will be between 32 and 114 wildfires per year during between 691 and 992 acres. (Both 50 year average data and most recent 5 year data)
Tsunamis	1 tsunami report in 1886 due to the record earthquake of the same year. Charleston was designated as a 'Tsunami Ready Community' in 2006.	Zero events	There is no evidence to suggest there is any substantial risk for a tsunami event.

Dam Failure	N/A	N/A	There is no evidence to suggest there is any substantial risk for a dam failure.
Rip Currents	In the United States, it is estimated that 100 people will lose their life due to rip currents each year.	No rip current incidents have been reported by the National Climatic Data Center	Rip currents can take place each day so there is a 100% chance per year that a rip current incident could happen.
Severe Storms/Wind Storms/Hail/Other	Storms are often unpredictable and can occur any day out of the year.	According to the National Climatic Data Center, there have been 56 Thunderstorm Wind, 33 Hail & 6 Lightning events between 2008-2013.	33 Hail events over the past 5 years = 6.6 hail events per year. 1.75in/44 mm hail (H5 on the TORRO Hailstorm Intensity Scale) is expected about once per year. More common to the area are H0-H2 hail (0mm-20mm).
Drought/Heat Advisory/Climate Change	Droughts typically cover a large area and aren't confined to any geographic boundary. The U.S. Drought Monitor has been forecasting droughts on a weekly basis since 1999.	Over the past five years, the region has only experienced D2(Severe Drought), D3(Extreme Drought), and D4(Exceptional Drought) only 45 weeks. The rest have been D0, D1 or not classified of being in a drought.	The probability of the region being in a severe or worst drought under the classification by the U.S. Drought Monitor is 17%.
Winter Weather	The Charleston Region is in a subtropical climate, which has and will continue to experience low temperatures.	According to the National Climatic Data Center, there were two winter events recorded. One heavy snow event and one ice storm event.	The probability of a winter weather event occurring is 40%.

Section 5 Problem Assessment

5.1 - Hazard Vulnerability

The Charleston Region is potentially vulnerable to the hazards listed in the following Table 5-1. This table contains a quantitative risk assessment of all hazards required to be included in the Plan for Disaster Mitigation Act of 2000 compliance and additional hazards added to this plan as a result of incidents of this type of hazard occurring (i.e. rip currents) or the Hazard Mitigation & Public Information Plan Committee determining that the hazard type poses a potential risk to residents of this area (i.e. global climate change, avian flu/pandemic).

This risk assessment evaluates each type of hazard based upon its frequency and severity to determine which hazards represent the greatest potential risk to the Charleston County Region. The frequency and severity categorizations are based upon the number of each type of hazard event that has occurred in the Region, as described in Section 3 of this Plan, and the dollar amount of damages that have actually occurred (or are estimated to be possible for those types of events, such as dam failure, that have not occurred in Charleston County), as discussed in more detail in this section of the Plan. For those types of hazard events where there are no structural damages (i.e. rip currents) the actual or potential loss of life has been utilized to determine the severity of the hazard event. The prioritization of hazards using this method essentially mirrors that determined through the pre-planning questionnaires distributed as a part of this planning process. Where the risk assessment utilizing this methodology determines that multiple types of hazards pose comparable risks, the questionnaire rankings from the 2017 questionnaires have been utilized to reflect the rank order of the hazards, as applicable.

Of the additional hazards evaluated per the Disaster Mitigation Act of 2000 guidelines, the drought/heat advisory/climate change hazard scores comparably to hazardous materials incidents, wildfire, earthquake, tornado and severe storms/windstorms/hail and other events utilizing this methodology. Freezing winter weather also scores comparably to these hazards, however, ice and snow winter weather score lower since these are rarer events in the area, so the winter weather hazard overall is ranked slightly lower. Avian flu/pandemics scores slightly lower than freezing weather, due mostly to the rare nature of these events. The dam failure hazard scores lower than the other hazards identified through the pre-planning questionnaire except for terrorist activity and tsunami, mostly due to the extremely low probability of such an event occurring. Terrorism scores relatively low due to the small number of actual terrorist events that have occurred in the area over time when acts of school violence are excluded. (The acts of school violence discussed in this plan have been excluded in the frequency calculations in Table 5-1 since the data on this type of event is not always considered as an “act of terrorism” by other government agencies, so as not to skew the risk relative of this hazard to other areas of the State or country.)

The tsunami hazard scores the lowest of those for which the area is considered potentially at risk again due to the low frequency of this type of event and the minor damage that occurred

during the two recognized tsunami events experienced in this area since the 1700's. It is recognized in this plan that should a mega-tsunami occur in the Atlantic Ocean, the Charleston County area would be potentially vulnerable to more than minor damages as a result, however, based on historical evidence of events experienced, this hazard is considered the lowest ranked hazard. See Section 4 of this Plan for a more detailed discussion of these hazards.

Table 5-1

Summary Table of Risk Assessment by Hazard Type				
No.	Hazard Type	Frequency (1)	Severity (2)	Frequency x Severity
1	Hurricane	High	Catastrophic	16 points
2	Flood	High	Extensive	12 points
3	Sea Level Rise	Medium	Extensive	9 points
4	Wildfire	High	Serious**	8 points
5	Tornado	High	Serious	8 points
6	Earthquake	High	Serious*	8 points
7	Hazardous Materials	High	Serious	8 points
8	Rip currents	High	Serious*****	8 points
9	Severe Storms	High	Serious	8 points
10	Drought	High	Serious	8 points
11	Winter Weather			
	Freezing	High	Serious	8 points
	Snow	High	Minor	4 points
	Ice	Very Low	Extensive	3 points
12	Dam Failure	Very low	Catastrophic****	4 points
13	Terrorism	Low	Minor***	2 points
14	Tsunami	Very low	Minor*****	1 point

Based on Frequency and Severity of damages from events

(Risk assessments based on the number of incidents per hazard type as recorded in Part 4 of this plan, and damages experienced from hazards during past events as discussed in Part 4 of this plan. The higher the points in the Frequency x Severity column, the greater the risk posed by the hazard.)

Criteria for frequency categorization:

“Very Low”: events that occur less frequently than once in 1,000 years (1 point)

“Low”: events that occur from once in 100 years to once in 1,000 years (2 points)

“Medium”: events that occur from once in 10 years to once in 100 years (3 points)

“High”: events that occur more frequently than once in 10 years (4 points)

Criteria for severity categorization:

“Minor”: little or no damage to structures or infrastructure (area-wide) (1 point)

“Serious”: less than \$10 million in damage to structures or infrastructure (area-wide) (2 points)

“Extensive”: \$10 million to \$1 billion in damage to structures or infrastructure (area-wide) (3 points)

“Catastrophic”: greater than \$1 billion in damage to structures or infrastructure (area-wide) (4 points)

* The Charleston area experiences numerous small earthquakes each year that do “minor” or “serious” damage at the most. However, Charleston experienced the worst earthquake to strike in the Eastern United States in 1886. If an earthquake of comparable magnitude to the 1886 earthquake were to occur today, the severity of the event would be “catastrophic”.

** The Charleston area has the potential for wildfire-related losses to the over 2,000 buildings located in the Francis Marion National Forest area. Actual building damages due to wildfire have, however, been less than \$10 million in the area (e.g. “serious”). The City of Charleston has a historic district where there are many closely spaced structures of historic significance, which could result in an extensive or possibly catastrophic loss to the community if a wildfire were to occur and not be quickly contained to the building of origin.

*** The Charleston area has had several “false alarm” anthrax-related incidents since September 11, 2001; however, these events were not actual cases and did not cause damage to structures or infrastructure. This plan also addresses incidents of school violence in the terrorism section; however, these have not been included in the frequency calculations for this vulnerability assessment. The potential exists for catastrophic consequences from terrorist-related activity depending upon the structure(s) targeted by terrorists.

**** The Charleston area has never experienced a failure of the dams, which as discussed in this plan, could cause damage to structures and/or infrastructure. The dams are heavily secured, retrofitted to withstand earthquakes, and frequently inspected to ensure that the integrity of the dams is not compromised. In the unlikely event of a dam failure, the potential damage to structures and infrastructure could be catastrophic.

***** The Charleston area has only experienced one tsunami-like wave of negligible magnitude in its history. The Hazard Mitigation & Public Information Plan Committee consider this type of hazard unlikely to occur in Charleston. However, in the unlikely event of a tsunami-like wave of significant magnitude striking the Charleston area, the damages incurred would likely be greater than “minor”.

***** The severity is based upon loss of life associated with this type of hazard event rather than property or infrastructure damages, since this type of hazard does not cause property damage directly.

In addition to the quantitative risk assessment as indicated in Table 5-1, the Committees considered data provided in the State of South Carolina Hazards Assessment (SCEMD, 2013), which evaluated the hazard vulnerability of each of the counties in South Carolina utilizing an index calculated from hazard event frequency and a “social vulnerability score”. This assessment did not, however, include all of the hazards identified by the Committees as those to which the Charleston Region is potentially vulnerable, so the data that was available was considered, as applicable. This social vulnerability score utilizes data from the U. S. Census Bureau to determine the social vulnerability of each county in South Carolina. Charleston County had the second highest “social vulnerability score” (SCEMD, 2013) of all counties in South Carolina.

The summary table provided in Table 5-2 provides the vulnerability scores for Charleston County for each of the types of hazards evaluated in the State of South Carolina Hazards

Assessment (SCEMD, 2013). Charleston County ranked highest in the State in terms of overall hazard vulnerability, based upon the methodology utilized in this hazards assessment, and has the highest vulnerability score for hurricanes/tropical storms, earthquake, and hazardous materials of all counties in South Carolina. Charleston County ranked third in the State for the flood, tornado, and drought hazards, ranked fourth in the State for wildfire hazard, and seventh in the State for winter storms. Considering the State ranking, the State of South Carolina Hazards Assessment (SCEMD, 2013) analysis methodology indicated that the hurricane hazard is amongst the greatest potential risks to the Region, which is in agreement with the risk assessments determined through the other methodologies utilized in this plan to determine building vulnerability.

Based on State ranking, the State of South Carolina Hazards Assessment (SCEMD, 2013) analysis method places a higher risk on earthquakes and hazardous materials incidents than the other analysis methods utilized in this plan. Conversely, the State of South Carolina Hazards Assessment (SCEMD, 2013) analysis method placed a lower risk on floods, tornadoes, and wildfires than the other methods utilized in this plan to assess risks, based on State ranking. Given the size of the floodplain, the number of flood claims, and the number of buildings potentially vulnerable to flooding due to their date of construction and location in the floodplain (refer to Attachments 5-D and 5-E) in Charleston County, maintaining the flood hazard as the second riskiest hazard to the area is justifiable and prudent. Given that hazardous materials incidents do not typically create damage to buildings, maintaining this hazard at its ranking as determined through the other analysis methods utilized in this plan is also reasonable.

The other analysis methods utilized in this plan determined the tornado and earthquake hazards to be nearly comparable in terms of risk, whereas the State of South Carolina Hazards Assessment (SCEMD, 2013) determined the earthquake hazard to be of higher priority than tornado. Both of these hazards are considered as higher priority hazards in this plan, which is consistent with all of the analysis methods utilized to assess risks. Based purely on the vulnerability score, wildfire was the highest scoring hazard facing the Charleston Region per the State of South Carolina Hazards Assessment (SCEMD, 2013). However, the Charleston County State ranking for this hazard would indicate that this hazard should perhaps not be considered as great a risk as several of the other hazards (e.g. hurricane). This plan considers the wildfire hazard to be higher than the earthquake and tornado hazards, but less than hurricanes and floods. While Charleston County has experienced frequent drought conditions, these droughts have not caused damage to buildings, as previously indicated. Consequently, the risk posed by the drought hazard is justifiably considered lower than the other hazards.

The State of South Carolina Hazards Assessment (SCEMD, 2013) indicated that the winter storm hazard was the lowest ranking hazard for Charleston County compared to other counties in the State. Therefore, considering this hazard to be a lower priority hazard than several of the other hazards is consistent in all of the analysis methods used. The other analysis methods utilized in this plan also considered hazards not included in the vulnerability scores in the State of South Carolina Hazards Assessment (SCEMD, 2013) (e.g.

terrorist activity, rip currents, pandemics, dam failure, tsunami), providing additional information for determining hazard priorities.

The data for the following Tables 5-2 to 5-4 is from the State of South Carolina Mitigation Plan (2013), but as previously indicated, not all of the hazards determined to be potentially damaging to the Charleston Region were included in these assessments:

The State of South Carolina Hazards Assessment (SCEMD, 2013) utilizes a “Vulnerability Score”, which is an index of the frequency of hazard events multiplied by the “Social Vulnerability Score” to assess the hazard vulnerability of each County in South Carolina. Following are these “Vulnerability Scores” for Charleston County, SC for the hazards included in this report. Vulnerability Score (SCEMD 2013) is the product of the frequency of the hazard event and the social vulnerability score for the County (based on U. S. Census data for total population, age of population, gender of population, racial composition of population, and housing types in the County).

Table 5-2

2013 Risk Assessment by Hazard Type Based on Place "Vulnerability Score" Charleston County, SC		
Hazard Type	Vulnerability Score	State Ranking
Hurricane	0.92	5
Flood	1	1
Wildfire	0.24	17
Tornado	0.77	4
Earthquake	0.95	2
Hazardous Materials	1	1
Rip currents	Not studied	Not studied
Severe storms	0.41	12
Drought	0.56	17
Winter Storms	0.10	24
Avian Flu/Pandemics	Not studied	Not studied
Dam Failure	Not studied	Not studied
Terrorism	Not studied	Not studied
Tsunami	Not Studied	Not Studied
Overall	8.64	1

Source: South Carolina Hazard Mitigation Plan, 2013, pg 158

Charleston County maintained its number one ranking for vulnerability relative to the other 45 counties in South Carolina under this updated hazards assessment. In this plan, transportation-related incidents are included under hazardous materials, but otherwise, the hazards included in this assessment are comparable to those analyzed using alternative methodologies.

As was previously discussed, there are some differences in the vulnerabilities determined utilizing this social vulnerability score than those determined using other methods, however, the overall ranking of the hazard vulnerabilities as included in Table 5-1 is justified and in

general supported through the combination of methods utilized to generate the assessment. This 2013 analysis does also, however, reflect differences in the vulnerability of the Region relative to the other counties in the State when comparing the results between 2005 and 2008. Specifically, the earthquake hazard ranking dropped for Charleston County from a ranking of 1 to 4 between 2005-2008, which may be partly attributed to the sensor equipment for Charleston County being out of commission during some of this time. The ranking for Charleston County also dropped for tornadoes, wildfires, and winter storms, which may be reflective of increased incidences of these types of events in other counties of the State relative to Charleston County. Charleston County's ranking for drought, however, went up to number 2 in South Carolina in terms of vulnerability, indicating that this county has experienced more droughts relative to the other counties in South Carolina since 2013, which is consistent with the discussion in Section 4 of this plan.

The overall determination from all of the risk assessment methodologies utilized in the Charleston Regional Hazard Mitigation Plan is that the Charleston County Region is potentially vulnerable to multiple types of hazards. While slight variations in terms of which hazards may pose the greatest risk exist depending upon the analysis method utilized to assess the risk, all of the methodologies suggest that potential vulnerability to multiple types of hazards exists in the Region, including hurricanes, floods, tornadoes, earthquakes, wildfires, hazardous materials, drought, winter storms, terrorist activity, dam failure, and other forms of severe weather.

In summary, the following hazards are those for which vulnerability has been estimated in this plan using probability and severity rankings. Table 4.1 provides a listing of which government entities represented in this plan are vulnerable to each specific hazard. If a government entity is listed in Table 4.1 as having a vulnerability to a specific hazard that vulnerability is as indicated in Table 5-1. Where a hazard inflicts building or infrastructure damages that can be reasonably estimated, this information is provided in the Vulnerable Buildings and Infrastructure Vulnerability subsections in this Problem Assessment portion of the Plan. If a hazard does not inflict damages to buildings or infrastructure that can be reasonably estimated (either due to the hazard not damaging these at all and causing loss of life rather than physical building or infrastructure damages, or due to the random nature of the hazard making meaningful estimations of building or infrastructure losses not possible to reasonably determine), it is not discussed further in these latter sections of this Problem Assessment.

In the 2008 update to the State of South Carolina Hazards Assessment from the Office of the Adjutant General, the report focuses on more than just the likelihood of a hazardous event based on the frequency of prior events. The assessment evaluates each South Carolina County on their social vulnerability as well as hazard vulnerability, giving each county a more complete measure of risk known as their place vulnerability.

Charleston County stretches along the Atlantic Ocean creating nearly 100 miles of coastline. Because of the geography and the location of the county, Charleston County has continued to hold the distinction as the most hazard prone county in South Carolina. This calculation is

driven by higher than average frequencies of hurricanes and other coastal events, earthquakes, waterspouts, flooding, HAZMAT, tornadoes, extreme temperatures, hail, and other threats. Table 5-3 shows Charleston County leading the next highest four counties in that regard. Nevertheless, it is important to acknowledge that hazard score only tells a portion of the total hazard risk to the county.

Table 5-3

2013 Top Five Most Hazardous Counties in South Carolina	
County	Ranking
Charleston	1
Spartanburg	2
Greenville	3
Berkeley	4
Orangeburg	5

Source: South Carolina Hazard Mitigation Plan, 2013

To create the overall place hazard score, the hazard vulnerability numbers seen above are combined with a Social Vulnerability Score. The Social Vulnerability Assessment is a peer reviewed methodology for standardizing the statistical impact of several social issues including urbanization, employment, wealth, racial makeup, special needs, language, Native American population, and others within each county. This assessment paints a very broad picture of each county and it should be noted that a great deal of variation exists within each area. However, that being said, a powerful tool can help in identifying where extra resources should be deployed in the event of an eminent disaster.

Six distinct components explain 84% of the variance in the data for the Social Vulnerability Index, or SoVI-SC. (Table 5-4). These components include wealth (per capita income, % rich, median rent); race and gendered employment (female headed households, female labor force participation), age (over 65, % under 18); working professionals (% females, labor force participation); ethnicity and migration (% Hispanics, % newly immigrated); rural special needs (nursing home residents, farm populations); and Native Americans.

Table 5-4

2013 Top Factors in Social Vulnerability Index (SoVI)	
Component	Name
1	Social Economic Status (wealth, education, occupation)
2	Age (elderly population and young children are more vulnerable)
3	Gender
4	Race and Ethnicity
5	Employment/Employment sector
6	Special Needs Population

Source: South Carolina Emergency Management Division Risk Assessment Report, 2013

Total social vulnerability scores across all South Carolina Counties ranged from 7.31 in Saluda County, indicating it to be most vulnerable, to the least vulnerable Union County at -2.31. In Charleston County, the social vulnerability score is considerably lower than average at -1.265. Overall, that puts Charleston County in the lowest category of social risk. Again, while such figures do not represent every citizen and their individual vulnerability, the calculations predict the county and its residents are better able to respond to hazardous threats and events. Broken across the seven components, Charleston County scored as the second highest in the state on the category of urbanism and wealth, but was also listed as one of the counties with higher than average racial minority populations and unemployment numbers. The complete breakdown for the County is as follows on Table 5-5 again, a score of zero is completely neutral, and anything more than +/- 1 is significant and highlighted.

As stated previously, Charleston has a high hazard occurrence and a low social vulnerability resulting in a mixed place vulnerability score. The 2008 South Carolina Hazard Map indicates the County has an elevated historical All Hazard Occurrence due to the extensive historical inventory.

In 2013, the State of South Carolina released the South Carolina Hazard Mitigation Plan, in which each county was given two hazard scores, one based on future annual probability, and another based on annualized losses per county. Total hazard scores were calculated using the sum of each hazard class probability and the sum of annual losses. Place vulnerability was determined by adding the total hazard score with the social vulnerability score. According to these calculations, Charleston County once again had the highest place vulnerability due to location and high number of hazard exposures. The following tables 5.5 and 5.6 depict the Charleston County all-hazard score as of 2013.

Table 5-5

2013 All-Hazard Score Based on Future Annual Probability of Hazard Charleston County, SC	
Hazard Type	Hazard Score
Hurricane	0.92
Coastal	1
Severe Storm	0.41
Lightning	0.71
Tornado	0.77
Flood	1
Wildfire	0.24
Drought	0.56
Hail	0.61
Winter Storms	0.1
Earthquake	0.95
Hazmat	1
Social Vulnerability Score (SoVI)	0.36
Place Vulnerability	8.64
Total All-Hazard Score	8.27

Source: South Carolina Hazard Mitigation Plan, 2013, pg. 158

Table 5-6

2013 All-Hazard Score Based on Annualized Losses by Hazard Charleston County, SC	
Hazard Type	Hazard Score
Hurricane	1
Coastal	1
Severe Storm	0.04
Lightning	0.75
Tornado	0.26
Flood	0.46
Wildfire	0.08
Drought	1
Hail	0.08
Winter Storms	0.01
Earthquake	1
Hazmat	0.06
Social Vulnerability Score (SoVI)	0.36
Place Vulnerability	6.11
Total All-Hazard Score	5.74

Source: South Carolina Hazard Mitigation Plan, 2013, pg. 159

2013 hazard scores for the County based on future annual probability is rated as an elevated hazard with limited social vulnerability and the Hazard score based on annualized losses is an elevated hazard risk with limited social vulnerability (Source: South Carolina Hazard Mitigation Plan, 2013, p. 155).

5.2 – Vulnerable Buildings

The original pre-planning questionnaire asked respondents to rank the vulnerability of the building stock to the various hazards facing the Region. The average results for this vulnerability assessment indicate that the structures in the Charleston County Region are most vulnerable to hazards in the following order:

Hurricane
Flood
Tornado
Sea Level Rise
Earthquake
Wildfire
Hazardous Material
Terrorism
Tsunami
Dam Failure

As previously discussed, the following hazards do not cause determinable damage to buildings, so they will not be addressed in this section of this plan:

Severe Storms
Drought
Winter weather
Rip currents

The new hazards added to this plan because of the requirements for meeting the Disaster Mitigation Act of 2000, also in some cases create a potential vulnerability for buildings within the Region. While drought and heat wave hazards do not typically affect buildings, dam failure could potentially damage buildings within the Charleston County Area.

A questionnaire was distributed to the signatory entities to this Plan and others on the Project Impact e-mail lists during 2017 to determine if the hazard vulnerability rankings had changed since the last survey was taken. For structure vulnerability, the hazards were ranked as follows in this more recent survey: 1. hurricane; 2. earthquake; 3. flood; 4. tornado; 5. sea level rise; 6. hazardous materials incident; 7. terrorist incidents; 8. tsunami; 9. wildfire; 10. dam failures. In this plan, the shootings/carrying of weapons in schools are listed in the acts of terrorism subcategory. Earthquake surpassed flooding in this most recent survey and the new hazards added to meet the Disaster Mitigation Act of 2000 requirements were the lowest ranked by the survey respondents. The federal focus on terrorism since the attacks of September 11, 2001 and sea level rise with the increased importance and relevance of climate change may be at least in part responsible for the higher ranking of the terrorist activity hazard and the need for the addition of sea level rise in this more recent survey. The earthquake hazard increasing in ranking is perhaps reflective of the educational activities that have been on-going since this Plan was originally developed to promote awareness of the earthquake hazard in this area.

In this section, municipalities and the County are the government entities that are discussed because the special purpose districts have overlapping jurisdictional boundaries with the Unincorporated County and/or one or more municipalities, and these are the entities for which records are available in the Assessor's database regarding building numbers and valuations.

1, 2 & 3. Hurricane, Flood, and Sea Level Rise

Although building codes have been enforced in the Charleston County Region in some cases from as early as the late 1800's (City of Charleston), the codes in general did not begin addressing high wind until the late 1970's and seismic design parameters until the late 1990's. Similarly, floodplain management regulations in general did not come into force throughout the Charleston County Region until in most cases the late 1970's or early 1980's. Therefore, structures built pre-1985, in general, are considered more likely to be vulnerable to hurricane damage and flood damage than those constructed since 1985. Manufactured housing (mobile homes) constructed pre-1976 are also highly vulnerable to high wind damage since there were no federal guidelines for construction of this type of housing prior to that date. Even after 1976 when Federal guidelines for the construction of mobile homes were implemented, the construction of mobile homes was not up to the wind speed designs of site-built construction. There are an estimated 2,424 manufactured homes in the special flood hazard zone Charleston County Region at this time.

There are an estimated 64,574 residential site-built buildings in "A" flood zones and 6,947 in "V" flood zones in the Region, for an estimated total of 71,521 residences potentially vulnerable to flooding due to their location in the special flood hazard area (SFHA) only. The "A" zone includes parcels designated with any "A" flood zone. The "V" zone includes parcels designated with any "V" designation. Since most manufactured homes are treated for tax assessment purposes as "titled property" as opposed to real property, differentiating flood zones for the manufactured homes using the parcel layer was not feasible at this time. Manufactured homes in the SFHA were considered as "A" zone properties for total building count per flood zone area purposes, since most jurisdictions within Charleston County restrict manufactured homes from their "V" zone areas. There are also 6,445 commercial structures throughout the Region, which are potentially vulnerable to flooding due to their location within the SFHA only. Attachment 5-D to this section provides an estimation of the number of vulnerable buildings by jurisdiction/area within Charleston County. The estimates for the number of mobile homes in the SFHA are listed separately, since mobile homes are more highly vulnerable to high wind conditions sometimes associated with flooding, in general, than are site-constructed dwellings. The data utilized for this table were derived using a GIS overlay of FEMA Q-3 flood zone data for Charleston County to designate flood zones for the parcels within Charleston County. Building counts were obtained from the Charleston County Assessor's database, utilizing this flood zone information to differentiate the "A" and "V" flood zones from the non-SFHA areas. Building count and valuation data for several of the special purpose districts (e.g. Cooper River Parks and Playground Commission, North Charleston District, St. Andrew's PSD, St. John's Fire District, and St. Paul's Fire District) are included in the data for unincorporated Charleston County. The service areas for the several

of the special purpose districts included in this plan also cross multiple jurisdictional boundaries, and are included in the building count and valuation data for these jurisdictions.

The actual vulnerability of the building stock within the special flood hazard area (SFHA) does potentially vary depending upon the date of construction for the building, since buildings constructed since the enforcement of floodplain development regulations are elevated to anticipated flood levels and built in accordance with more stringent code requirements. The year of 1985 has been selected as a point at which newest construction in the Charleston Region should be able to withstand the effects of most flood and hurricane events. The estimated numbers of residential and commercial site-built structures that were constructed prior to 1985 and located in the SFHA are shown in this table. Since no date of construction data is available for manufactured homes in the Charleston County database, the manufactured home data estimates the potential vulnerability of these structures because of their location within the SFHA only. Using this refined data, there are an estimated total of 36,465 buildings (including manufactured homes), of which 6,608 are in Unincorporated Charleston County, that are vulnerable to flooding due to their age of construction and location in the Special Flood Hazard Area in the Charleston Region. Of these, 32,532 are residential structures, 3,195 are commercial structures, and 738 are manufactured homes. Attachment 5-E summarizes the vulnerable building counts using this refined analysis method for each of the jurisdictions within Charleston County.

The table provided in Attachment 5-F further refines the potential vulnerability of the building stock within the Region by estimating the average value of the buildings by jurisdiction within the Region that are potentially vulnerable to flooding. The data provided for pre-1985 building valuations were estimated from data derived from the computerized appraisal records in the Charleston County, SC Assessor's office. The average building valuation data indicated is current through April 2017, so the valuations indicated reflect a 20% upward adjustment to reflect current values. This data does not include "exempt" properties, manufacturing properties, or utility or railroad properties. Exempt properties are generally those owned by a government entity (Federal, State or Local) or some charitable organizations. The ages of the buildings were derived from the "year built" records in the tax assessor's database. The building values shown are estimated market value, not replacement value. The valuations provided do not include land values. As this table reflects, the Charleston Region has an estimated \$6.7 billion in real property value and mobile homes potentially vulnerable to flood losses due to its location in the Special Flood Hazard Area and construction prior to 1985. The data provided for each jurisdiction gives a rough estimate of potential flood losses if a severe flood event, including hurricane storm surge, occurs.

The table in Attachment 5-G provides information regarding the total value of buildings located within the "A" and "V" flood zones per jurisdiction, as determined from the tax assessor's database. There is a total of approximately \$18 billion of real property located in the "A" flood zone and \$2.7 billion of real property located in the "V" flood zone. The "V" flood zone property is considered the most highly vulnerable to hurricanes, since it is subject to wave action and rising water during hurricanes and coastal flooding events.

As a further step to attempt to quantify the vulnerability of the Charleston Region to hurricane-force winds and storm surge flooding, a HAZUS-MH simulation of a category 4 hurricane-making landfall at the northern-most tip of the Isle of Palms was performed. The following is the relative degree of anticipated building-related damages (moderate or more) for all of Charleston County as a result of a hurricane of this magnitude striking in this location. When this simulation was run using data from the 2010 census as the basis for the building count and valuation information, at least 21,885 buildings were expected to have moderate or more damage in Charleston County. Of these, 10 fire stations, 2 hospitals, 4 police stations, and 119 schools would be expected to have at least moderate damage as a result of a hurricane of this magnitude striking in this location, per this simulation. This simulation estimates that 1,604 buildings will be completely destroyed in Charleston County as a result of a hurricane of this magnitude, with 1,600 of these being residential structures. No critical facilities are expected to be totally destroyed by a hurricane of this magnitude striking in this location, per this simulation. Estimated building, contents, inventory, and business interruption losses from this simulated hurricane are as follows:

Building:	\$1.14 billion
Contents:	\$416.5 million
Inventory	\$ 4.4 million
Business Interruption Losses:	\$ 334.6 million
Total (approx.):	\$1.89 billion

Of these total estimated building-related damages determined through this simulation, approximately 83.9% are anticipated to occur to residential properties, 13.1% to commercial properties, 1.9% to industrial properties, and 1.1% to other properties in Charleston County. As a comparison of these results to the damages incurred as a result of Hurricane Hugo (a category 4 hurricane), the comparably lower magnitude of the estimated damages from this simulation than actually occurred during Hurricane Hugo is believed to be attributable to several factors. Specifically, Hurricane Hugo destroyed many of the pre-FIRM buildings, mostly on affected barrier islands and coastal communities in the central and northern parts of Charleston County, and structures built to replace these have been constructed in accordance with more current codes and designed to withstand high wind speeds associated with hurricanes, and have also been elevated to or above anticipated flood elevations associated with the hurricane storm surge. The HAZUS-MH models take applicable codes into account in determining estimated building losses and damages with simulated hurricanes. In addition, the track of this simulated hurricane is slightly north of the track actually taken by Hurricane Hugo in 1989, placing the most damaging quadrant of the hurricane slightly further north and in less developed areas of Charleston County than where Hurricane Hugo struck, thereby potentially estimating fewer damages in the more highly developed areas (i.e. the City of Charleston and the Town of Mt. Pleasant) than would be expected from a hurricane following Hugo’s path more directly. HAZUS-MH also uses census data, which is not considered to be as accurate in its building count and valuation information as the data contained in the Charleston County Assessor’s database. In an attempt to rectify this for future updates to this Plan, Charleston County has submitted a grant application to seek funding to develop an enhanced tool for populating the HAZUS-MH

program with data from the Charleston County Assessor's database, for the purpose of being able to further define the estimates of potential hazard-related damages generated from this software. Therefore, while this simulation is valuable in helping to quantify potential current damages associated with large-scale hurricanes, the results from this simulation are also not exactly representative of Hurricane Hugo, which is the most damaging hurricane to strike the Region in recent history, so these estimates should be analyzed keeping this in mind.

This HAZUS-MH simulation also produced estimates of the quantity of debris that would likely be generated by a hurricane of this magnitude striking in this location. The model estimates that approximately 3.1 million tons of debris would be expected to be generated by this type of hurricane, with 91% of this being trees and limbs. The model estimates that it will take 10,791 (25 ton) truckloads to haul the debris generated from this hurricane. A preponderance of tree-related debris was evident as a result of Hurricane Hugo in 1989, so in this aspect, the simulation appears to be providing relatively accurate and useful information for post-event clean-up planning.

4. Wildfire

Fire prevention and control have been intimate requirements in the building-related codes and zoning ordinances enforced throughout the Charleston County Region since the adoption of the first of these types of codes. The most vulnerable structures to fire other than wildfire would likely be those in the central business district of the City of Charleston. This is due primarily to the close physical proximity of the structures in this area. The City of Charleston, however, has a fire department that is rated Class 1 through the Insurance Services Organization fire rating schedule, and is therefore well equipped to deal with fires should they occur in this area. There are also well-established jurisdiction-conducted fire prevention inspection programs throughout the Region, providing periodic inspections for fire prevention of the commercial buildings in the Region. Even developed islands in Charleston County without road access, such as Dewees Island, have access to fire fighters and equipment for prompt response to fires should these develop.

Wildfires in rural areas are possible due to, for example, arson, drought or lightning initiation, and are often difficult to contain due to the lack of access to the fire and a lack of readily available water to fight these wildfires, and the rapid spread of these fires due to the dense forestation of these areas. In the event of wildfires, structures in less populated areas in the proximity of the forested areas could be at risk of fire damage. Factors that makes homes at higher risk for wildfire damage include, but are not limited to, long narrow driveways with no turnarounds for fire apparatus, and fuel loads (brush, trees, shrubs, pine straw, etc.) adjacent to the structure. Within Charleston County, there are 2,252 buildings located within the boundaries of the Francis Marion National Forest. Of these 1,032 are in the Awendaw area, and 1,220 are in Unincorporated Charleston County. Utilizing the average residential building valuation for buildings constructed pre-1985 as detailed in Attachment 5-F of this plan to be consistent with the refined methodology utilized for estimating flood-related building value loss potential, these buildings within the wildfire prone area are estimated to have an average value of \$65,000 in the Town of Awendaw, and \$89,000 in Unincorporated

Charleston County. These buildings, by nature of their location within the forest, are the most vulnerable buildings to wildfire damage within the Charleston County Region.

5. Tornado

Tornado vulnerability exists in almost any structure in the Region since the building-related codes in general do not address designing for winds of the speed often associated with tornadoes. The major vulnerability regarding tornadoes is that in most cases, structures in this Region are not provided with basements or below-grade shelter areas due to the high water table and the flood zone restrictions on basements in the special flood hazard area. Manufactured housing is probably the most vulnerable general category of structures in the Region to tornadoes, since these structures are often located in areas where tornado activity is greatest and are less likely to provide adequate shelter from these storms than site-constructed structures. The majority of the mobile homes within Charleston County are located in the unincorporated areas of the County and the City of North Charleston.

Tornadoes of a severe magnitude are capable of totally damaging any type of structure in their path. According to the National Weather Service, the Charleston County area has never been hit by a tornado greater than an F2 in magnitude on the Fujita Tornado Damage Scale. Chances of the Charleston County area being hit by a stronger tornado remain very slim because of the marine influence layer along the coastal areas. Tornadoes of an F2 magnitude may have winds between 113 and 157 miles per hour, and are capable of totally destroying mobile homes and taking the roofs off of site-built homes. Tornadoes of this magnitude can also overturn boxcars, uplift automobiles, snap and uproot trees, and cause small objects to become wind-borne debris. Tornadoes can form any time of the year and may be spawned by hurricanes.

According to data provided by the American Red Cross (2016), there have been 11 tornadoes in South Carolina for which the American Red Cross provided disaster services. Following is a listing of the tornadoes that occurred in Charleston County per the American Red Cross data and the number of families affected by these tornadoes:

<u>Date of Tornado</u>	<u>Location of Tornado</u>	<u>No. of Families Affected</u>
October 15, 2015	Johns Island, SC	10

The American Red Cross data do not include any commercial structures that may have been damaged by these storms. The Charleston County area could potentially incur heavy localized property damage, particularly if an intense tornado made landfall in a densely populated area.

The potential loss of one or more major employers to this type of event should also be considered, since the economic loss to the community can spread beyond the area immediately affected by a tornado, if an employer is forced to permanently or temporarily cease operations as a result of building or other property damage. Not only is there potential for commercial building and property losses, but also the potential for job loss throughout the community if an employer cannot quickly recover from this type of event.

Building and other property loss is also only one type of loss associated with tornadoes, particularly for those that live in manufactured homes. Researcher Harold Brooks, of the NOAA National Severe Storms Laboratory, has indicated that mobile home residents are killed at a rate 20 times greater than permanent home residents in tornadoes. Therefore, potential loss of life to manufactured home residents as a result of tornadoes, for which no dollar value can be assigned, must also be considered when evaluating potential losses to this type of event.

6. Earthquake

Seismic (earthquake) design parameters are also relatively recent additions to the building-related codes enforced by the various jurisdictions in the Charleston County Region. For the most part, buildings constructed since the between the middle 1980's and early 2000's have been designed to meet the seismic resistance criteria specified in the Standard Building Code or the CABO One and Two Family Dwelling Code. Buildings constructed since the early 2000's have been constructed to even higher standards for earthquake as contained in the International Building and Residential Codes. However, buildings constructed prior to this time have the potential to be vulnerable to earthquakes, particularly those that are unreinforced masonry construction. In addition, structures on reclaimed land (filled marsh, old landfill, etc.) will respond with differing characteristics in the event of an earthquake than those on non-reclaimed land.

According to the Comprehensive Seismic Risk and Vulnerability Study for the State of South Carolina, and a report produced from a HAZUS study for the South Carolina Emergency Management Division, an earthquake of a similar magnitude to the earthquake that occurred in Charleston in 1886 (magnitude 7.3 on the Richter Scale) would be expected to produce the following building-related losses:

- Berkeley, Charleston and Dorchester Counties would be expected to have an estimated \$7.6 billion in building losses.
- 14,267 million tons of debris (wood/masonry and steel/concrete) would be expected to be generated in Charleston County alone.
- Over 250 fires would be expected to result in the Tri-County area as a result of an earthquake of this magnitude, resulting in further building-related losses.
- Schools and fire stations are vulnerable to damage due to the age of the buildings and type of construction (statewide estimate of over 220 schools and 100 fire stations damaged).
- More than 30 hospitals in the State (30%) are expected to be non-functional. Most of this damage is expected in the Berkeley-Charleston-Dorchester County areas.

Charleston County participated in the statewide earthquake drill on March 14, 2016, where the scenario was a 7.7 magnitude earthquake occurring in the same location as the 1886 Charleston earthquake. HAZUS-MH was utilized to estimate the damages due to this earthquake for Charleston County only. The following building-related damage estimates were derived from this simulation:

Structural Losses (total):	\$4.56 billion
Non-Structural Losses (total):	\$17.23 billion
Contents losses (total):	\$4.60 billion
Inventory losses (total)	\$86.64 million
Income losses (total):	\$2.47 billion
Total losses:	\$28.94 billion

Of these estimated losses, approximately 55.4% are anticipated for single-family residences, 23.2% for other residential properties, 17.5% for commercial properties, 2.4% for industrial properties, and 1.5% for other properties. A total of 73,777 buildings in Charleston County and its inclusive municipalities are expected to have damage as a result of an earthquake of this magnitude, with 53% of these expected to receive extensive damage. Critical facilities such as hospitals (12), schools (119), police stations (12), fire stations (58) and emergency operations centers (1) are expected to receive some damages because of an earthquake of this magnitude, based upon this HAZUS-MH simulation.

It should be noted that earthquake intensity is on a logarithmic scale, so an earthquake with a magnitude of 7.7 has much greater damage potential than, for example, the 7.3 magnitude earthquake that the Charleston area previously experienced in 1886. The Charleston County area has fortunately not previously experienced an earthquake with a magnitude as high as a 7.7 on the Richter scale. This of course, is not impossible, but it is also a more damaging earthquake than the largest earthquake that the area has ever experienced in its history. As HAZUS-MH simulation points out, Charleston County could receive catastrophic damages if the area would experience an earthquake of this magnitude. Consequently, educating the citizenry regarding preparations they should take to minimize building-related damages due to earthquakes is a high priority item for the area. It is also important for this education to be aimed at those in the construction community, to reduce their interest in attempting to exclude some of the provisions of the adopted codes that apply to seismic strengthening of buildings. (The Homebuilders Association of South Carolina had recommended several changes to the adopted codes, some of which would have resulted in a relaxation of seismic requirements, but these amendments either were ultimately withdrawn or were rejected by the code adoption commission.)

On June 20th, 2012, another HAZUS earthquake simulation was performed to include new construction in the county, new population figures, and additional refinements in the HAZUS simulation program. The simulated earthquake was a 6.8 magnitude on the Richter scale and the simulated epicenter was modeled after the historic 1886 earthquake.

HAZUS estimates that 84,208 buildings will be at least moderately damaged; this is over 62.0% of the buildings in the area. There are an estimated 25,715 buildings that will be damaged beyond repair.

With regards to essential facility damage, all 12 area hospitals, 118 of the 124 schools, the single Emergency Operations Center, 10 of the 12 Police Stations and 20 of the 21 Fire Stations are expected to receive at least moderate damage. Response and functionality of these facilities will be compromised.

With regards to transportation systems, 275 of the 332 bridges are expected to receive moderate damage, 160 of them are estimated to suffer complete damage. After day 1, only 57 bridges will have functionality and after day 7, 89 will be operable. The main bus facility is expected to receive moderate damage, 3 of the 5 ferry facilities are expected to receive moderate damage, 2 of the 3 airport facilities are expected to receive moderate damage, and all 57-port facilities are expected to receive moderate damage, though only 13 suffer complete damage.

Nearly each utility system (water, wastewater, oil systems, electricity, and communication) is expected to receive at least moderate damage at nearly 100% of area locations, though nearly 90% of water, 60% of wastewater, 71% of electrical power, and 67% of communication systems will be functional after one week. It is estimated that after one week, there will not be any functioning oil/fuel systems in the area. It is estimated that by day 30 after the earthquake, all area households will have potable water service, but 16,904 households of the 123,326 will still not have electricity.

As a result of the earthquake, 6.66 million tons of debris will be generated.

The total estimated economic loss is expected to total 14.8 billion dollars. 24% of the estimated losses were related to business interruptions of the Region. By far, the largest loss was sustained by the residential occupancies which made up over 43% of the total loss.

Transportation system losses are expected to reach \$5.1 billion with a resulting economic loss at \$0.5 billion. These figures are based on a relatively long term 15-year timeframe. Utility system losses were estimated at \$2.2 billion with respective economic loss at \$300 million.

7. Hazardous Material Incidents

The Charleston County Region has a hazardous material program, which is exemplary. The local industries and other businesses, which store hazardous materials, support this program through annual fees based upon the type and quantity of hazardous materials stored. The revenues generated through this program are utilized to provide hazardous material response equipment, training, and services for the emergency responders of the community. The greatest hazardous material vulnerability of the structures in the Region is likely due to releases that may occur as a result of a natural hazard damaging permanent storage facilities. Building-related hazardous materials incidents represent a very small percentage of the hazardous materials incidents that occur within the Region.

8. Dam Failure

Pinopolis Dam

From the standpoint of damage to structures, the dam failure event with the greatest potential for overall damage in Charleston County would be a failure of the Pinopolis Dam system. A dam failure that would affect the Charleston County area is, however, an extremely unlikely event, since the Pinopolis dams have been retrofitted to withstand an earthquake of the magnitude of the 1886 Charleston earthquake and are inspected and maintained to strict

standards. If a catastrophic failure of the Pinopolis dam system were to occur, floodwaters would be expected to reach the closest areas within Charleston County to the dam location within one day of the failure. The Emergency Action Plan for Dam Failure (Santee Cooper December 2015) provides maps of potential inundation areas in the event of a breach of this dam system. The floodwaters would not be expected to recede until approximately 12 days after the dam breach. In addition, if the floodwaters caused the above ground liquid storage tanks located along the Cooper River to dislodge or rupture, the tanks themselves could become floating objects and/or the contents of the tanks could pollute the floodwaters with potentially hazardous and/or flammable substances. Other debris resulting from up-stream damages would also likely be carried in the flood stream. This debris could create additional damages within Charleston County as it strikes and damages buildings and infrastructures along its path to the Atlantic Ocean. Utilizing a Geographic Information System (GIS) overlay map, a determination of buildings potentially in the inundation area for a Pinopolis Dam system break has been made for the three municipalities with the greatest potential number of buildings in the inundation area, namely the City of North Charleston, the City of Charleston, and the Town of Mt. Pleasant. It is estimated that 10,498 buildings in the City of North Charleston, 19,896 buildings in the City of Charleston (including Daniel Island), and 16,242 buildings in the Town of Mt. Pleasant are potentially in the inundation zone for a breach of the West Pinopolis Dam. Whether or not these buildings would be flood damaged is contingent upon the elevation of the finished floor of the buildings relative to the actual elevation of the floodwaters. Any buildings located along the Cooper or Ashley riverfronts that are not elevated above the anticipated dam failure inundation level indicated in Table 5-7 would be potentially vulnerable to floodwater-related losses. Consistent with the refined analysis methodology for estimating the value of buildings potentially vulnerable to loss due to flooding events (see the hurricane/flood discussion in this section), buildings constructed pre-1985 are considered to be the most likely buildings to have finished floor areas at lower elevations, and are therefore considered more likely to incur flood-related losses in the event of a dam breach. The barrier islands would not be expected to experience flooding as a result of a breach and catastrophic failure of the Pinopolis Dam system.

Table 5-7

Projected Maximum Flood Water Elevations in the Charleston Region for a Breach of the Pinopolis Dam System					
Locations	52 hrs. after breach	64 hrs. after breach	96 hrs. after breach	104 hrs. after breach	Flooding not projected as a result of a breach
City of North Charleston near Hwy. 52 (near the Berkeley County border) and near to the Cooper River.	15.4 feet				
Central North Charleston near the Cooper River, Daniel Island, Mt. Pleasant near the Cooper River.		12.7 feet			
Neck area of peninsula Charleston, Highway 17 area near the Ashley and Cooper Rivers (City of Charleston, Town of Mt. Pleasant), City of Charleston and Unincorporated Charleston County areas West of and bordering the Ashley River.			9.8 feet		
Eastern Mt. Pleasant, Ashley River border areas near Atlantic Ocean (City of Charleston, Unincorporated Charleston County, James Island), lower peninsula Charleston.				8.3 feet	
Isle of Palms, Sullivan’s Island, Folly Beach, Kiawah Island, Seabrook Island.					X
Ravenel, Meggett, Hollywood, St. Paul’s Fire District, St. John’s Fire District, Southern portions of Unincorporated Charleston County, City of Charleston areas in southern portions of Charleston County, Town of James Island areas not adjacent to Ashley River or Atlantic Ocean.					X
Awendaw, McClellanville, Northern portion of Town of Mount Pleasant (areas beyond 19 miles north following Hwy. 17 from Cooper River bridges), Northern portions of Unincorporated Charleston County.					X
City of North Charleston areas remote from Cooper River, Lincolnville, other areas in Charleston County not otherwise indicated.					X

Source: Emergency Action Plan for Dam Failure (Santee Cooper, December 2015)

Santee Dam

A catastrophic failure of the Santee Dam system would result in building losses, primarily in the areas located in the northern-most portion of Charleston County along the Santee River floodplain. Properties in Unincorporated Charleston County and in the McClellanville-area would be the main areas expected to experience affects from a breach of this dam. The Emergency Action Plan for Dam Failure (Santee Cooper, December 2015) provides maps of areas projected to experience flooding as a result of a breach of the Santee Dam, and lists 54 structures that are in the potential inundation area within Charleston County. The buildings potentially affected by a breach of this dam would be estimated to be approximately valued at \$3.6 million. Nearly all of these structures are in Unincorporated Charleston County (e.g. St. James-Santee areas) in the McClellanville-area along the Santee River and in the Wambaw Creek area. The maximum water elevations projected from a breach of the Santee Dam within Charleston County (22.7 feet) are expected to occur near Germantown along the Santee River, approximately 64 hours after a breach of the dam. Flooding is not projected to extend further south into Charleston County than approximately 6 miles from the northern-most border with Georgetown County. Therefore, no jurisdictions within Charleston County, except for

Unincorporated Charleston County near the Town of McClellanville, would be projected to receive flooding as a result of a Santee Dam breach. The maximum projected flood elevation and location are shown on Table 5.8. Any buildings not elevated to or above the anticipated dam failure inundation level would potentially experience flood damages. Floodwaters are expected to mostly recede from Charleston County within 10 days of a Santee Dam breach event (Emergency Action Plan for Dam Failure, Santee Cooper).

Table 5-8

Projected Maximum Flood Water Elevations in the Charleston Region for a Breach of the Santee Dam System					
Locations	52 hrs. after breach	64 hrs. after breach	72 hrs. after breach	104 hrs. after breach	Flooding not projected as a result of a breach
In the vicinity of Railroad Bridge, near the intersection of Hwy 377 and Hwy 45	42.3 ft				
The general region where Highway 301 and State Highway 45 intersects		38.1 ft			
Southwest portion of Charleston County, West of the Ashley River, near intersection of US Hwy 17/701			19.1 ft		
Region of Berkeley County which includes the intersection of US route Hwy 17A and State Hwy 45				28.5 ft	
Isle of Palms, Sullivan’s Island, Folly Beach, Kiawah Island, Seabrook Island.					X
Ravenel, Meggett, Hollywood, St. Paul’s Fire District, St. John’s Fire District, Southern portions of Unincorporated Charleston County, City of Charleston areas in southern portions of Charleston County, Town of James Island areas not adjacent to Ashley River or Atlantic Ocean.					X
Awendaw, McClellanville, Northern portion of Town of Mount Pleasant (areas beyond 19 miles north following Hwy. 17 from Cooper River bridges), Northern portions of Unincorporated Charleston County.					X
City of North Charleston areas remote from Cooper River, Lincolnville, other areas in Charleston County not otherwise indicated.					X

Source: Emergency Action Plan for Dam Failure (Santee Cooper, December 2015)

9. Terrorism

The federal government-owned facilities (e.g. air force base, post offices, etc.) are probably the most vulnerable general category of structures to terrorist threats, followed closely by the structures at the shipping port and the local government offices in the Region. These facilities located in highly congested areas with easy access to the structures, in general, are likely to be more vulnerable than those with more controlled access to the structures. A terrorism annex to the emergency operations plan has been developed to address response to this threat.

5.3 – Infrastructure Vulnerability

The questionnaire also asked respondents to indicate their opinions regarding the vulnerability of the infrastructure in the Charleston County area to natural and man-made hazards. The average results for this vulnerability assessment indicated that the infrastructure in the Charleston County Region was most vulnerable to hazards in the following order:

Hurricane
Flood
Earthquake
Sea Level Rise
Tornado
Terrorism
Hazardous Material
Wildfire
Winter Weather
Dam Failure

As previously discussed, of the hazards to which the government entities represented in this plan are considered to be vulnerable, the following do not cause infrastructure damages:

Severe Storms
Drought
Tsunami
Rip currents

These latter 5 hazards will not be discussed further in this infrastructure vulnerability section of this plan as previously discussed since these do not cause damages to infrastructure that can be reasonably determined. Applicable infrastructure damages as discussed herein apply to all government entities, including the special purpose districts that overlap jurisdictional boundaries with municipalities or Unincorporated Charleston County as indicated in Table 4.1 as having a potential vulnerability to the indicated hazard.

The analysis for the questionnaire that was distributed during 2017 indicated that the vulnerability of the infrastructure in the Region per hazard was ranked as follows: 1. hurricane; 2. flooding; 3. earthquake; 4. sea level rise; 5. tornado; 6. terrorist incident; 7. tsunami; 8. Wildfire; and 9. dam failure. The rankings for floods and earthquakes demonstrate a slight reduction in the perceived vulnerability of infrastructure to earthquakes compared to the earlier survey and a slight increase in this vulnerability for flooding. The perception of the survey respondents as to the vulnerability of infrastructure in the Region to fire and tornadoes also went down.

Of the additional hazards required to be included in hazard mitigation plans to meet the requirements of the Disaster Mitigation Act of 2000 that the Charleston County area could possibly experience (drought/heat wave, dam failure, tsunami), only dam failure and tsunami would be expected to potentially cause damages directly to the infrastructure within

the Region, although the probability of either of these types of events is very low. Any damages to infrastructure as a result of drought would most likely be indirect due to wildfires, which are addressed within this plan under "Wildfire". Rip currents and avian flu/pandemics do not cause structural damage to infrastructure and subsequently are not considered as hazards to infrastructure within this plan.

1. Hurricane

The infrastructure most vulnerable to hurricane activity is likely to be the above ground electrical, telephone, liquefied petroleum gas, and cable television service. The City of Charleston, in conjunction with South Carolina Electric and Gas Co., has, however, initiated a program where neighborhoods may convert their overhead electrical service to underground service for enhanced hurricane protection. SCE&G maintains a fund to which consumers and the utility contribute to provide funding for special projects, such as infrastructure upgrades or subterranean line installations, although this utility stresses that underground problems in the electrical service are more difficult to find and repair than overhead transmission line problems. Wastewater treatment facilities may also be vulnerable to hurricane activity, particularly if inundated by storm surge often associated with hurricane activity. Older bridges may also be vulnerable to hurricane damage if these bridges were not originally designed to withstand the high winds (minimum 130 mph 3 second gust wind speeds) generally associated with hurricanes, or are in deteriorated structural condition. Shipping port facilities are also potentially vulnerable to hurricanes due to the close proximity of these facilities to the water. Roads, while generally not vulnerable to high wind conditions directly, could experience damage (washout) from flooding as well as obstruction/damage from fallen debris generally associated with hurricanes. Roads in coastal areas are also vulnerable to sand obtrusion as a result of hurricane activity. Drainage ways may also be vulnerable to damage from hurricanes if they become obstructed by debris or are unable to carry the volume of water generated by the flooding often associated with this type of event.

2 &3. Flood and Sea Level Rise

The most highly vulnerable infrastructure to flood is likely to be roads in low lying areas and bridges which are close to the water level of the body of water over which they cross. Liquefied petroleum gas tanks that are above ground are also vulnerable to uplift and floatation if not adequately anchored to withstand hydrostatic and hydrodynamic forces associated with high flood water levels. Grade level utility boxes (e.g. telephone, cable television, electrical transformers, etc.) in low lying areas are also likely to be made inoperable/insecure during high water levels unless the boxes are flood proofed or the equipment is designed to be operated in a submerged state. Wastewater treatment plants are also vulnerable in the event of a flood as a result of the operational necessity for this type of facility to be located close to sea level. The shipping port is also potentially vulnerable to flood damage due to the close proximity to the water.

4. Wildfire

The most vulnerable infrastructure to localized fire would likely be gas utility services (particularly above ground liquefied petroleum gas). In the event of wildfire, any utility lines crossing through forested areas would be potentially vulnerable to damage. Roads or bridges located in forested areas may also be vulnerable to damage from fire, either directly as a result of proximity to intense heat or as a result of damage/obstruction due to fallen debris.

5. Tornado

Tornado infrastructure vulnerability is likely to be greatest for those utilities located above ground (electrical, telephone and cable service). Bridges which may be in the path of a tornado are also vulnerable to damage as a result of a direct strike by one of these storms. Roads are also vulnerable to damage as a result of fallen debris associated with tornado activity. Any buildings in the direct path of a tornado which may be operation centers for utility or emergency services (e.g. power transmitting stations, wastewater treatment facilities, water utility control buildings, police stations, fire stations, emergency operation centers, etc.) would also be vulnerable to a direct strike by a tornado.

6. Earthquake

Earthquake infrastructure vulnerability is dependent upon the magnitude of the earthquake, the location of the earthquake epicenter, soil type and conditions, and duration of ground shaking. If an earthquake should cause a failure of the Santee Cooper dam, infrastructure damages associated with flooding as will be discussed in the following section would also apply to earthquake vulnerability. If a dam failure is not associated with an earthquake, the most vulnerable infrastructure to an earthquake would likely be underground water, sewer, and natural or liquefied petroleum gas utility lines. The Charleston Waterworks has, however, begun work on a \$26.5 million project to replace an aging sewer tunnel that services the Charleston peninsula, which helps reduce some of this vulnerability to earthquakes and flooding. They have also asked the Charleston County Sheriff's Department to utilize their reverse 911 notification systems to let residents know of any issues that may result with drinking water, should there be damages to any water lines. A major earthquake would be expected to create stresses on water transmission lines, which could disable water services to a large number of residents for a long period since earthquake-related water line breaks could affect a larger number of water lines making diversion of water more difficult. Older bridges may be vulnerable to collapse in an earthquake of magnitude 5 or greater on the Richter scale, particularly if they are in deteriorated structural condition. Roads and bridges in areas subject to liquefaction are also highly vulnerable in the event of an earthquake of significant magnitude to result in soil liquefaction (magnitude 6 or greater on the Richter scale). The Charleston International Airport is located on land that experienced liquefaction during the 1886 earthquake. The effect this prior liquefaction may have in future earthquakes has not been definitively determined, however, it is likely the airport may experience liquefaction again in the event of a significant earthquake. Roads in areas not subject to liquefaction may also still be vulnerable to damage/obstruction by fallen debris in earthquakes large enough to cause buildings to shed masonry veneer/appendages or experience actual structural failure (magnitude 6 or greater on the Richter scale). Roads on reclaimed land (filled marsh, old

landfill, etc.) will respond with differing characteristics in the event of an earthquake than roads on non-reclaimed land.

According to the Comprehensive Seismic Risk and Vulnerability Study for the State of South Carolina, a HAZUS-based study produced for the South Carolina Emergency Management Division, an earthquake of the magnitude of the 1886 Charleston earthquake (magnitude 7.3 on the Richter Scale) would be expected to potentially cause the following infrastructure-related losses:

- Direct economic losses to lifeline (transportation and utility) systems state-wide is expected to be over \$1 billion.
- An estimated 800 bridges state-wide are expected to suffer damage to the extent that they will be inaccessible. Charleston County communities accessible only by bridge routes could be left without access until bridges are repaired or replaced.
- Damage to electric power facilities is expected to be mostly limited to major substation equipment, with 63 electric power facilities state-wide expected to be damaged, leaving approximately 300,000 households without electric service. Distribution lines are also expected to need repairs so that restoration of electrical service may take days to weeks to complete.
- Damage to water systems is expected primarily to pipelines, storage tanks or reservoirs, treatment facilities and pumping plants. Pipeline damage is expected to be most critical in determining when water service can be restored to the general public. Since liquefaction is expected in the Charleston County area if an earthquake of this magnitude occurs, damage to the water distribution system is expected requiring weeks to months to complete repairs. It is estimated that 80% of households will be without water.
- Water failures are expected to drain water reserves and create issues for water availability for fighting fires that are expected.
- Environmental damage is expected due to the wastewater treatment facilities or pipelines being damaged.
- Natural gas and oil systems are expected to receive moderate to minor damage, particularly natural gas transmission lines where gas-welded joints are present.
- All elevated above-ground storage tanks are potentially vulnerable, particularly if ground shaking is intense.
- Communications system damages are expected primarily with equipment inside communication buildings. Replacing this equipment may take days to weeks.

Charleston County participated in the statewide earthquake drill on March 14, 2016, where the scenario was a 7.7 magnitude earthquake occurring in the same location as the 1886 Charleston earthquake. HAZUS-MH was utilized to estimate the damages due to this earthquake for Charleston County only. The following infrastructure damage estimates (Charleston County only) were derived from this simulation:

Bridges Damaged:	332
Water Facilities Damaged:	44
Waste Water Facilities Damaged:	344
Electrical Power Facilities Damaged:	35
Communication Facilities Damaged:	24
Oil System Facilities Damaged:	8
Anticipated water pipeline leaks:	574
Anticipated waste water pipeline leaks:	1,366

Per this HAZUS-MH simulation, over \$2 billion in transportation-related inventory losses would be expected in Charleston County if an earthquake of this magnitude would occur at this location, given the current transportation infrastructure in the Charleston County area. Appendix F contains a map indicating the location of the anticipated bridge damages in the central portion of Charleston County. As is indicated, several major arteries connecting James Island and West Ashley to Peninsula Charleston would be expected to be damaged should the area experience an earthquake of this magnitude. This study upgraded the collective health of the bridges in Charleston County, with the number of substandard bridges in Charleston County on the top 20-list dropping from 10 to 6, due in large part to the replacement of the old Cooper River bridges with the new Ravenel bridge, and other bridge repairs undertaken on I-26 and U.S. Highway 17. The loss of the use of this transportation inventory would make it difficult, if not impossible, for emergency response agencies to respond to many calls for assistance in the immediate aftermath of an earthquake of this magnitude. An additional potential result of a major earthquake that is not specifically addressed in the HAZUS-MH simulation could be the loss of internet capabilities due to damage to underground/undersea internet fiber optic cables, as occurred throughout Asia after an undersea earthquake near Taiwan. While this type of loss is unlikely to occur in the Atlantic Ocean basin due to more redundancy in the fiber optic cabling network for the internet in this region, it is not out of the question that a major earthquake could also temporarily take out internet service to Atlantic coastal regions, if damages occur to multiple fiber optic transmission lines. (The infrastructure loss potential from an earthquake highlights the need for training area residents through the Community Emergency Response Team (CERT) program to be able to assist their neighbors and be self-sufficient after a large-scale event until the emergency responders are able to resume their normal response activities post-event. Charleston County has been active in training area residents through the CERT program since 2003, and had trained approximately 531 people in this program in Charleston, Berkeley, and Dorchester Counties.

In addition to the anticipated transportation system inventory losses, an estimated \$1.27 billion in inventory losses to utility systems in the Charleston County area would be expected under this earthquake scenario, per HAZUS-MH. Of these estimated inventory losses, 35.1% would be anticipated to occur to potable water systems, 30.6% to waste water systems, 3.3% to natural gas systems, 1.1% to oil systems, 28.0% to electric power systems, and 1.9% to communications facilities.

As was previously discussed in the earthquake “Vulnerable Buildings” section of this plan, earthquake intensity is on a logarithmic scale, so an earthquake with a magnitude of 7.7 has much greater damage potential than, for example, the 7.3 magnitude earthquake that the Charleston area previously experienced in 1886. While an earthquake of this magnitude is not impossible in Charleston, a 7.7 magnitude earthquake is a more damaging earthquake than the largest earthquake that the area has ever experienced in its history. As this HAZUS-MH simulation points out, the Charleston County area could receive catastrophic infrastructure-related damages if the area would experience an earthquake of this magnitude. Consequently, educating the citizenry and owners/operators of infrastructure facilities regarding earthquake safety and mitigation measures is understandably a high priority activity for the area.

7. Hazardous Material Incidents

The infrastructure vulnerability of the Region is greatest for heavily traveled roads or for roads/bridges that serve as the only artery for access to highly populated areas. The shipping port is also vulnerable to hazardous material incidents associated with transportation-related releases. Drainage ways are also potentially vulnerable to liquid transportation-related hazardous material releases since spills may migrate to the roadside drainage channels and be transported to other locations or to the terminus of the drainage channel through these channels. Airborne releases of hazardous materials, whether through transportation-related causes or from stationary storage sources, may also create vulnerability for utility operation facilities in the proximity of the release, depending on the nature and type of materials released. More than half of the railroad tracks in South Carolina do not have electronic systems in place to warn of oncoming trains, so the potential exists for future train accidents and subsequent release of hazardous materials associated with railroad transportation in our State.

8. Winter Weather

Above ground utility lines are potentially vulnerable to failure and/or damage as a result of ice storms. Structural damage occurred to cross-arms and poles where above-ground utility services were present in the area affected by this ice storm. While ice storms are rarer in Charleston County than in the upstate of South Carolina, this event shows evidence of a potential vulnerability of above ground utility service lines in Charleston County, should the area experience a winter storm or a high wind event such as a hurricane or tropical storm.

9. Dam Failure

In the highly unlikely event of a Santee Cooper dam failure, infrastructure damages are possible. However, since a dam failure is not likely to occur without a major earthquake preceding the dam failure, infrastructure damages as discussed in the earthquake section of this plan are likely to accompany damages projected to occur as a result of any dam failure in the Charleston County area.

Santee Dams - Roads/Bridges

In the highly unlikely event of a dam failure, damages to roads or bridges in the projected flood inundation areas are possible. According to the Emergency Action Plan for Dam Failure, a breach of the Santee Dam is projected to result in flood inundation near portions of Highway 45, Highway 857, and Highway 17 and 701 (causeway) within Charleston County. Several of these roads are often used by residents of areas not expected to be flooded by a breach of this dam (e.g. barrier island communities) for evacuation for hurricanes. Consequently, advising residents of alternate evacuation routes from those used for other hazards may be necessary in the event of a breach of the dam. Since these floodwaters could potentially cover portions of these highways for up to 5 days and may contain floating debris, damages to the road surfaces or overpasses could occur as a result of the event. Road clearing operations and inspections will likely be necessary to make the roads passable to vehicular traffic and ensure road and bridge safety once the flooding has ceased.

Pinopolis Dams - Roads/Bridges

Similarly, a breach of the Pinopolis Dam system would also be expected to result in floodwater inundation of roads, specifically near portions of Cainhoy Road, Clements Ferry Road (near I-526), Highway 17 (near Cooper and Ashley Rivers), Ashley River Road, Dorchester Road, Rhett Avenue, N. Rhett Extension, Remount Road (terminus), Highway 78 (near I-26 and Berkeley County Border) and Highway 52 (between I-26 and Redbank Road interchanges) (Emergency Action Plan for Dam Failure, Santee Cooper, 2000, December 29). Several of these roads are often used by residents of areas not expected to be flooded by a breach of this dam (e.g. barrier island communities) for evacuation for hurricanes. Consequently, advising residents of alternate evacuation routes from those used for other hazards may be necessary in the event of a breach of the dam. Any road areas covered with floodwaters could remain so for possibly seven (7) or more days. Debris carried in the flood stream could potentially damage roads or bridges, so flooded roads or bridges will need inspecting and clearing post-event to make these roads passable to vehicular traffic and ensure road and bridge safety.

Shipping Port

The shipping port, being located on the Cooper River, is vulnerable to damage as a result of rising water elevations and floating debris as a result of a breach of the Pinopolis Dam system. Any containers in storage at the port near the Cooper River that are not anchored against flotation could potentially become floating debris in the Cooper River. Docking facilities and container unloading equipment at the port could also potentially be damaged by debris carried in the floodwaters that could result from a breach of this dam. Since debris-laden floodwaters would not be expected to reach the port facilities for 4-5 days, any ships docked at the port should be able to be moved out of the Cooper River to the Atlantic Ocean prior to the floodwaters reaching the port, consequently damages to ships should be minimized. Loss of business at the port for the minimum of seven (7) or more days this facility would be expected to be closed, due to water elevations and debris in the Cooper River as a result of a dam failure, could have a negative effect on the profitability of the shipping port, even if the port does not receive physical plant damages as a result of the projected flooding. The

economic effect of any hazard-induced closure of the port is addressed in the “Economic Impact” section of this plan.

10. Terrorism

Vulnerability of infrastructure to terrorism is most likely where a single damage event is able to cause extensive damage. This vulnerability is probably greatest for facilities without tightly controlled access (e.g. reservoirs, bridges, major arterial roadways, utility transmission lines, etc.).

5.4 - Known Flood Damages

FEMA’s National Flood Insurance Program identifies those repetitive loss properties for which a claim has been filed for flood insurance twice in any ten-year period as Repetitive Loss Properties. When a community participates in the NFIP/ ISO Community Rating System, it becomes a Class “C” repetitive loss community when there are ten or more repetitive loss properties within that community. Mt. Pleasant, for example, joined several other Charleston County communities (Charleston County, City of Charleston, City of Folly Beach, City of Isle of Palms, City of North Charleston, and Town of Sullivan’s Island) and became a class “C” community in 1998 with twenty-one repetitive loss properties at that time. As of May 2013, this number for the Town of Mt. Pleasant increased to twenty-eight, an increase of one repetitive loss home from the previous year. Several drainage projects have been performed or are under evaluation in the Town and in the other communities with repetitive loss properties. The entire Charleston Region currently has 354 properties that have been repetitively damaged by floods throughout the area. These past floods have varied in size and the amount of damage caused. The properties in these repetitive loss areas are considered to be vulnerable to future flooding, particularly associated with hurricanes or tropical or coastal storm systems, due to the proximity of many of these properties to the Atlantic Ocean or tidally influenced water bodies. Many of these repetitive flood loss properties also had one National Flood Insurance Program claim from Hurricane Hugo in 1989, highlighting this vulnerability to hurricanes or other coastal storms. The complete list of the repetitive loss areas is included as Attachment as 5-C to this section.

The repetitive loss areas in the Charleston Region are located in the City of Charleston (78), Unincorporated Charleston County (68), the Town of Mt. Pleasant (20), the City of North Charleston (19), the City of Isle of Palms (15), the Town of Sullivan’s Island (10), the City of Folly Beach (5), the Town of McClellanville (3), and the Town of Seabrook Island (2). Within these areas, there are 46 commercial or multi-family residential and the remaining 284 are single-family residential properties. These commercial or multi-family properties are located in the City of Charleston (38 mostly in the historic district), City of North Charleston (3), the Towns of Mt. Pleasant (1), McClellanville (1) and James Island (1), and Unincorporated Charleston County (1). The remaining government entities in Charleston County that are participants in the National Flood Insurance Program have no repetitive loss properties reported at this time. The government entities that have jurisdictional limits concurrent with a municipality or the county (special purpose district governments (see definition in Preface) and the College of Charleston) have none of their government-owned facilities on the National

Flood Insurance Program list of repetitive flood loss properties. The repetitive flood loss properties in the Region are, however, potentially within the service areas of these special purpose governments (for example, the repetitive flood loss properties in the City of North Charleston are also potentially in the service districts for the Cooper River Parks and Playground Commission and the North Charleston Sewer District and the Charleston Water System). Because of these concurrent jurisdictional boundaries, the special purpose district governments are considered as potentially servicing repetitive loss properties but not in a position to assist property owners with flood loss mitigation measures. [The National Flood Insurance Program participating communities are the government entities that would work directly with the owners of these properties if they were interested in taking measures to alleviate future flooding of their properties.]

FEMA keeps records titled “Policy & Claims Statistics for Flood Insurance” which shows current and historical information on the National Flood Insurance Program (NFIP). Per this database, a total of 10,705 total losses have occurred in the Charleston Regional Area since 1978 when the NFIP was founded. These losses accumulated to a total of \$158,502,916.99 over the 39-year period. Below is a breakdown by jurisdiction:

Table 5-9

Loss Statistics for Charleston County as of 3/31/2017		
Jurisdiction	Total Losses	Total Payments
City of Charleston	5,676	\$ 87,921,596.33
Unincorporated	4,501	\$ 41,514,268.74
City of Isle of Palms	2,531	\$ 62,823,345.71
Town of Mt. Pleasant	1,471	\$ 14,912,578.04
City of Folly Beach	1,172	\$ 15,925,786.86
Town of Sullivan's Island	825	\$ 20,368,985.59
City of North Charleston	420	\$ 8,748,484.74
Town of McClellanville	66	\$ 2,114,430.68
Town of Kiawah Island	65	\$ 166,200.75
Town of Seabrook Island	35	\$ 375,322.85
Town of Meggett	21	\$ 60,792.12
Town of Hollywood	12	\$ 176,563.74
Town of Awendaw	5	\$ 59,575.25
Town of Ravenel	1	\$ 5,066.66
Total Region	16,801	\$ 255,172,998.06

Source: FEMA Policy & Claims Statistics Database, 2017

Most total losses occur in the City of Charleston (peninsula area), as well as the Unincorporated, City of Isle of Palms, Town of Mt. Pleasant, and City of Folly Beach areas, all with at least 1,000 total losses since 1978. These areas have the most known flood damages, either from nuisance flooding due to sea level rise, or more commonly, hurricanes.

5.5 – Past Flood Impacts

Past flood impacts on buildings have become extremely expensive for property owners as indicated in the previous section. Flood levels, unless during the event of a hurricane, were typically fairly shallow (1-5 feet) and limited to rainfall combined with poor drainage in relation to tides. Nevertheless, the impact on buildings has been quite extensive in the past. Flood waters in the Charleston Region have caused siding to bend and warp on structures inundated with water. Older brick homes without hydrostatic vents may experience foundation collapse associated with flooding. Flooding has also resulted in interior damages to structures (e.g. insulation, sheetrock, doors, carpeting, furniture, etc.). In the coastal environment areas of the Region, saltwater presents an additional problem. Saltwater can corrode piping, corrode electrical wiring, and contaminate drinking water wells. Public safety becomes a concern during flooding situations, particularly if the water fails to quickly drain completely after the event. Stagnant water in drainage ditches often fosters mosquitos. Standing water under houses also attracts cockroaches and vermin, posing a health risk and may cause moisture-related problems for the integrity of the structure. These problems have been experienced in the Charleston Region following a local flood.

5.6 – Emergency Warning Needs

There are several situations that could arise, causing the need for evacuation of part or all of the Charleston Region. Small-scale, localized evacuations may be needed as a result of a flood, hazardous material release, fire, or transportation accident. Mass evacuation of the entire Region could be required in the event of the threat of a major hurricane or a damaging earthquake. Charleston County participates in the Emergency Alert System and cable-TV override to provide emergency warning information to all residents in the Charleston County area as needed in emergency situations. If required to evacuate residents from areas potentially subject to flooding or other hazard events, local fire department and police personnel will perform street patrols with their public address systems and/or door-to-door patrols to advise residents of the need to evacuate. Charleston County also has a reverse 9-1-1 system that will be activated to alert residents of the need to evacuate or shelter in place if circumstances warrant.

Charleston County Consolidated Dispatch center is also tied into the County's Warning Point through the warning notification (ALERT) system, and is an 800 MHz based voice radio alert system. The system will allow police to disseminate information about hazardous materials, threatening weather, and major police actions to citizens quickly. In addition, Charleston County and Motorola are looking at ways to redesign the system and add more radio towers. Evacuation warnings are based upon data received from the National Weather Service, the U. S. Army Corps of Engineers, FEMA, the U.S. Geological Survey, and/or other computer assisted modeling of areas potentially subject to damages from a specific hazard event. The current emergency warning system per the Charleston County Emergency Operations Plan is as follows:

1. Pre-disaster evacuation phase:

A. Director, Emergency Management Department

1. Coordinates with all appropriate agencies to ensure emergency operational readiness.
2. Maintains Emergency Operations Center Standard Operating Procedures.
3. Coordinates identification of feasible evacuation routes likely to be available in the anticipated disaster.
4. Coordinates identification of emergency shelters.
5. Coordinates with appropriate agencies in plans for emergency medical care for evacuees.
6. Coordinates with appropriate agencies in plans for mass feeding of evacuees and decontamination of evacuees (if needed).
7. Assists affected agencies with development of evacuation plans. Plans will specifically identify critical facilities such as schools, hospitals, nursing facilities, industries, and places of public assembly when possible.

B. Sheriff

1. Identifies evacuation routes in coordination with EPD.
2. Identifies traffic control points (TCPs) with assistance of local law enforcement officials.
3. Identify potential impediments to evacuation, plan, and alternate/contingency routes to avoid impediments, and report actual impediments to the EOC for removal.
4. Provide training to law enforcement officers concerning the evacuation process and their role at the TCPs.
5. Has representation on the Evacuation Key Alerter Team comprised of Sheriff's Office, City of Charleston Police Department, North Charleston Police Department, and Town of Mt. Pleasant Police Department.

C. Dept. Of Social Services

1. Plan for Emergency Welfare Services
2. Coordinate in identifying emergency shelters with American Red Cross and County Schools and places for emergency pick-up of special needs populations and mass feeding

D. Charleston County School District

1. Plans for Emergency Welfare Services
2. Plans for providing mass transportation

E. Emergency Response Agencies (fire, police, EMS, etc.) (Ristow, 2005, April 15)

1. Coordinates with Director, Emergency Management
2. Plans for securing employees and physical facilities and equipment against injuries or damages
3. Plans for emergency warning of residents

4. Provides training on emergency procedures, including the National Incident Management System (NIMS), to personnel
5. Obtains equipment needed to perform emergency functions

2. Disaster Phase:

A. Director, Emergency Management Department

1. Activates EOC and augments staff and equipment as required
2. Alerts all possible agencies
3. Coordinates with Chief of Transportation the allocation and dispatch of transportation resources.
4. Coordinates information with the Public Information Service.
5. Coordinates evacuation with lead law enforcement agencies.

B. Sheriff

1. As a Key Alerter, notifies assigned law enforcement agencies of evacuation requirements.
2. Staffs traffic control points (TCPS) as assigned and insures that other TCPs are staffed by proper law enforcement agencies.
3. Keeps law enforcement officers at EOC informed of evacuation progress/problems
4. Coordinates law enforcement activities including curfews, coordinates with all out of town law enforcement personnel.
5. Coordinates the provision of security in evacuated area with municipal EOCs, National Guard and others

C. Department of Social Services

1. Coordinates Emergency Welfare Services

D. Charleston County Schools District

1. Supports Emergency Welfare Services
2. Provides mass transportation

E. Emergency Response Agencies (fire, police, EMS, etc.) (Ristow, 2005, April 15)

1. Responds to emergencies, if possible, depending on the nature of the event, following the National Incident Management System (NIMS)
2. Secures employees and physical assets against hazard-related injuries or damages, as needed
3. Assists with emergency evacuation of residents as needed

3. Reentry/Recovery Phase:

A. Director, Emergency Management Department

1. Director, Charleston County EMD coordinates return of evacuees as required through appropriate services and Emergency Council members, municipal

EOCs (MEOCs) and utility companies. EOC recovery team coordinates recovery and donation system with MEOCs.

B. Sheriff

1. Coordinates Law Enforcement activities during return to normal activities including assistance to search and rescue, security, and monitoring of curfew activities.

C. Charleston County Schools District

1. Provides support to Emergency Welfare Services as required.
2. Provides mass transportation for return evacuees as required.
3. Develops standard operating procedures for handling cases where "back to school" shelters are used at night for sleeping quarters.

D. Emergency Response Agencies (fire, police, EMS, etc.) (Ristow, 2005, April 15)

1. Responds to emergencies to the extent possible
2. Reports on damages observed to damage assessment team
3. Assists in clearing roads of obstructions, to the extent possible
4. Maintains equipment needed for emergency response

5.7 – Critical Facilities

The Charleston Region has many critical facilities due to its size. According to the S.C. Emergency Management Division list of critical facilities and with additions from the Members of the Charleston Regional Hazard Mitigation & Public Information Plan Committee, there are 518 critical facilities (excluding bridges and overpasses) in the Charleston County area. The majority of the increase was facilities such as wastewater lift stations, other water distribution systems along with increase of local governmental offices, government-owned facilities (e.g. libraries, parking garages, and museums), shelters, telephone service facilities, residential and nursing care facilities, law enforcement facilities, and fire stations.

Since hurricanes and floods are the hazards considered the highest priority hazards per the respondents to the planning survey used to develop this plan and based on these hazards being the highest frequency events with the greatest property losses experienced in the Region, the category of hurricane at which storm surge flooding is anticipated to occur (S.C. Emergency Management Division electronic storm surge flood maps) has been determined, where available electronically, for the critical facilities listed in the S.C. Emergency Management Division list and those added by the members of the Charleston Regional Hazard Mitigation & Public Information Plan Committee. Critical facilities in the Charleston Region are also potentially vulnerable to wind-related losses associated with hurricanes. This is particularly the care for facilities not protected from wind-borne debris. The following discussion of critical facility vulnerability is based upon the storm surge elevation data as provided in the S.C. Emergency Management Division electronic storm surge maps.

A list of Charleston County Critical Facilities is available upon request:

**Charleston County Government
Building Inspection Services**

Lonnie Hamilton, III Public Services Building
4045 Bridge View Drive, Room A311
North Charleston, SC 29405-7464
(P) 843.202.6930

buildingservices@charlestoncounty.org

Critical Facilities in Category 1 hurricane storm surge flooding areas: Of the critical facilities indicated as being in the Charleston Region per the S.C. Emergency Management Division critical facility list, three hospitals, three law enforcement entities, one EMS station, and one fire station are located in the category 1 storm surge zone. Four court locations and five government offices/emergency operations for four separate local governments are also indicated as being in this storm surge zone. One water pump station, one water treatment facility, one wastewater treatment plant, and ten wastewater lift stations are also listed as being in this zone. There is also one electrical facility listed as being located in this zone. Three media outlets also have broadcast facilities indicated as being in this storm surge zone. Others critical facilities, such as residential care facilities, are also listed as being in this zone. Since storm surge associated with a category 1 hurricane is not expected to exceed 5 feet at the Ocean, and many of the structures listed as being in this storm surge zone are elevated above

the anticipated flood elevation, it is not anticipated that flooding within the critical facility structures will occur during a category 1 hurricane. Minor road flooding near or around the critical facilities closest to the ocean is possible during a category 1 hurricane. The critical facility list provides the storm surge flood zone for critical facilities in the Charleston Region. This storm surge elevation data is available on the S.C. Emergency Management Division internet site.

Critical Facilities in Category 2 hurricane storm surge flooding areas: One additional hospital, one additional television station, 15 additional fire stations, and five additional law enforcement facilities are indicated in the S.C. Emergency Management Division storm surge elevation internet site (2003) as being in locations potentially subject to storm surge flooding in a category 2 hurricane. In addition, eleven local government offices in three separate jurisdictions and two additional Courts are located in this storm surge zone. Four water-distribution system components, twelve wastewater lift stations, two telephone service facilities, and multiple residential care and nursing care facilities are also located in the category 2 storm surge area. Fourteen other government-owned facilities (e.g. libraries, museums, parking garages, etc.) are also indicated as being in the category 2 storm surge area. There are also two nursing homes and multiple residential care facilities listed as being in this storm surge zone. The majority of the critical facilities listed for this zone are located on peninsula Charleston, on barrier islands in Charleston County, or directly adjacent to one of the tidal rivers. Since maximum storm surge elevations anticipated during a category 2 hurricane are 8 feet at the Ocean, and many of these buildings have withstood hurricanes of greater than this magnitude without flood-related damages, it is unlikely that many of these buildings would be flood damaged during a category 2 hurricane. However, for those older pre-FIRM buildings where the floor elevation is not elevated above the current base flood elevation, it is possible minor flooding could occur in lowest levels of these buildings. Since most of these older buildings are masonry construction, any flood damages that may occur are likely to be minor and easily repaired. Heavy equipment and fire apparatus from barrier island locations is also relocated to higher ground in the event of a pending serious hurricane to minimize the possibility of damage to the equipment due to flooding. Valuable artifacts on display or stored at the museum or libraries are also relocated to alternative storage locations in the event of a predicted major hurricane strike to preserve these items for future generations.

Critical Facilities in Category 3 hurricane storm surge flooding areas: One additional hospital, eleven additional fire stations, one additional law enforcement agency, one additional EMS station, and two additional media outlets are indicated as being located in the category 3 storm surge area per the S.C. Emergency Management Division storm surge map internet site. In addition, 20 more local government facilities for 5 separate jurisdictions, six detention facilities, one court facility, and two animal shelters are indicated as being in this zone. Two water system facilities, one wastewater treatment facility, and two electrical system facilities are also indicated as being in the category 3 storm surge area. Three nursing homes and multiple residential care and intermediate care facilities are also listed as being in this zone. Since category 3 hurricanes may have storm surge elevations up to 12 feet, it is possible that flood damage could occur to pre-FIRM critical facilities as a result of a hurricane

of this magnitude. These damages are most likely to critical facilities on barrier islands and in peninsula Charleston. Those facilities most likely to be flood damaged are those of frame construction with finished floor elevations below currently required finished floor elevations. Temporary relocations of equipment and offices may be necessary, particularly from critical facilities on barrier islands and adjacent to tidal rivers, in the event of a hurricane of this magnitude. Nursing homes and residential care facilities located in this hurricane storm surge zone will likely evacuate patients/residents in the event of an anticipated direct strike of a hurricane of this magnitude or greater. It is also possible components of the water and sewer distribution systems, particularly on the barrier islands, could be damaged as a result of a hurricane of this magnitude. Electrical system components could also be damaged by a hurricane of this magnitude.

Critical Facilities in Category 4 hurricane storm surge flooding areas: Since the flood insurance rate map required elevations are based on a category 3 hurricane, critical facilities in Charleston County that are elevated just to the required base flood elevation could receive minor to moderate flooding in lowest floor areas during a category 4 or greater hurricane. Several other pre-FIRM critical facilities and other critical facilities that were constructed in accordance with flood maps where the required elevation for the structures was changed in the late 1980's or early 1990's have finished areas below the currently required base flood elevation. These critical facilities could receive moderate to major flood damage as a result of a category 4 or greater hurricane. Several other additional critical facilities are also listed as being in this storm surge flood zone in the S.C. Emergency Management Division storm surge elevation map database. One shelter, one additional hospital, three additional media outlets, and one additional fire station, and one special purpose district administration building are listed as being in this storm surge zone. One additional nursing home and several other residential care/health services entities are also listed as being in this storm surge zone. In the event of a pending hurricane of this magnitude, these facilities would likely plan to evacuate their residents/patients to more in-land areas on higher ground. Multiple wastewater lift stations are also indicated as being in this storm surge zone.

Critical Facilities in Category 5 hurricane storm surge flooding areas: A catastrophic hurricane of category 5 would likely cause major flood damages to critical facilities located on the barrier islands and in communities bordering the Atlantic Ocean. Other critical facilities in more in-land areas would also likely receive flooding in lowest floor areas since several of these facilities are not elevated above a level where floodwaters could reach in the event of a hurricane of this magnitude. Several additional critical facilities are also listed in the S.C. Emergency Management Division storm surge map database as being located in areas potentially subject to storm surge flooding in the event of a category 5 hurricane strike. One additional hospital, three additional fire stations, two additional law enforcement entity locations, one additional City government office, and one court facility are listed as being in this storm surge zone. One additional nursing home and several other residential care facilities are also in this zone. When Hurricane Floyd was predicted to be a category 5 hurricane directly striking the Charleston area, several hospitals, nursing homes, and local governments with facilities within 10 miles of the Ocean evacuated their normal operating locations and relocated equipment and records to more in-land areas on higher ground. It is

possible that many critical facilities could be damaged to the extent that their operations may need to temporarily relocate to alternative facilities post-event of a hurricane of this magnitude.

The survey distributed during 2017 queried jurisdictional respondents as to their perception of the vulnerability of the critical facilities in the Region by hazard type. The analysis of the questionnaires indicated that the critical facilities in the Region are most vulnerable to earthquakes, followed by hurricanes, terrorist incidents, flooding, tornadoes, sea level rise, hazardous materials, tsunamis, wildfires, and dam failures, in this order. This indicates that earthquakes should be considered as events to which the critical facilities in the Region are potentially highly vulnerable. Summary information regarding anticipated earthquake damages to critical facilities are discussed in the building vulnerability earthquake subsection of this section of this plan. Seismic resistance analyses of critical facilities, particularly those constructed of unreinforced masonry or those constructed prior to 1985 (year during which building codes including seismic provisions were routinely enforced throughout the Region), is recommended to determine structures that may be candidates for seismic retrofits.

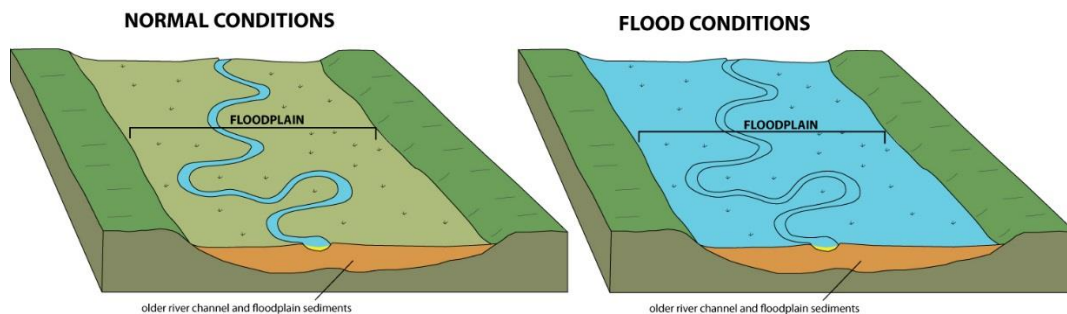
Local governments within Charleston County recognize that it is not possible to avoid placing critical facilities in hurricane-prone areas, since these facilities are needed to provide essential services, such as responding to fires and/or providing medical assistance and/or law enforcement in an expedient manner in all areas of the County. Consequently, steps have been taken at many of the critical facilities located in areas potentially subject to damage due to hurricanes to reduce the damage potential to the structures to the extent feasible and/or prepare for expedient reopening of facilities post-event. All new critical facilities constructed will be designed to withstand hazards to which they may be subjected, and will include provisions for emergency operations post event. Multiple local fire stations (Awendaw, Mt. Pleasant, St. John's Fire District, North Charleston, City of Charleston, Sullivan's Island) have also been retrofitted with hurricane panels to protect openings from damage associated with wind-borne debris. Charleston County, for example, has constructed its new critical facilities with floor levels higher than required, and constructed these to withstand wind speeds associated with the worst-case hurricanes.

Many of the critical facilities in the historic district of Charleston have been exposed to multiple serious hurricanes throughout their history, and are of masonry construction that has withstood exposure to these events. The City of Charleston also generally installs plywood shutters on glazed openings of its buildings in the most vulnerable locations of the Peninsula in the event of a potential hurricane strike, to minimize wind-related damages associated with hurricanes. While it is possible that these historic facilities may receive flood damages as a result of severe hurricane threats, the damages should be repairable in a reasonable time period post-event. Since most of these local government facilities, particularly on the Peninsula of Charleston, are for jurisdictions with multiple buildings located throughout the County, alternative locations for temporary operation are also available, if needed, while repairs to these facilities are performed. Earthquake damages are however, also a possibility for historic government buildings and government buildings constructed prior to building codes required design to withstand earthquakes.

Local governments with utility distribution systems also have plans to enhance the hazard-resistance of their critical assets. For example, the North Charleston Sewer District has plans to install an additional aeration tank and primary clarifier at their treatment plant. The District intends to design these facilities to withstand hazard events, such as floods, earthquakes, high winds, wildfires, and so forth, and to include provisions for emergency operations post-event at these facilities.

5.8 – Natural and Beneficial Functions of Floodplains

The Charleston Region is comprised of 68% of floodplains, meaning that the functions of floodplains affects daily life tremendously in addition to the citizens and development in turn affects the floodplains. This relationship can be mutually beneficial or destructive. Understanding the natural benefits and functions of floodplains is crucial to be able to protect them and make educated decisions of hazard mitigation and further community development. Below is an illustration showing how floodplains operate:



The benefits and functions of a floodplain include flood protection, improved water quality, recharged aquifers, improved wildlife habitat, recreational industries (like kayaking and fishing), and sustainable agriculture (Source: *The Nature Conservancy*). See below for more:

Some Natural Functions of Floodplains

WATER RESOURCES

Natural Flood and Erosion Control

- Provide flood storage and conveyance
- Reduce flood velocities
- Reduce peak flows
- Reduce sedimentation

Water Quality Maintenance

- Filter nutrients and impurities from runoff
- Process organic wastes
- Moderate temperature fluctuations

Groundwater Recharge

- Promote infiltration and aquifer recharge
- Reduce frequency and duration of low surface flows

BIOLOGICAL RESOURCES

Biological Productivity

- Rich alluvial soils promote vegetative growth
- Maintain biodiversity
- Maintain integrity of ecosystems

Fish and Wildlife Habitats

- Provide breeding and feeding grounds
- Create and enhance waterfowl habitat
- Protect habitats for rare and endangered species

- A Unified National Program for Floodplain Management
FEMA-248 (1994)

The Charleston Region recognizes that while there has been positive progress in quality water management, there is growing evidence indicating that urbanization and other land uses adversely impact the quality of marine waters. The Charleston County Comprehensive Plan identifies a number of actions that the Charleston Region may take in order to enhance natural and beneficial functions. Several of these functions are as follows:

1. Continue to coordinate with the State to complete research projects and develop water quality management strategies for the Charleston Harbor and other local rivers and estuaries.
2. Explore options for developing a regional geographic information system (GIS) water quality database.
3. Work with all municipalities and SC DHEC to implement an ongoing regional water quality monitoring program.
4. Support the program by SC DHEC to reduce nonpoint source pollution from new development.
5. Consider revision of local storm water standards to require a “zero degradation” approach to storm water management.
6. Require retention of vegetated buffers along shorelines.

The Charleston Region is one of the most biologically rich and diverse habitat areas on the Atlantic Coast. The Charleston area is a temporary or permanent home to rare whooping cranes, endangered woodpeckers, rare piping plovers, wood storks, bald eagles, ducks, pelicans, royal terns, and other waterfowl. Charleston County is also home to the rare red wolf, bear, deer, wild turkey, and other wildlife. The number of wildlife management, habitat enhancement, and special conservation projects underway is significant. The Charleston Regional Hazard Mitigation Plan supports several of these efforts:

1. Promote intergovernmental coordination to protect the Regions’ aquatic habitat.
2. Support the management efforts of SC DNR and SC DHEC to protect the Regions’ spawning and nursery habitat and migratory routes for aquatic life.
3. Encourage SC DNR to develop resource management strategies to sustain shellfish resources.
4. Undertake a number of measures to protect the habitat area of species as designated as federally endangered, threatened, or locally identified as rare.
5. Implement measures to preserve farm and forestland open space.

Coordinate with various public and non-profit interests regarding the development of wildlife habitat management plans for specific area of the Region. The Charleston Region also recognizes the importance of preserving farm and forestland, as well as the public and private stewardship of farmland soils and forest resources. This plan includes a number of activities to support this effort:

1. Promote voluntary stewardship of farmland soils.
2. Promote voluntary compliance by private, non-industrial forest resource. Owners with S.C.’s Best Management Practices for Forestry and with the American Forests and Paper Association Sustainability Initiative.
3. Implement a number of measures that will minimize conflicts between forest resource producers and private landowners residing near forest resource lands.

4. Work with the National Forest Service to address management issues at the Francis Marion National Forest.

Many present and future businesses of the Charleston Region are dependent upon groundwater to meet domestic, commercial, and industrial water needs. From its research, SC DHEC has concluded that the aquifer systems of the Coastal Plain contain significant groundwater if used wisely, but that it is foreseeable that the resource will be stressed by the demands of a growing population. The Charleston Region recognizes and supports the various activities to take a proactive approach to resolving this issue:

- Support research documenting groundwater resources in the Region and development of a related GIS database.
- Participate with SC DHEC and the Coastal Plain Capacity Use Task Force in future efforts to manage groundwater resources in the South Carolina Coastal Plain.
- Consider Regional actions that would facilitate groundwater use reporting to SC DHEC:

The County of Charleston Comprehensive Plan also discusses the coastal floodplain within Charleston County, specifically indicating the following activities for conservation, use or protection of the floodplains:

- "Prevent disturbances to areas that provide critical flood water storage and filtration functions, including estuarine and palustrine wetlands
- "Prevent excessive clearing and disturbance to natural upland vegetation within the floodplain"
- "Minimize the alteration of natural drainage patterns within the floodplain"

These activities are fully consistent with the activities of the Charleston Regional Hazard Mitigation Plan pertaining to the preservation of natural resources and beneficial functions of floodplains. In addition, many floodplain and wetland areas in Charleston County have previously been set aside and preserved as natural botanical areas (County of Charleston Comprehensive Plan).

Many jurisdictions within Charleston County, including the County and municipalities that contract with them for storm water services, the Town of Mt. Pleasant, the City of Charleston, and the City of North Charleston have enterprise funding systems in place to provide resources needed for implementation and enforcement of water quality and quantity regulations to enhance water quality in the Region. Many of the local jurisdictions have also undertaken storm water or watershed master planning development or updates to address storm water run-off needs. For example, Charleston County undertook a storm water master planning initiative during 2007-2008 to develop recommendations for development trends and storm water systems throughout the County. This planning initiative is fully consistent with the goals and activities discussed in this Charleston Regional Hazard Mitigation Plan, and applicable sections of this plan have been considered as a part of the storm water master planning process. Recommendations from the storm water master planning initiative are also consistent with recommendations included in the Charleston Regional Hazard Mitigation Plan and action plans for applicable government entities.

5.9 – Development and Population Trends

According to U.S. Census Bureau data, the combined total population of Charleston County was 396,484, which is a 14.5% increase from 2010 to 2016. In addition, three of the five most populous incorporated places in South Carolina are in Charleston County. These areas are the City of Charleston with a population of 120,083 (24% growth rate since 2000 census), the City of North Charleston with a population of 97,471 (22.4% growth rate), and the Town of Mt. Pleasant with a population of 67,843 (42.5% growth rate) (2010 Census Data).

Since 1970 Charleston County has become an increasingly urban county, as determined by the U.S. Bureau of the Census. In 1970 approximately 18.2% of the population resided in rural areas. As a result of development and movements by rural residents, the proportion of the County's population residing in rural areas has declined to approximately 11.9%.

The total population of Charleston County was projected to grow to 387,355 people by 2015. With the estimated population at over 396,000, this showcases how fast growing Charleston County is as it exceeded the expectations from the 2010 U.S. Census. Compared to the number of residents in 1990, this represents a 31% growth in population over 25 years. This projection represents an extension of established demographic trends in the Region. The projection includes growth of the student population, based on long-range plans of local colleges and universities.

The Mt. Pleasant/East Cooper area is projected to be the fastest growing area in the Region, with a 98% population growth projected to occur between 1990 and 2015. The slowest growing areas are projected to be North Charleston, the Charleston Peninsula, and the rural East community. The current County of Charleston Comprehensive Plan, in general, encourages the maintenance of rural uses in areas that are currently rural in nature, and future development in the more highly developed areas of the County. The following Table 5-9 provides estimated population growth estimates provided by the local governments within Charleston County.

Table 5-10

Estimated Population Trends 2004-2024 in Charleston County, SC						
Jurisdiction	Decline	Remain the Same	Increase less than 1%	Increase 1-10%	Increase more than 10%	Other
Town of Awendaw					X	
City of Charleston					X	
Charleston County (Unincorporated)				X		
Charleston Co. Parks & Rec					X	
Charleston CPW					X	
Cooper River Parks				X		
City of Folly Beach				X		
Town of Hollywood					X	
Town of Lincolnville				X		
City of Isle of Palms				X		
James Island PSD				X		
Town of Kiawah Isl.					X	
Town of McClellanville					X	
Town of Meggett					X	
Town of Mt. Pleasant					X	Estimated population in 2005: 100,000
Mt. Pleasant Water					X	
City of N. Charleston				X		
N. Charleston District	X					
N. Charleston Sewer District				X		
Town of Ravenel				X		
Town of Rockville				X		
St. Andrews Parks & Rec						Some growth - depends on rate of annexation
St. Andrews PSD					X	
St. John's Fire Dist.					X	
St. Paul's Fire Dist.						Population growth to increase with restrictions per Chas. Co. Development Regulations
Town of Seabrook Island					X	
Town of Sullivan's Island		X				

In addition to area-wide efforts to address traffic-related issues associated with growth in the Charleston County area, several communities in the Charleston County area also have ordinances designed to protect their historic building inventory from demolition or have taken other steps to preserve their historical assets.

The local governments within Charleston County are diverse in many ways concerning the amount of land available for development within their jurisdictional limits. For example,

areas such as the Peninsula part of the City of Charleston and the Towns of Rockville and Seabrook Island anticipate only limited future development due to the available land being primarily already built-upon. However, other areas, such as the Daniel Island part of the City of Charleston, and the Towns of Hollywood and the portions of Unincorporated Charleston County within the service districts of the St. John’s Fire District and the St. Paul’s Fire District have ample land available for development, so high levels of future development are expected in these areas, subject to limitations from the Charleston County Development Regulations and the Charleston County Comprehensive Plan. Other local governments, such as the Towns of Kiawah Island, McClellanville, and Meggett anticipate moderate levels of future development, since they have some land still available for future development. Table 5-10 summarizes the anticipated future development trends for the local governments within the Charleston Region, as provided by the local government entities participating in the Charleston Regional Hazard Mitigation Plan:

Table 5-11

Anticipated Future Development Trends Within the Charleston Region				
Jurisdiction	Limited future development expected	Moderate levels of future development expected	High levels of future development expected	Other
Town of Awendaw			X	
City of Charleston	X (Peninsula area)	X (W. Ashley, John's Island, James Island)	X (Daniel Island, Cainhoy)	
Charleston County (Unincorporated)				Charleston County Comprehensive Plan places limits on amount of development in rural areas. Future development trends are also subject to rate of annexations by municipalities.
Charleston Co. PRC			X	
Charleston CPW		X		
Cooper River Parks		X		
City of Folly Beach	X			
Town of Hollywood			X	
Town of Lincolnville		X		
City of Isle of Palms	X			
James Island PSD		X		
Town of Kiawah Island		X		
Town of McClellanville		X		
Town of Meggett		X		
Town of Mt. Pleasant			X	
Mt. Pleasant Water		X		
City of N. Charleston		X		
N. Charleston District	X			
N. Charleston Sewer District		X		
Town of Ravenel				The Town has large areas of undeveloped land and is anticipating quality of development rather than quantity of development.
Town of Rockville	X			
St. Andrews Parks				Do not have plans to develop, however, ½¢ sales tax may provide funding for expansion.
St. Andrews PSD	X			
St. John’s Fire District			X	
St. Paul’s Fire District				Land available, but restricted by Chas. Co. Comprehensive Plan & Land Use Development Regulations.
Town of Seabrook Island	X			
Town of Sullivan’s Island	X			

5.10 – Economic Impact

The impact of a hazard event upon the community, economy, and tax base is directly dependent upon the severity of the event. A situation such as Hurricane Hugo with a 20-foot storm surge has the potential impact of loss of life, particularly if hospitals are not accessible due to debris obstructing the transportation arteries or if residents in low lying areas refuse to evacuate when ordered to do so. Loss of property, utility service, and personal security also has a direct impact on the ability of the businesses to conduct commerce. Businesses must be prepared to contend with a reduction in the number of employees who are able to work, even if their physical facilities are able to continue operation, if the homes of their employees are severely damaged as a result of a hazard event.

The effect on the overall economy after a large-scale disaster can be quite dramatic. A large part of the economy of the Charleston Region depends on tourist dollars. Since the historic buildings of the City of Charleston represent one of the major tourist attractions of the Charleston area, the loss of the historic structures through damages associated with a hazard event could potentially compound the post event decline in tourist visits, if the tourists no longer have a unique reason to select Charleston as their tourist destination. The most likely hazard event to result in this type of catastrophic loss is a major earthquake. Potential economic effects of a major earthquake are separately addressed in this plan at the end of this section. A major hurricane strike would also likely result in catastrophic losses to some historic structures on the Charleston peninsula. A hurricane of the magnitude of Hurricane Hugo striking south of Peninsula Charleston in such a manner as to place the peninsula in the worst quadrant of the hurricane would likely result in greater losses due to flooding and wind-related damages than Hurricane Hugo generated. The longer the clean-up and repair period after a hazard event and the greater the extent of the damage to the historic district structures, the more devastating these types of events are likely to be upon the tourist-related service sector of the economy.

Since small businesses are particularly vulnerable to closure after a major natural hazard event (nationally 30-40% of small businesses do not reopen after a major natural hazard event), initiatives to prepare small businesses for prompt return to operation post-event may

Harbor deepening projects are crucial to economic development of the Southeast and the nation as a whole. According to the Post and Courier, 90 percent of U.S. global trade flows by water carriage. The State Ports Authority chief Jim Newsome called the Panama Canal expansion a “3 million container opportunity” for Charleston. The completion of the deepening of the Panama Canal allows larger ships pass through which require deeper ports to operate in.

According to the Comprehensive Seismic Risk and Vulnerability Study for the State of South Carolina a HAZUS-based study produced for the South Carolina Emergency Management Division, an earthquake of the magnitude of the Charleston earthquake of 1886 (7.3 on the Richter Scale) would be expected to cause approximately \$10.9 billion in economic losses in the Charleston, Berkeley, and Dorchester County areas. These losses include building losses, direct business interruption losses, and damage to transportation and utility systems. This

study recommended further study of the short- and long-term effects of a major earthquake on tourism since the Charleston-area economy is so dependent upon tourism-related businesses. This study also suggests that if an earthquake occurs during high tourist occupancy times the demands on emergency response organizations will likely be greater than the study currently predicts. The study already predicts that an estimated 60,000 people in the State of South Carolina will require short-term shelter and an additional 70,000 households would be displaced as a result of an earthquake of this magnitude. An earthquake event of this magnitude during high tourist occupancy times could precipitate the need for even more shelter space.

The Moore School of Business of The University of South Carolina September 14, 2015 South Carolina State Ports Authority (SCPA) Economic Impact Study clearly defined the economic impact of closing the Port System for any disaster. Approximately 11.9 percent of the statewide economic impact associated with the SCPA is concentrated within the Lowcountry Region of South Carolina. This specifically translates annually into 6.3 billion in total economic output, nearly 23,000 jobs and \$1.2 billion in labor income. It also implies that about 1 out of every 20 jobs in the Lowcountry can be attributed to the SCPA. The manufacturing industry, which represents the primary user base of the SCPA port facilities, encompasses roughly 7.7% of the Lowcountry's economy. Based on these figures, any cessation of port operations would result in a daily economic loss from the Lowcountry of \$17.3m in revenue with over \$3 million in labor income.

5.11 - Resiliency to Hazards

The ability to recover quickly after a disaster is imperative, but having a plan in the light of disasters is arguably how to make this come to fruition. Resiliency is an integral part of hazard mitigation. It is important for jurisdictions of all sizes, like those found in the Charleston Region, to incorporate resiliency issues, such as preparedness, adaption, mitigation, and response & recovery, into planning documents like a Comprehensive Plan. In the 2017 survey, questions about resiliency were asked to gauge what steps jurisdictions were taking independently to further strengthen the resiliency of the area. Table 5-12 lists all of the questions asked about resiliency in the survey. Many of the jurisdictions in the area do this through the protection of natural benefits, infrastructure maintenance programs, business disruption mitigation planning/business continuity planning, policies to limit development in floodplains, and beach management plans.

Many of these resiliency issues come to the surface due to experiences from disasters such as hurricane threats and flooding events. Some specific issues on preparedness of the jurisdictions in the area learned from these hazards are how flooding affects access to critical facilities such as hospital emergency rooms, how mutual aid agreements are helpful in time of disaster, and how understanding the policy and procedures for a hazard is crucial administratively. Some other lessons learned through hazard mitigation are how preemptive communication to high risk, repetitive loss areas help with preparedness; how identifying challenges to specific regions helps to better allocate resources and educate residence on

preparation; how cross-checking contractors periodically can help improve the stability of infrastructure; and how quick communication across jurisdictions is valuable.

With these lessons learned, there comes challenges to then applying them to the policy and procedures before the next disaster strikes. These challenges include updating older infrastructure (especially prevalent in the historic district), public education, resource allocation (both short and long term), funding sources/financial restraint, cooperation from within and between jurisdictions, technological shortcomings, and high turnover of elected and appointed government positions (hard to achieve continuity).

The importance of participating in emergency operation center activities is advantageous to jurisdictions by having a first-hand account disaster preparedness and the intricacies of coordination in the time of adversity. The survey asked jurisdictions what their participation level was in EOC duties. Their responses varied from only to call in incidents to we try but are limited due to staff resources to we attend training events and are present in the EOC during storm events. Some jurisdictions need a higher level of involvement due to their size, risk level, and/or staff capabilities.

Moving up from a community scale to a regional scale, these scopes have different priorities and things to consider. The 2017 survey requested some feedback from the local jurisdictions up to the regional scale. Some suggestions to the County are to increase communication between county and city officials, increase collaboration efforts, state clear expectations from both sides, increase technical assistance on hazard mitigation and resiliency efforts, increase pursuit of federal grant funding, more consistency on regional policies for disaster response, and increasing response time by emergency services to fix infrastructure post disaster.

Some relevant projects being conducted by the jurisdictions to build resistance to hazards range from educational programs to increasing use of social media. Some of these projects link back to lessons learned from experiences with hazards. For example, one jurisdiction has several FEMA-sponsored mitigation programs in place to reduce the impact of flooding and hurricanes to medical critical care emergency operations and increase the resiliency of their physical plant. Proactive asset management by increasing types of infrastructure that are being inspected for vulnerability is another relevant project. Other notable projects are increasing freeboard requirements, introducing a sea level rise strategy, enforcing enclosure restrictions below elevated structures, and implementing roundtable discussions on developing a sustainable community.

Table 5-12 Resiliency Questions Posed to Jurisdictions

Resiliency Questions Posed to Jurisdictions
Does your organization include issues of resiliency (e.g. preparedness, adaptation, mitigation, response & recovery) in your planning documents, such as the Comprehensive Plan, or in other planning efforts? If so, what are some examples of these policies?
Reflecting upon recent hurricane threats and flooding events, what has your jurisdiction/organization learned from a hazard preparedness standpoint from these events? Are some areas of preparedness weaker than others in your jurisdiction?
What challenges does your organization face when it comes to incorporating disaster resiliency into your planning or implementation efforts?
Does your jurisdiction/organization participate in emergency operations center activities or command? Please explain your participation level.
What could be done at the regional scale to mitigate impacts to disasters and disruptions? This could include providing technical assistance, setting regional policies, providing a forum for peer sharing, etc. Is your organization currently involved in any regional efforts?
Please share information about relevant projects related to building resilience to hazards (e.g. preparedness, adaptation, mitigation, response, and recovery efforts) that your community is undertaking (e.g. educational programs, risks programs, increased freeboard requirements, etc.).

Attachment 5-A: Largest Private Sector Employer in Charleston Metro Area
December 2016

Largest Private Sector Employers in the Charleston Metro Area		
Company	Product or Service	Employees
The Boeing Company	Aircraft manufacturing	8,000
Roper St. Francis Healthcare	Roper St. Francis and Bon Secours St. Francis Hospitals	5,500
Trident Health System	Hospital system	2,500
Walmart Inc.	Retail merchandise	2,300
Kiawah Island Golf Resort/The Sanctuary at Kiawah	Resort	1,500
SAIC	System engineering and integration services	1,500
Bi-Lo Stores	Retail grocery stores	1,500
Publix Supermarkets	Retail grocery stores	1,200
Verizon Wireless	Inbound/outbound call center for communications company	1,200
KapStone Charleston Kraft LLC	Manufacture specialty paper & packaging	1,000
IHG (Intercontinental Hotels Group)	Inbound reservation center for Holiday Inn, Holiday Inn Express, Staybridge & Candlewood Suites hotels	1,000

Source: Center for Business Research, Charleston Metro Chamber of Commerce, December 2016

Attachment 5-B: Largest Public Sector Employer in Charleston Metro Area
December 2016

Largest Public Sector Employers in the Charleston Metro Area		
Company	Product or Service	Employees
Joint Base Charleston	Area U.S. military commands	22,000
Medical University of South Carolina	Hospital, post-secondary education, research	13,000
Charleston County School District	Education/public schools	6,500
College of Charleston	Higher education	2,200
Charleston County Government	Local government	2,100
U.S. Postal Service	Postal service	2,000
City of Charleston	Local government	1,700

Source: Center for Business Research, Charleston Metro Chamber of Commerce, December 2016

Attachment 5-C: Repetitive Loss Areas within the Charleston Region

Repetitive Loss Areas				
Street	City, State	Zip Code	Jurisdiction	PSD / FD
5th Avenue	Charleston, SC	29407	Chas. County	
Alonzo Rouse Road	Mt. Pleasant, SC	29466-8562	Chas. County	
Arlington Drive	Charleston, SC	29407	Chas. County	St. Andrews
Auburn Drive	Charleston, SC	29406-9049	Chas. County	N. Charleston
Awendaw Landing Road	Awendaw, SC	29429-5957	Chas. County	
Belgrade Ave	Charleston, SC	29407-5715	Chas. County	
Bolton Road	Charleston, SC	29407	Chas. County	St. Andrews
Bonanza Road	Charleston, SC	29414-5104	Chas. County	
Boone Hall Drive	Charleston, SC	29407-3006	Chas. County	
Bradford Avenue	Charleston, SC	29412-4001	Chas. County	James Island
Burnham Court	Charleston, SC	29414-6870	Chas. County	
Butternut St	Charleston, SC	29414-6024	Chas. County	
Capri Drive	Charleston, SC	29407-7606	Chas. County	St. Andrews
Catawba Road	Charleston, SC	29414-5527	Chas. County	
Cessna Ave	Charleston, SC	29407-6808	Chas. County	
Cestus Lane	Charleston, SC	29414-6246	Chas. County	
Chaplins Landing Road	Meggett, SC	29449-5834	Chas. County	
Christian Road	Charleston, SC	29407-3042	Chas. County	
Church Creek Drive	Charleston, SC	29414-6404	Chas. County	
Clearview Drive	Charleston, SC	29412-4511	Chas. County	
Coker Avenue	Charleston, SC	29412	Chas. County	
Cynthia Lane	Charleston, SC	29407-7607	Chas. County	St. Andrews
D Woods	Kiawah Island, SC	29455-5759	Chas. County	
Debbenshire Drive	Charleston, SC	29407	Chas. County	St. Andrews
Deene Street	Charleston, SC	29412	Chas. County	
Dobester Avenue	Charleston, SC	29412-9106	Chas. County	James Island
Doncaster Drive	Charleston, SC	29414	Chas. County	
Etiwan Avenue	Charleston, SC	29414	Chas. County	St. Andrews
E Westchester Drive	Charleston, SC	29414	Chas. County	
Fickling Hill Road	Johns Island, SC	29455-8901	Chas. County	
Flamingo Drive	Charleston, SC	29414-5430	Chas. County	
Folly Road	Charleston, SC	29412-3922	Chas. County	James Island
Forest Lakes Blvd.	Charleston, SC	29414-5963	Chas. County	St. Andrews
Glendale Drive	Charleston, SC	29414-6428	Chas. County	St. Andrews
High Hammock Rd A	Seabrook Island, SC	29455	Chas. County	
High Hammock Rd B	Seabrook Island, SC	29456	Chas. County	
Honeysuckle Lane	Charleston, SC	29412-9712	Chas. County	
Howle Ave	Charleston, SC	29412-2421	Chas. County	
Hutton Place	Charleston, SC	29407-3506	Chas. County	
Limehouse Street	Charleston, SC	29401-2305	Chas. County	
Manigault Place	Charleston, SC	29407-3014	Chas. County	
Marilyn Drive	N. Charleston, SC	29418-5853	Chas. County	
Marshland Drive	Charleston, SC	29414-6214	Chas. County	
Mowler Court	Charleston, SC	29414-7361	Chas. County	
Old Ferry Road	Johns Island, SC	29455	Chas. County	St. Andrews
Old Pond Road	Johns Island, SC	29455-3201	Chas. County	
Pauline Avenue	Charleston, SC	29412-4041	Chas. County	James Island
Pelican Flight Drive	Isle of Palms, SC	29451	Chas. County	

Preston Road	Charleston, SC	29412-9130	Chas. County	
Rantowles Court	Ravenel, SC	29470-5304	Chas. County	
Riverland Drive	Charleston, SC	29412-2722	Chas. County	
Saint Julian Road	Charleston, SC	29405	Chas. County	N. Charleston
Sam Rittenberg Blvd.	Charleston, SC	29407-4621	Chas. County	
Savage Road	Charleston, SC	29414-5652	Chas. County	
Seaward Drive	Charleston, SC	29412-8942	Chas. County	James Island
Shelley Road	Charleston, SC	29407-7022	Chas. County	
Spur Street	N. Charleston, SC	29405-6825	Chas. County	
Sunnyvale Avenue	Charleston, SC	29414-6025	Chas. County	
Swift Avenue	Charleston, SC	29407-6858	Chas. County	
Taborwood Circle	Charleston, SC	29407-4820	Chas. County	
Tennent Street	Charleston, SC	29412-4528	Chas. County	
Trent Street	Charleston, SC	29414-5556	Chas. County	St. Andrews
Two Loch Place	Charleston, SC	29414-6883	Chas. County	
Waterloo Street	Charleston, SC	29412-5058	Chas. County	James Island
Wedgepark Road	Charleston, SC	29407-7836	Chas. County	
Wellington Drive	Charleston, SC	29412	Chas. County	
Woodland Shores Road	Charleston, SC	29412-2427	Chas. County	James Island
Yale Drive	Charleston, SC	29412	Chas. County	James Island
Aiken Street	Charleston, SC	29401	City of Chas.	
Arabian Drive	Charleston, SC	29407	City of Chas.	
Ashley Avenue	Charleston, SC	29401	City of Chas.	
Ashley Hall Road	Charleston, SC	29401	City of Chas.	
Balsam Street	Charleston, SC	29407	City of Chas.	
Barre Street	Charleston, SC	29401	City of Chas.	
Beaufain Street	Charleston, SC	29401	City of Chas.	
Bennett Street	Charleston, SC	29401	City of Chas.	
Broad Street	Charleston, SC	29401	City of Chas.	
Broughton Street	Charleston, SC	29407	City of Chas.	
Brownswood Road	Johns Island, SC	29464	City of Chas.	
Bull Street	Charleston, SC	29401	City of Chas.	
Burningtree Road	Charleston, SC	29412-2630	City of Chas.	
Calhoun Street	Charleston, SC	29401	City of Chas.	
Capri Drive	Charleston, SC	29407	City of Chas.	
Cestus Lane	Charleston, SC	29407	City of Chas.	
Chadwick Drive	Charleston, SC	29407	City of Chas.	
Church Street	Charleston, SC	29401	City of Chas.	
Colleton Drive	Charleston, SC	29407	City of Chas.	
Curtiss Avenue	Charleston, SC	29401	City of Chas.	
Debbenshire Drive	Charleston, SC	29407-3010	City of Chas.	
Dolmaine Drive	Charleston, SC	29407	City of Chas.	
East Bay Street	Charleston, SC	29401	City of Chas.	
Endo Street	Charleston, SC	29407	City of Chas.	
Fairway Drive	Charleston, SC	29412	City of Chas.	
Falkirk Drive	Charleston, SC	29407-6513	City of Chas.	
Fenwick Drive	Charleston, SC	29407	City of Chas.	
Fishburne Street	Charleston, SC	29401	City of Chas.	
Fleming Road	Charleston, SC	29412	City of Chas.	
Franklin Street	Charleston, SC	29401-1909	City of Chas.	

Gadsden Street	Charleston, SC	29401	City of Chas.	
Gibbes Street	Charleston, SC	29401	City of Chas.	
Gordon Street	Charleston, SC	29401	City of Chas.	
Hasell Street	Charleston, SC	29401	City of Chas.	
Heathwood Street	Charleston, SC	29407	City of Chas.	
Juniper Street	Charleston, SC	29407	City of Chas.	
King Street	Charleston, SC	29403	City of Chas.	
Lamboll Street	Charleston, SC	29401	City of Chas.	
Market Street	Charleston, SC	29401	City of Chas.	
Meeting Street	Charleston, SC	29401	City of Chas.	
Montague Street	Charleston, SC	29401	City of Chas.	
Mowler Court	Charleston, SC	29414-7361	City of Chas.	
Murray Boulevard	Charleston, SC	29401	City of Chas.	
Nicholson Street	Charleston, SC	29407	City of Chas.	
North Hanover Street	Charleston, SC	29401	City of Chas.	
North Market Street	Charleston, SC	29401	City of Chas.	
Nunan Street	Charleston, SC	29401	City of Chas.	
Oak Forest Drive	Charleston, SC	29407	City of Chas.	
Olivia Drive	Charleston, SC	29418	City of Chas.	
Ophir Drive	Charleston, SC	29407	City of Chas.	
Orange Grove Road	Charleston, SC	29407	City of Chas.	
Pitt Street	Charleston, SC	29401	City of Chas.	
Pratt Street	Charleston, SC	29401	City of Chas.	
President Street	Charleston, SC	29401	City of Chas.	
Queen Street	Charleston, SC	29401-1950	City of Chas.	
Rebellion Road	Charleston, SC	29407	City of Chas.	
Rutledge Avenue	Charleston, SC	29401	City of Chas.	
Saint Dennis Street	Charleston, SC	29407	City of Chas.	
Saint Phillip Street	Charleston, SC	29401	City of Chas.	
Sandcroft Drive	Charleston, SC	29407	City of Chas.	
Savage Street	Charleston, SC	29401	City of Chas.	
Shoreham Road	Charleston, SC	29412-9364	City of Chas.	
Smith Street	Charleston, SC	29401	City of Chas.	
South Battery Drive	Charleston, SC	29401	City of Chas.	
South Market Street	Charleston, SC	29401	City of Chas.	
South Sherwood Drive	Charleston, SC	29407	City of Chas.	
South Street	Charleston, SC	29401	City of Chas.	
State Street	Charleston, SC	29401	City of Chas.	
Sunnyvale Drive	Charleston, SC	29407	City of Chas.	
Thomas Street	Charleston, SC	29401	City of Chas.	
Tradd Street	Charleston, SC	29401	City of Chas.	
Trapman Street	Charleston, SC	29401	City of Chas.	
Vanderhorst Street	Charleston, SC	29401	City of Chas.	
Water Street	Charleston, SC	29401	City of Chas.	
Wentworth Street	Charleston, SC	29401	City of Chas.	
Windermere Boulevard	Charleston, SC	29407	City of Chas.	
Wolk Drive	Charleston, SC	29414	City of Chas.	
Yew Street	Charleston, SC	29407	City of Chas.	
East Arctic Avenue	Folly Beach, SC	29439	Folly Beach	
East Ashley Avenue	Folly Beach, SC	29439	Folly Beach	

West Ashley Avenue	Folly Beach, SC	29439	Folly Beach	
East Cooper Avenue	Folly Beach, SC	29439	Folly Beach	
East Indian Avenue	Folly Beach, SC	29439	Folly Beach	
19th Avenue	Isle of Palms, SC	29451	IOP	
24th Avenue	Isle of Palms, SC	29451	IOP	
25th Avenue	Isle of Palms, SC	29451	IOP	
30th Avenue	Isle of Palms, SC	29451	IOP	
33rd Avenue	Isle of Palms, SC	29451	IOP	
41st Avenue	Isle of Palms, SC	29451	IOP	
Beachwood East	Isle of Palms, SC	29451	IOP	
Cameron Boulevard	Isle of Palms, SC	29451	IOP	
Forest Trail	Isle of Palms, SC	29451	IOP	
Hartnett Boulevard	Isle of Palms, SC	29451	IOP	
Ocean Boulevard	Isle of Palms, SC	29451	IOP	
Palm Boulevard	Isle of Palms, SC	29451	IOP	
Sandwedge Lane	Isle of Palms, SC	29451	IOP	
Lake Village Lane	Isle of Palms, SC	29451	IOP	
Waterway Boulevard	Isle of Palms, SC	29451	IOP	
Morrison Dive	McClellanville, SC	29458	McClellanville	
Pinckney Street	McClellanville, SC	29458	McClellanville	
Highway 17 N.	McClellanville, SC	29458	McClellanville	
DeLeisseline Boulevard	Mt. Pleasant, SC	29464	Mt. Pleasant	
E. Shipyard Road	Mt. Pleasant, SC	29464	Mt. Pleasant	
Ferry Street	Mt. Pleasant, SC	29464	Mt. Pleasant	
Hibben Street	Mt. Pleasant, SC	29464	Mt. Pleasant	
Hidden Bridge Drive	Mt. Pleasant, SC	29464	Mt. Pleasant	
Highway 17 By-Pass	Mt. Pleasant, SC	29464	Mt. Pleasant	
Kincaid Drive	Mt. Pleasant, SC	29464	Mt. Pleasant	
Kirk Court	Mt. Pleasant, SC	29464	Mt. Pleasant	
Live Oak Drive	Mt. Pleasant, SC	29464	Mt. Pleasant	
Magwood Lane	Mt. Pleasant, SC	29464	Mt. Pleasant	
Middle Street	Mt. Pleasant, SC	29464	Mt. Pleasant	
Montclair Drive	Mt. Pleasant, SC	29464	Mt. Pleasant	
Nantahala Boulevard	Mt. Pleasant, SC	29464	Mt. Pleasant	
Pearl Street	Mt. Pleasant, SC	29464	Mt. Pleasant	
Ralston Court	Mt. Pleasant, SC	29464	Mt. Pleasant	
Royall Avenue	Mt. Pleasant, SC	29464	Mt. Pleasant	
Sehoy Drive	Mt. Pleasant, SC	29464	Mt. Pleasant	
Shadow Drive	Mt. Pleasant, SC	29464	Mt. Pleasant	
Whilden Street	Mt. Pleasant, SC	29464	Mt. Pleasant	
William Street	Mt. Pleasant, SC	29464	Mt. Pleasant	
Annette Street	N. Charleston, SC	29406-3801	N. Chas.	
Arapahoe Drive	N. Charleston, SC	29405-7784	N. Chas.	
Auburn Drive	Charleston Heights, SC	29406-9049	N. Chas.	
Dorchester Road 100	N. Charleston, SC	29418	N. Chas.	
Dorchester Road 400	N. Charleston, SC	29418	N. Chas.	
Holden Street	N. Charleston, SC	29418-5823	N. Chas.	
Lilac Avenue	N. Charleston, SC	29405-6818	N. Chas.	
Maxwell Street	N. Charleston, SC	29405-4171	N. Chas.	
Melanie Court	N. Charleston, SC	29418-5414	N. Chas.	

New Ryder Road	N. Charleston, SC	29406	N. Chas.	
Nightingale Road	Charleston Heights, SC	29405-7387	N. Chas.	
Northwoods Blvd.	N. Charleston, SC	29406	N. Chas.	
Norwood Street	N. Charleston, SC	29405-8005	N. Chas.	
Rivers Avenue	N. Charleston, SC	29406	N. Chas.	
Spoletto Lane	N. Charleston, SC	29418	N. Chas.	
Spoletto Lane East	N. Charleston, SC	29418	N. Chas.	
Spur Street	N. Charleston, SC	29405-6825	N. Chas.	
Technical Parkway	N. Charleston, SC	29418-4931	N. Chas.	
Temple Street	N. Charleston, SC	29405	N. Chas.	
Rascal Run Court	Seabrook Island, SC	29455-6208	Seabrook Isl.	
Seabrook Island Road	Johns Island, SC	29455	Seabrook Isl.	
Atlantic Ave.	Sullivan's Island, SC	29482	Sullivan's Isl.	
Bayone St.	Sullivan's Island, SC	29482	Sullivan's Isl.	
Brownell Ave.	Sullivan's Island, SC	29482	Sullivan's Isl.	
I'on Ave.	Sullivan's Island, SC	29482	Sullivan's Isl.	
Jasper Blvd.	Sullivan's Island, SC	29482	Sullivan's Isl.	
Marshall Blvd.	Sullivan's Island, SC	29482	Sullivan's Isl.	
Middle Street	Sullivan's Island, SC	29482	Sullivan's Isl.	
Myrtle Ave.	Sullivan's Island, SC	29482	Sullivan's Isl.	
Osceola St.	Sullivan's Island, SC	29482	Sullivan's Isl.	
Seabreeze Lane	Sullivan's Island, SC	29482	Sullivan's Isl.	

Source: Federal Emergency Management Agency Repetitive Loss Correction Sheets

Attachment 5-D: Charleston Region Buildings Vulnerable to Flooding Due to Location in the Special Flood Hazard Area (SFHA) Only

Jurisdiction	Total Site-Built Structures	% of Total Site-Built Structures in the SFHA	Mobile Homes in SFHA*	Residential site-built structures in the SFHA		Commercial Structures in the SFHA		Total Structures in the SFHA (including site-built and mobile homes)	
				A/AE Zone	V/VE Zone	A/AE Zone	V/VE Zone	A/AW Zone*	V/VE Zone
City of Chas	47,735	55	95	21,684	1,386	2,984	271	24,760	1,660
City of NC	26,167	11	837	2,143	1	839	18	3,819	19
Folly Beach	2,498	89	0	980	1,156	41	37	1,021	1,193
Hollywood	2,164	22	34	455	0	25	0	514	0
Isle of Palms	4,724	99	0	3,350	1,030	228	82	3,578	1,112
James Island	5,217	61	19	2,899	191	68	1	2,986	192
Kiawah Island	3,688	98	0	3,484	68	59	7	3,543	75
Lincolnton	306	61	69	164	0	24	0	257	0
McClellanville	400	96	1	307	22	55	1	363	23
Meggett	720	82	53	555	2	34	1	642	3
Ravenel	916	12	83	92	0	19	0	194	0
Rockville	105	73	1	38	37	1	1	40	38
Seabrook Island	2,498	92	0	2,171	91	34	3	2,205	94
Sullivan's Isle	1,061	99	0	496	531	16	12	512	543
Summerville	995	21	0	204	0	1	0	205	0
Town of Awendaw	657	42	60	223	34	18	3	300	38
Town of Mt P	33,579	49	17	14,408	1,229	706	226	15,130	1,456
Unincorporated	25,598	50	1,155	10,921	1,169	556	74	12,586	1,289
Total Region	159,028	65	2,424	64,574	6,947	5,708	737	72,655	7,735

* Since most mobile homes in Charleston County are treated as vehicles for tax purposes, the determination of "A" or "V" zones for these homes using the Q-3 digital data was not able to be readily performed. All mobile homes in the SFHA are included in the A-zone total for this table, since most jurisdictions in Charleston County restrict mobile homes from the "V" flood zone areas.

Attachment 5-E: Charleston Region Buildings Vulnerable to Flooding Due to Year of Construction and Location in the Special Flood Hazard Area (SFHA)

Jurisdiction	Pre-1985 Site-Built Residential Buildings in SFHA	Pre-1985 Commercial Buildings in SFHA	Total Pre-1985 Site-Built Buildings in SFHA	% of All Site-Built Buildings In Jurisdiction Constructed Pre-1985 and in SFHA	Pre-1985 Mobile Homes in SFHA	Total Site-Built Buildings Pre-1985 & Mobile Homes in SFHA
City of Chas	12,915	1,915	14,830	6127.00%	44	14,874
City of NC	1,680	531	2,211	1319.00%	274	2,485
Folly Beach	919	51	970	9918.00%	0	970
Hollywood	93	10	103	1215.00%	11	114
Isle of Palms	2,104	14	2,118	9972.00%	0	2,118
James Island	2,436	34	2,470	5906.00%	9	2,479
Kiawah Island	1,626	25	1,651	10000%	0	1,651
Lincolnton	92	7	99	6346.00%	27	126
McClellanville	163	22	185	9788.00%	0	185
Meggett	199	18	217	8893.00%	17	234
Ravenel	34	5	39	1111.00%	19	58
Rockville	58	2	60	8571.00%	1	61
Seabrook Island	1,153	7	1,160	9957.00%	0	1,160
Sullivan's Isle	629	15	644	9954%	0	644
Summerville	0	0	0	0%	0	0
Town of Awendaw	77	7	84	3231.00%	7	91
Town of Mt P	2,349	255	2,604	3350.00%	3	2,607
Unincorporated	6,005	277	6,282	4459.00%	326	6,608
All Regions	32,532	3,195	35,727		738	36,465

Attachment 5-F: Charleston Region Average Valuation of Buildings and Mobile Homes

Jurisdiction	Avg. Site-Built Residential Building Value	Avg. Commercial Building Value	Avg. Mobile Home Value**	Estimated Total Pre-1985 Site-Built and Mobile Home Building Value	Estimated Pre-1985 Site-Built Building And Mobile Home Value in SFHA (mil.\$)
Town of Awendaw (All)	\$139,730.45	\$164,458.97	\$14,143.67	\$22,628,100.00	
Pre-1985 only	\$89,847.77	\$29,900.00	\$3,076.00		\$7,672,100.00
City of Charleston (All)	\$187,342.25	\$487,800.71	\$5,792.75	\$4,736,784,860.00	
Pre-1985	\$181,122.06	\$292,822.24	\$2,255.09		\$3,205,413,939.00
Folly Beach (All)	\$190,952.27	\$73,539.62	N/A	\$111,218,299.00	
Pre-1985 only	\$116,461.71	\$71,122.22	\$0.00		\$110,566,999.00
Hollywood (All)	\$179,018.73	\$148,588.47	\$13,000.52	\$66,631,424.00	
Pre-1985	\$78,852.75	\$73,261.96	\$3,004.20		\$11,017,200.00
Isle of Palms (All)	\$319,752.41	\$150,791.05	\$0.00	\$449,039,302.00	
Pre-1985 only	\$212,449.62	\$79,700.00	\$0.00		\$448,156,302.00
Kiawah Island (All)	\$463,192.50	\$2,085,521.84	N/A	\$438,367,292.00	
Pre-1985 only	\$266,113.90	\$226,643.68	\$0.00		\$438,367,292.00
Lincolnton (All)	\$86,029.09	\$110,771.43	\$8,123.46	\$12,209,000.00	
Pre-1985 only	\$80,304.79	\$36,255.56	\$1,883.33		\$8,057,400.00
McClellanville (All)	\$220,219.17	\$139,782.93	\$15,600.00	\$29,518,400.00	
Pre-1985 only	\$167,770.48	\$75,840.91			\$29,127,400.00
Meggett (All)	\$195,516.20	\$162,500.00	\$11,947.06	\$34,519,000.00	
Pre-1985 only	\$147,409.82	\$75,857.89	\$3,216.67		\$32,156,900.00
Mt. Pleasant (All)	\$240,784.92	\$657,697.38	\$9,140.63	\$1,389,534,801.00	
Pre-1985 only	\$170,573.36	\$261,142.07	\$2,115.63		\$530,855,745.00
N. Charleston (All)	\$98,087.75	\$580,038.29	\$5,819.66	\$2,049,963,805.00	
Pre-1985 only	\$87,989.84	\$287,544.33	\$2,138.89		\$301,303,492.00
James Island (All)	\$168,300.81	\$221,819.18	\$14,431.25	\$660,079,508.00	
Pre-1985 only	\$157,655.39	\$169,022.78	\$2,025.00		\$394,406,808.00
Ravenel (All)	\$118,633.59	\$207,735.89	\$10,567.15	\$24,976,272.00	
Pre-1985 only	\$71,022.07	\$67,634.35	\$2,942.63		\$2,799,000.00
Rockville (All)	\$202,903.96	\$76,525.00	\$5,133.33	\$11,319,300.00	
Pre-1985 only	\$166,763.64	\$76,525.00	\$3,400.00		\$10,601,600.00
Seabrook Island (All)	\$307,050.75	\$126,918.55	N/A	\$216,267,000.00	
Pre-1985 only	\$185,694.98	\$223,662.50	\$0.00		\$214,318,400.00
Summerville (All)	\$110,201.82	\$190,600.00	\$9,225.00	\$373,300.00	
Pre-1985 only	\$36,942.86	\$28,175.00	\$1,000.00		N/A
Sullivan's Isl. (All)	\$432,457.14	\$239,788.46	N/A	\$176,902,613.00	
Pre-1985 only	\$276,995.43	\$153,458.33	\$0.00		\$176,902,613.00
Unincorporated (All)	\$144,312.55	\$228,345.42	\$11,476.03	\$1,564,328,007.00	
Pre-1985 only	\$110,253.48	\$122,977.61	\$2,677.91		\$789,176,627.00
Total Region (All)	\$191,598.67	\$494,895.40	\$9,232.14	\$11,994,660,283.00	
Pre-1985 only	\$146,246.86	\$262,301.14	\$2,402.88		\$6,710,899,817.00

** Valuation data reflected herein is for mobile homes, regardless of age.

Attachment 5-G: Charleston Region Average Valuation of Site-Built Buildings by Flood Zone

Jurisdiction	Total Value "A" Zones Site-Built Structures	Total Value "V" Zones Site-Built Structures (mil\$)	Total Value Site-Built Structures Not in the SFHA (mil\$)	Total Value of Site-Built Structures Not Flood-Zone Coded** (mil\$)
City of Chas	\$5,906,024,273	\$798,093,190	\$4,055,079,249	\$3,473,368,792
City of NC	\$757,960,788	\$19,600,400	\$4,359,588,696	\$4,017,936,428
Folly Beach	\$167,045,899	\$256,356,499	\$16,464,300	0
Hollywood	\$162,344,602	0	\$219,588,724	\$188,179,624
Isle of Palms	\$1,051,435,087	\$396,878,699	\$8,672,200	\$6,216,400
James Island	\$509,362,501	\$43,016,800	\$332,982,500	\$327,591,300
Kiawah Island	\$1,657,338,200	\$97,594,200	\$94,464,200	0
Lincolnville	\$19,222,000	0	\$7,597,100	\$6,266,600
McClellanville	\$70,210,593	\$9,266,899	\$3,424,000	\$785,100
Meggett	\$116,884,300	\$345,400	\$21,700,800	\$14,424,500
Ravenel	\$17,021,000	0	\$103,088,001	\$94,945,001
Rockville	\$7,353,900	\$9,525,300	\$3,920,200	\$3,552,000
Seabrook Island	\$649,693,800	\$63,668,900	\$12,919,700	0
Sullivans Isle	\$197,031,614	\$252,282,000	\$2,784,200	0
Summerville	\$28,160,600	0	\$82,133,400	\$57,263,800
Town of Awendaw	\$36,219,699	\$13,707,800	\$42,281,400	\$35,788,800
Town of Mt P	\$4,685,924,426	\$510,726,700	\$3,958,761,756	\$3,454,453,256
Unincorporated	\$2,019,335,335	\$316,125,103	\$1,489,554,343	\$1,381,493,543
Total Region	\$18,058,568,617	\$2,787,187,890	\$14,815,004,769	\$13,062,265,144

** Valuation data reflected herein is for mobile homes, regardless of age.

Section 6 Possible Activities

6.1 – Prioritizing Projects

Since this plan is a regional plan intended for applicability to all jurisdictions within the Charleston County area, specific project selection is not included within this plan. (An exception to this pertains to those projects that are ongoing within the Region and are therefore already funded through designated sources.) Separate committees consisting of interested parties from the jurisdictions, businesses, non-profit sector, and/or the public at large have been established to actually select projects to be performed and to identify potential funding sources for those projects that are not on-going projects. The individual jurisdictions have also been encouraged to identify and implement projects applicable to their jurisdictions as they deem appropriate.

Data received from the 2014-15 questionnaire was used for project prioritization ranking because the 2017 survey was focused on hazard risk assessment in addition to resiliency. The results of this survey are as follows:

1. Project technical feasibility.
2. Jurisdiction/agency in agreement with/support project
3. Use of structure.
4. Property affected by project is a repetitive (flood) loss property
5. Environmental considerations.
6. Nature of structure.
7. Property owners are in agreement with/support project.
8. Ability to recover expenditures.
9. Historic nature of property.
10. Location of project.
11. FEMA cost benefit analysis used to rank projects.
12. Ability of property owners to afford mitigation measure (lower income first)

These prioritization factors from the questionnaire surveys, are (with the exception of the repetitive flood loss property factor) not hazard-specific, so consequently would apply to all hazards identified in the quantitative risk assessments (e.g. State of South Carolina Hazards Assessment and the frequency/severity of hazard events risk assessment methodologies) discussed in the Problem Assessment section of this plan. The ranking of the repetitive flood loss property prioritization factor is still relatively high and is generally consistent with the high ranking of the flood hazard in this plan. These prioritization factors are utilized by the multiple committees who provide input into this plan as criteria for assigning a 1 to 4 priority rating for action items in the action plans for the adopting entities (1 through 4 with 1 being the highest). The members of the committees also conduct a cost benefit review of the action items in determining these priority ratings (1 to 4). This review includes, but is not limited to, discussion of which action items have the lowest cost for the highest benefit, funding availability for the types of projects, and whether the proposed activity/project complies with

National Flood Insurance Program (NFIP) requirements (and local flood ordinances when these exceed NFIP requirements). The highest-ranking items were deemed to be the most beneficial.

Several of these project prioritization factors are specific to a particular type of activity. The following sections of this plan describe the factors that are applicable to the six categories of activities (e.g. preventive activities, property protection, natural and beneficial functions of floodplains, emergency services, structural projects and meeting PPI standards) are used to classify potential hazard mitigation projects.

6.2 - Public Information Plan

In an effort to achieve the goals and requirements for a Program for Public Information Plan for Community Rating System credit, the Public Information Plan for the *Charleston Regional Hazard Mitigation Plan* is now included in this document as an Appendix. This document, though still a part of the *Charleston Regional Hazard Mitigation Plan*, can also act as a stand-alone document for specific use as a public information document. The history of the program that established the Plan, the Committee, topics, messages and target audiences, outreach projects, and many other elements are all included in the document. Please see Appendix 1 for the complete document, as well as Attachment 1-A for an organizational chart.

6.3 – Preventive Activities

Preventive activities include such items as floodplain management regulations, beachfront management regulations, stormwater management regulations, building-related codes, fire prevention codes, wetlands protection regulations, water quality regulations, stream-dumping regulations, coastal erosion regulations, and the preservation of open space. Public information activities are discussed in Appendix 1 that is specifically designated to this topic. The Preventative and Property Protection Subcommittee of the *Hazard Mitigation and Public Information Plan Committee* collaborate to make recommendations for future projects.

The project prioritization factors applicable to this type of activity in the order of importance per the 2014-15 questionnaire survey results are as follows:

1. Project technical feasibility.
2. Jurisdiction/agency in agreement with/support project.
3. Use of structure.
4. Property affected by project is a repetitive (flood) loss property.
5. Environmental considerations.
6. Property owners are in agreement with/support project.
7. Historic nature of property.

On-going projects within the Charleston County area that would be classified as preventive activities, the type of organization(s) performing the function, and funding mechanisms for these activities are provided in Table 6.1 below.

Table 6-1

On-Going Preventative Activities in Charleston County		
Activity	Type of Organization	Funding Mechanism
Floodplain Management Regulations	Local jurisdictions, SC Dept. of Natural Resources, US ACOE	General Fund
Fire Protection Regulations	Local jurisdictions, State Fire Marshal	General Fund Insurance Reserve Fund
Wetlands Protection Regulations	U.S. Army Corps of Engineers, S. C. DHEC Office of Coastal & Resource Management	General Fund
Other Management Regulations (e.g. Building Code Enforcement Assistance, flood mapping / delineation, Environmental Review, hazards research)	S.C. Dept. of Insurance, S. C. Dept. of Natural Resources, S. C. Sea Grant Consortium, US ACOE	General Fund Grant Funding Donations
Preservation of Open Space	Charleston County Parks & Recreation Commission, Local Jurisdictions, wetlands banks	General Fund Bond Funding
Stormwater Management Regulations	S. C. DHEC Office of Coastal and Resource Mgmt., Local Jurisdictions, US ACOE	General Fund
Wind Building Regulations	Local Jurisdictions	General Fund
Coastal Erosion Regulations	S. C. DHEC Office of Coastal and Resource Mgmt., Local Jurisdictions, US ACOE	General Fund
Earthquake Building Regulations	Local Jurisdictions	General Fund
Beachfront Management Regulations	SC DHEC Office of Coastal and Resource Mgmt.	General Fund
Water Quality Regulations	SC DHEC, U. S. Army Corps of Engineers, S.C. Dept. of Natural Resources	General Fund
Stream Dumping Regulations	Local Jurisdictions	General Fund

Additional preventive activities which may be considered by the jurisdictions in the Charleston County area include but are not limited to, the following:

- Considering areas subject to repetitive flooding for acquisition for parks and other permanent open space.
- Revising floodplain management ordinances to include a two (2) foot freeboard in areas without other restrictions that make the requirement for an extra foot of elevation impractical (e.g. historic buildings, areas with zoning ordinances with height limitations, etc.).

- Adopting voluntary standards for single-family residence construction that exceed minimal building code requirements for wind and seismic design.
- Adopting stream-dumping ordinances.
- Modernizing flood insurance rate maps.
- Restricting newly located manufactured housing from Velocity (“V”) flood zones.
- Developing maps to indicate areas where radon protection would be recommended.
- Sponsoring educational programs for design professionals, contractors, building code officials, insurance agents, etc. on regulations and codes.
- Developing a monitoring program for known repetitively flooded properties to verify that substantial improvements are not being performed without proper permitting in an effort to avoid elevating the structures.
- Encouraging a standardized system to collect data on flood events throughout the Region for future flood studies.
- Participating in a “Drainage Awareness Campaign” to educate citizens regarding effects of dumping foreign materials into drainage ways.
- Encouraging development reviewers to consider provisions for “no adverse impact” when development is proposed within floodplain areas.
- Encouraging young people to learn more about hazard prevention through engineering solutions by sponsoring awards at the Lowcountry Science Fair.

6.4 - Property Protection

Property protection includes but is not limited to such items as educating or assisting citizens regarding retrofitting existing structures to be more resistant to hazards (e.g. hurricane, flood, earthquake, tornado, wildfire, hazardous material incidents, and/or terrorism), elevating existing structures so that the finished floor/lowest horizontal structural member is at or above the base flood elevation or freeboard elevation, demolishing structures below the base flood elevation which cannot be cost effectively elevated or retrofitted, relocating structures in areas subject to repetitive flooding to areas not within the special flood hazard area, educating citizens regarding hazard safe interior rooms for tornado shelters, educating property owners regarding glazing protection in the event of a hurricane, providing information regarding hazard insurance to citizens, and insuring public owned facilities against hazards.

The project prioritization factors applicable to this type of activity per the survey in the order of importance are as follows:

1. Project technical feasibility.
2. Jurisdiction/agency in agreement with/support project.
3. Use of structure.
4. Property affected by project is a repetitive (flood) loss property
5. Environmental considerations.
6. Nature of structure.
7. Property owners are in agreement with/support project.
8. Ability to recover expenditures.

9. Historic nature of property.
10. Location of project.
11. FEMA cost benefit analysis used to rank projects.
12. Ability of property owners to afford mitigation measure (lower income first)

On-going projects within the Charleston County area which would be classified as property protection activities, the type of organization(s) performing the function, and funding mechanisms for these activities are provided in Table 6.2 (the order of the activity in the table corresponds to the prioritization of these activities from most important to least important per the average of the questionnaire responses).

Table 6-2

On-Going Property Protection Activities in Charleston County		
Activity	Type of Organization	Funding Mechanism
Providing information re: flood insurance to citizens	Local Jurisdictions, SC DNR, FEMA, Sea Grant Consortium, US ACOE	Grant Funding General Fund Donations
Designing new publicly owned buildings to exceed minimal hazard resistance design criteria	Local Jurisdictions, State Engineer, SC DOT, US ACOE	Bond Funding Grand Funding General Fund
Purchase flood insurance for publicly owned buildings	Local Jurisdictions, State Engineer	General Fund
Elevating/Retrofitting repetitively damaged property	Local Jurisdictions, S. C. Sea Grant Consortium, SC DNR, FEMA, US ACOE, SC DOT	Grant Funding General Fund Donations
Retrofitting existing publicly owned structures to meet minimal hazard resistance design criteria	Local Jurisdictions, State Engineer, SC DOT, US ACOE	Bond Funding Grant Funding General Funding Donations
Purchase earthquake insurance for publicly owned buildings	Local Jurisdictions, State Engineer	General Fund
Demolition of repetitively damaged properties (flood)	Local Jurisdictions, SC DNR, FEMA, SC DOT, SC DHEC OCRM	Grant Funding General Fund
Purchase wind insurance for publicly owned buildings	Local Jurisdictions, State Engineer	General Fund
Provide information re: earthquake insurance to citizens	Local Jurisdictions, FEMA	Grant Funding General Fund
Acquisition/Relocation of repetitively damaged property	SC DNR, FEMA, US ACOE, SC DOT, SC DHEC OCRM	Grant Funding General Fund

The Committee determined that there should be some consideration of the nature of the flooding problem in the entire neighborhood in addition to a structure-by-structure approach in determining projects to be undertaken. It was discussed that there may be certain situations where, for example, a drainage improvement project may be the most cost effective mechanism of addressing a neighborhood flooding problem where multiple structures are flooding (with or without flood insurance claims), and others where retrofitting/elevating/demolishing one structure with repetitive flooding may be the most

effective mechanism for addressing the problem. A broad based neighborhood approach is recommended for project selection in this regard.

Activities the jurisdictions in the Charleston County area may want to consider implementing in addition to those on-going projects for property protection include but are not limited to the following. The Preventative and Property Protection Subcommittee of the *Hazard Mitigation and Public Information Plan Committee* collaborate to make recommendations for future projects.

- Encouraging lenders to provide low interest rate loans for retrofitting structures for hazard resistance.
- Encouraging local building material/hazard resistant product suppliers to donate or provide supplies at a reduced cost for retrofitting existing structures for hazard resistance.
- Encouraging local volunteer agencies/contractors/design professionals to donate or provide services at a reduced cost for retrofitting existing structures for hazard resistance.
- Educating citizens regarding hazard safe interior room construction.
- Establishing a volunteer network to assist elderly/infirm property owners with installing glazing protection when a hurricane warning is issued.
- Supporting projects designed to enhance the distribution of information regarding hazard mitigation/preparation to the citizens (e.g. development of displays for information distribution at public events/facilities, Hazard Awareness Week, etc.)
- Utilizing available software for conducting vulnerability analyses to various types of natural or man-made hazards (e.g. HAZUS, CAMEO, Consequences Assessment Tool set, etc.)
- Develop a voluntary set of specifications that exceed minimal code to encourage builders and property owners to construct or retrofit their homes in a more hazard resistant manner.
- Develop educational materials to educate residents about hazard resistant construction techniques and protecting property from hazard-related damages.
- Retrofitting existing critical facilities for enhanced hazard-resistance.
- Supporting demonstration projects where residents may learn how to protect their homes from hazard events.
- Developing programs where eligible residents receive assistance in repairing/renovating their homes for enhanced hazard resistance.
- Developing a detailed inventory of the most vulnerable and most critical structures to the types of hazard events experienced in the community for archival records in the event of a loss due to a hazard event.
-

6.5 – Natural and Beneficial Functions of Floodplains/Resource Preservation

Floodplains in the Charleston County area may contain wetland areas or primary ocean front dunes, which serve important functions. Specifically, wetlands may moderate flooding, enhance water quality, enhance ground water recharge, and often serve as habitats for wildlife. Primary ocean front dunes serve as a buffer against minor wave height fluctuations and against beach erosion. Activities geared towards the protection of natural and beneficial functions of floodplains include but are not limited to wetlands protection through permitting processes, dune protection through permitting processes, building set-back lines for wetlands and/or the ocean, beach re-nourishment, tree protection ordinances, erosion-control requirements for commercial construction, and installation of environmentally sensitive wastewater treatment facilities. Although historic structures are not generally thought of as performing a function beneficial to floodplains, the Charleston area has a long history of considering these structures as beneficial resources to the community. Therefore, the preservation and rehabilitation of these structures for improved resistance to natural hazard strikes could be considered an activity with benefit for the other types of hazards facing this area.

The project prioritization factors applicable to this type of activity in the order of importance are as follows:

1. Project technical feasibility.
2. Jurisdiction/agency in agreement with/support project.
3. Environmental considerations.
4. Property owners are in agreement with/support project.
5. Ability to recover expenditures.
6. Historic nature of property.
7. Location of project.
8. FEMA cost benefit analysis used to rank projects.
9. Ability of property owners to afford mitigation measure (lower income first)

On-going projects within the Charleston County area which would be classified as natural and beneficial function protection activities, the type of organization(s) performing the function, and funding mechanisms for these activities are provided in Table 6.3.

Table 6-3

On-Going Floodplains/Resource Preservation Activities in Charleston County		
Activity	Type of Organization	Funding Mechanism
Beach Renourishment	Local Jurisdictions, FEMA	Grant Funding General Fund
Permitting of wastewater treatment facilities	SC DHEC Env. Health	General Fund
Erosion Control	Local Jurisdictions, SC DHEC OCRM, contractors	General Fund Contractor Expense
Permitting for wetland disturbance	SC DHEC OCRM, US ACOE	General Fund
Tree protection/landscaping ordinances	Local Jurisdictions, State Engineer, SC DOT, US ACOE	General Fund
Dune protection	Local Jurisdictions, SC DHEC OCRM	General Fund
Designation of wildlife preservation areas	US DOL, SC DNR	General Fund
Preservation/retrofitting of Historic sites/structures for hazard resistance	Local Jurisdictions, SC Dept. of Archives, US DOI	General Fund Bond Funding Grant Funding Donations
Reviewing/Preparing Environmental Impact Statement (SPA at Daniel Island)	US ACOE	General Fund
National Water Quality Assessment Program	USGS, US ACOE	General Fund
Bioremediation assessment	USGS, Naval Facilities Engineering Command, US ACOE	General Fund
Biological and Ecological studies	USGS, US Fish & Wildlife Service, US ACOE	General Fund
Preservation of open space as parks	Local Jurisdictions, SC Dept. of Archives, US ACOE	Bond Funding General Fund Donations

Activities the jurisdictions in the Charleston County area may want to consider implementing in addition to those on-going projects for natural and beneficial function protection include but are not limited to the following:

- Educating citizens regarding hazard resistant landscaping and coastal and endangered species.
- Participating in a “Garden Spot for Kids” program.
- Considering purchasing COBRA zone properties for parks.
- Developing programs to encourage young people to take an interest in preserving natural and historic resources.
- Creating new beachfront dunes through “Build-A-Dune” projects.
- Encouraging wetlands preservation through educating the public about wetlands buffer zones or regulating these buffer zones through development ordinances.

- Encouraging citizens to preserve natural and historic resources at appropriate existing public venues and parks.
- Encouraging wildfire-prone local communities to become “Firewise communities”, to the extent feasible.

6.6 – Emergency Services

Emergency services include but are not limited to posting hazard event activities such as damage assessment, search and rescue, treatment of injuries, traffic control, crime control, firefighting, hazardous material cleanup/control, debris removal, road clearing, distribution of emergency supplies, and disposition of debris. Emergency services also include the provision of emergency shelters, emergency mass transportation, evacuation procedures, and emergency warning.

The project prioritization factors applicable to this type of activity per the survey in the order of importance are as follows:

1. Project technical feasibility.
2. Jurisdiction/agency in agreement with/support project.
3. Use of structure.
4. Property affected by project is a repetitive (flood) loss property
5. Environmental considerations.
6. Nature of structure.
7. Property owners are in agreement with/support project.
8. Historic nature of property.
9. Location of project.
10. FEMA cost benefit analysis used to rank projects.

On-going projects within the Charleston County area which would be classified as emergency services activities, the type of organization(s) performing the function, and funding mechanisms for these activities are provided in Table 6.4.

Table 6-4

On-Going Emergency Services Activities in Charleston County		
Activity	Type of Organization	Funding Mechanism
Emergency Health Care Services Provision	Local Jurisdictions, Hospitals, Ambulance companies, American Red Cross	General Fund Insurance Direct payment for services Donations
Emergency Warning (Emergency Broadcast System)	Local jurisdictions, media, NOAA NWS, US ACOE	General Fund
Distribution of Emergency Supplies	Local Jurisdictions, American Red Cross, FEMA, US ACOE	General Fund Donations Grant Funding
Evacuation Shelters	American Red Cross, Local Jurisdictions, US ACOE	General Fund Donations
Fire suppression	Local Jurisdictions	General Fund Insurance Reserve Fund
Hazardous Material cleanup/control	Local Jurisdictions, Transporters/storage location operators of hazardous materials	General Fund Enterprise Fund Bond Funding
Crime Control	Local Jurisdictions, SLED, US FBI	General Fund
Debris removal/disposition	Local Jurisdictions, FEMA	General Fund Grant Funding Enterprise Fund
Coordination of Volunteer services (post-event)	Local Jurisdictions, American Red Cross, Salvation Army	General Fund Donations
Hurricane Surge Mapping	US ACOE, USGS	General Fund
Flood forecasting	NOAA NWS, US ACOE	General Fund
Gathering and providing hydrologic data	USGS, State Hydrologist, US ACOE	General Fund
Sandbagging for flooding	Local Jurisdictions	General Fund
Maritime firefighting program	Local jurisdictions, SPA, maritime industry	General Fund Enterprise Fund Donations
Hazardous material training	Local Jurisdictions	General Fund Grant Funding
Terrorist response/preparation training	Local Jurisdictions	General Fund Grant Funding
Staffing Emergency Operation Centers	Local Jurisdictions, American Red Cross, Salvation Army, media providers, US ACOE	General Fund Bond Funding

The Emergency Services Subcommittee of the *Hazard Mitigation and Public Information Plan Committee* collaborate to make recommendations for future projects. Activities the jurisdictions in the Charleston County area may want to consider implementing in addition to those on-going projects for emergency services include but are not limited to the following:

- Retrofitting existing critical facilities for hazard resistance.
- Identifying evacuation shelters for areas currently not within reasonably close proximity to a shelter for humans and pets/domestic animals.
- Making provisions for emergency warning during normal sleep hours (particularly for hazards with little warning such as tornadoes).

- Making provisions for transportation to emergency shelters for those in need of transportation.
- Constructing new critical facilities to the extent practical in such a manner as to exceed minimal standards for hazard resistance and to be located in areas that are the least prone to damage by hazard events (e.g. not in the special flood hazard area if possible and still meet the service needs for the facility).
- Obtaining information regarding/ assisting with the preparation of emergency plans for places of large assembly (e.g. Aquarium, Coliseum, Athletic stadiums, etc.) and tourist activity centers.
- Adopting the Terrorism Annex to the Emergency Operations Plan.
- Educating medical providers on emergency service topics such as decontamination procedures.
- Providing resources to enable emergency shelters to be opened quickly in the event of a hazard with little or no warning.
- Providing assistance to the marine assistance pact and the anti-terrorism task force.
- Making applications to nationally recognized programs that promote emergency preparedness, such as the “Storm Ready” program of the National Weather Service.
- Providing updated weather radios to schools for early warning of pending hazard events.
- Promoting hazard awareness through media campaigns using weather radios as give-away items.

6.7 - Structural Projects

Structural projects include, but are not limited to, drainage improvement projects, stream channel modification/dredging, dam construction, and infrastructure construction/modification/repair. Since Geographic Information Systems (GIS) are potentially valuable tools for use in structural projects, GIS related projects are included within this section of the Plan.

The project prioritization factors applicable to this type of activity per the survey in the order of importance are as follows:

1. Project technical feasibility.
2. Jurisdiction/agency in agreement with/support project.
3. Use of structure.
4. Property affected by project is a repetitive (flood) loss property
5. Environmental considerations.
6. Nature of structure.
7. Property owners are in agreement with/support project.
8. Ability to recover expenditures.
9. Historic nature of property.
10. Location of project.
11. FEMA cost benefit analysis used to rank projects.

12. Ability of property owners to afford mitigation measure (lower income first)

On-going projects within the Charleston County area which would be classified as structural project activities, the type of organization(s) performing the function, and funding mechanisms for these activities are provided in Table 6.5.

Table 6-5

On-Going Structural Project Activities in Charleston County		
Activity	Type of Organization	Funding Mechanism
Drainage Improvement Projects (See list provided in Attachment 6-C to this section)	Local Jurisdictions, US ACOE	Grant Funding Enterprise Funding General Fund Bond Funding
Drainage studies (See list provided in Attachment 6-C to this section)	Local Jurisdictions, US ACOE	General Fund Grant Funding Enterprise Funding
Drainage System Maintenance	Local Jurisdictions, SC DOT	General Fund Enterprise Fund
Installation of dry fire hydrants in rural areas	Local Jurisdictions	General Fund
GIS Mapping	Local Jurisdictions, US ACOE, NOAA Coastal Resources, BCD COG, SC DNR, USGS, FEMA	General Fund Grant Funding
Establishing elevation reference marks	US ACOE, FEMA	General Fund Grant Funding
Inspecting elevation reference marks	Local Jurisdictions	General Fund
Channel dredging	Local Jurisdictions, SPA, US ACOE	General Fund Grant Funding Bond Funding
Road/bridge construction/repair	Local Jurisdictions, SC DOT, US ACOE	General Fund Grant Funding Bond Funding
Utility right-of-way permitting/construction	Local Jurisdictions, SC DOT, utility service providers, US ACOE	General Fund Utility use collections Bond Funding
Coastal Erosion Study	USGS, SC DHEC OCRM, S. C. Sea Grant Consortium, US ACOE	General Fund Grant Funding
Topographic Mapping	USGS, US ACOE	General Fund
Hydrologic Data Collection	USGS, State Hydrologist, US ACOE	General Fund
Stormwater Master Planning	Local Jurisdictions	Enterprise Funds

Activities the jurisdictions in the Charleston County area may want to consider implementing in addition to those on-going structural projects include but are not limited to the following

- Updating or developing a master drainage, storm water or watershed plan.
- Implementing drainage improvement projects consistent with results of the drainage studies.
- Implementing a Drainage Awareness Campaign program.
- Developing a system for recording flood damages as a result of inadequate drainage in a consistent manner across jurisdictions.
- Developing a schedule for placing existing above ground utilities underground where feasible, particularly along evacuation routes, major arteries, and highly congested areas.
- Developing a schedule to repair/replace existing roads/bridges, which based upon vulnerability analyses and inspection results are least likely to withstand hazard events.

- Developing a system for the sharing of GIS maps and support data amongst the jurisdictions to minimize duplication of effort.
- Installing signs indicating anticipated flood elevation levels over major roadways in the event of a hurricane or severe flood event.
- Educating residents on proper generator usage.
- Educating residents on procedures to follow to underground their utilities going to their individual properties.
- Implementing a storm water section to address water quality and NPDES requirements and to address water quantity issues to reduce flooding potential.

6.8 – Public Information Plan Activities

Public Information Activities have expanded substantially by becoming a part of the Hazard Mitigation Plan. The former Public Information Committee of Project Impact has been merged and is now an integral part of the *Hazard Mitigation and Public Information Plan Committee*. As a result, the PIP has become the roadmap for all community information systems of all Project Impact programs.

In addition to the individual Committee's requirements, the requirements of Section 6.2 Public Information Plan are met when appropriate. A list of current outreach projects, flood response preparation projects and coverage improvement plan project requirements are found in the Public Information Plan, which is Appendix 1).

Ongoing projects within the Charleston County area, which would be classified as public information activities, the type of organization(s) performing the function, and funding mechanisms for these activities are provided in Table 6.6.

Table 6-6

On-Going Public Information Activities in Charleston County		
Activity	Type of Organization	Funding Mechanism
Mailing hazard brochures to all residents	Local Jurisdictions, FEMA, SC DNR, US ACOE	General Fund Grant Funding
Providing literature to citizens at offices/places of business	Local Jurisdictions, FEMA, SC DNR, US ACOE, USGS, American Red Cross, S. C. Sea Grant Consortium, DHEC OCRM, media providers	General Fund Grant Funding Donations
Television Advertisements and County-wide summer billboards	FEMA, media providers, Corporate sponsors	General Fund Grant Funding Donations
Participating in Hazard Awareness Weeks	Local Jurisdictions, American Red Cross, Corporate sponsors, US ACOE; National Weather Service	General Fund
Newspaper advertisements	Local Jurisdictions, FEMA, American Red Cross, SC DOT, DHEC OCRM	General Fund
Providing speakers for schools/groups	Local Jurisdictions, US ACOE, SC DNR, DHEC OCRM, FEMA, American Red Cross, SC DOT, S.C. Sea Grant Consortium, USGS; National Weather Service	General Fund Grant Funding
Mailing hazard brochures to floodplain residents	Local Jurisdictions	General Fund
Participating in hazard-related/product expos	Local Jurisdictions, American Red Cross, media providers, National Weather Service	General Fund Grant Funding
Providing courses for school children re: hazard preparedness	FEMA, Earthquake Education Center, State Fire Marshal, SC EPD, Local Jurisdictions,	General Fund
Providing hazard-related information on internet web pages	Local Jurisdictions, FEMA, NOAA NWS, SC DNR, US ACOE, USGS, American Red Cross, SC DOT, Sea Grant Consortium, media providers	General Fund
Providing post-disaster educational services, such as but not limited to, literature distribution, media announcements, speaking to groups of residents, etc.	American Red Cross, Local Jurisdictions, FEMA, ACOE, SC DOT, media providers	General Fund Grant Funding

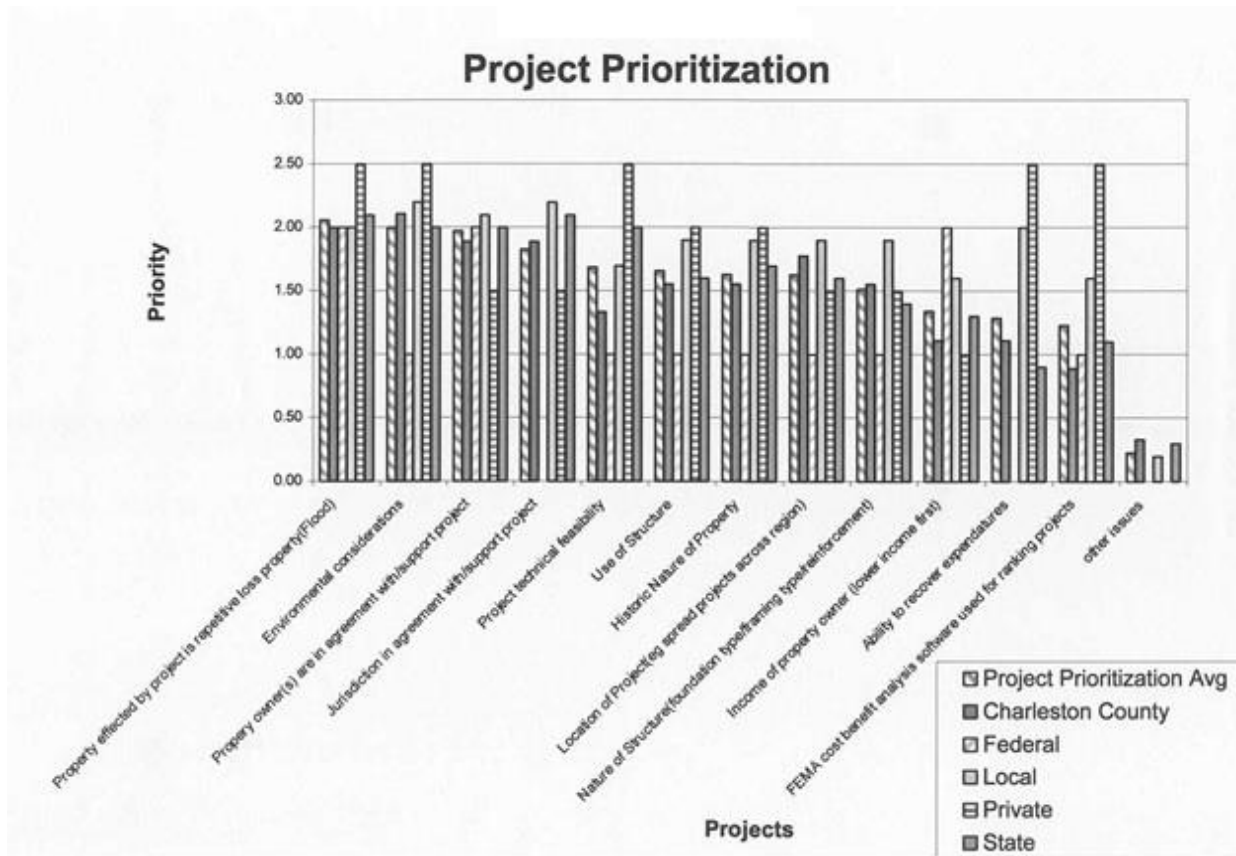
In addition the activities the jurisdictions in the Charleston County area may want to consider implementing in addition to those on-going public information projects include but are not limited to the following:

- Participating in a study of the residents of the Charleston County area regarding their knowledge level of hazards facing this area.
- Participating in “Project Impact” public information activities to the extent feasible.
- Participating in contractor hazard resistant building techniques workshops.
- Participating in a children’s hazard awareness program.
- Participating in the development of a mobile hazard-related educational display.
- Participating in hazard mitigation techniques demonstration projects.
- Establishing an information sharing resource centrally located so that all the jurisdictions have access to hazard-related information when needed.

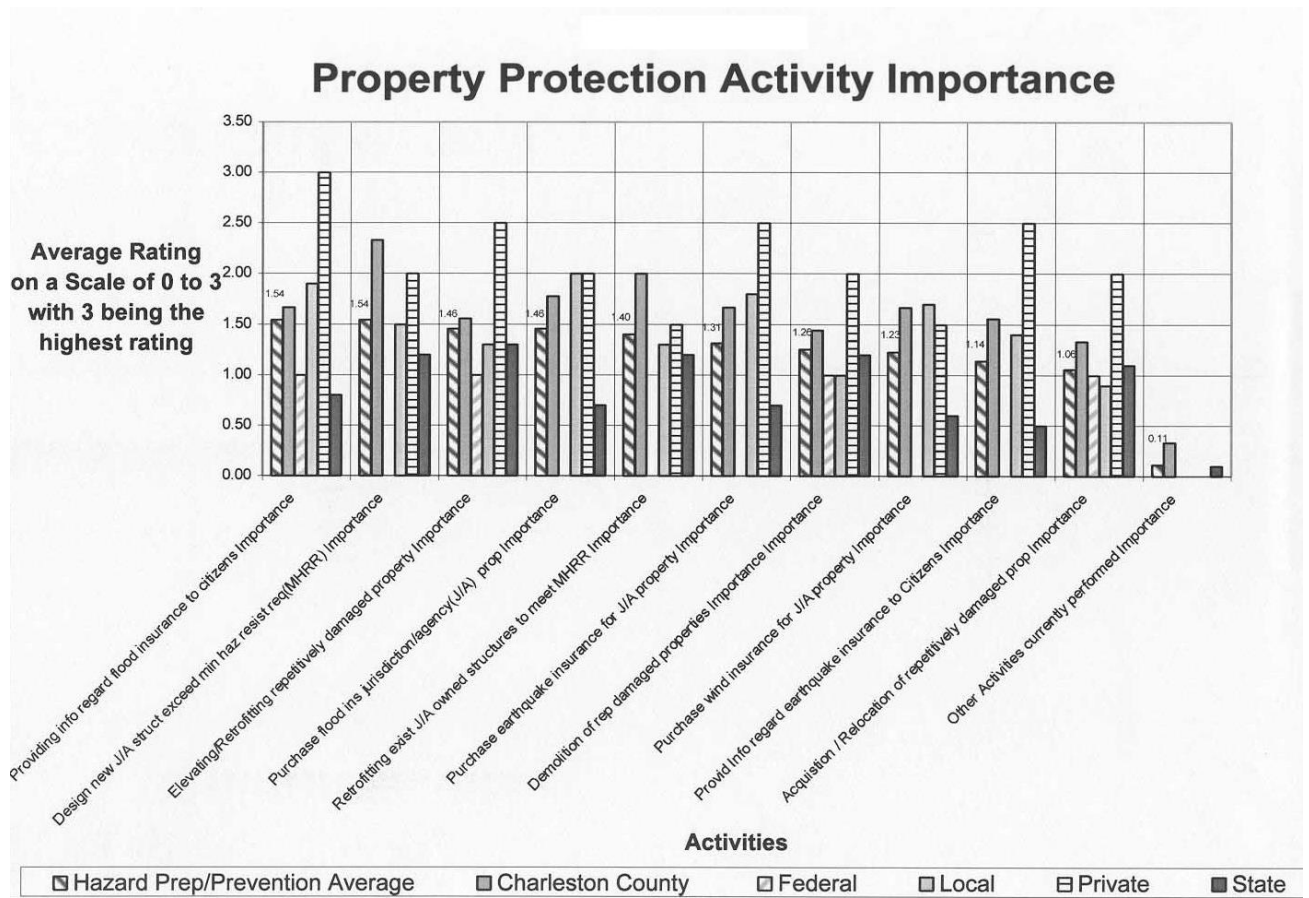
- Encouraging local restaurants and/or movie cinemas to participate in public education campaigns targeted for these establishments.
- Participating in hazards expos and other events designed to educate citizens about hazard preparation and protection.
- Assisting with the development and/or distribution of printed materials to residents or visitors on hazard-related topics.
- Participating in the speaker's bureau and/or asking speakers to present hazard-related topics at local functions or events.
- Encouraging young people to learn more about hazard preparations through activities and programs aimed at this audience.
- Working with media outlets to provide hazard-related information to local citizens.
- Working with media outlets to provide hazard-related information to local citizens.
- Distributing an "Electronic Bulletin Board" of public education events and other activities to Committee members and supporters.

Jurisdictions are encouraged to select projects they intend to participate in for their respective action plans to include with this plan.

Attachment 6-A: Chart of Project Prioritization Factors Based Upon Questionnaire Responses



Attachment 6-B: Chart of Property Protection Project Prioritization Based Upon Questionnaire Responses



Attachment 6-C: Drainage Improvement Projects

Listed in the tables below are some of the drainage improvement and drainage study projects undertaken in Charleston County. For a complete list of projects contact the jurisdiction.

Current Studies			
Study	Description	Jurisdiction	Status
Stormwater Management Program	Charleston County has developed and is in the implementation phase of a stormwater management program to address stormwater quantity and quality concerns throughout the community. The county has entered into intergovernmental agreements with the City of Isle of Palms, Town of Sullivan's Island, City of Folly Beach, Town of James Island and Town of Lincolnville for the stormwater management program development and implementation. Drainage improvements identified through the stormwater management program and/or the stormwater master planning efforts are considered as projects under this plan as if listed individually herein	Charleston County, Isle of Palms, Sullivan's Island, Folly Beach, James Island and Lincolnville	Ongoing
Isle of Palms Drainage Study	A comprehensive drainage study of the entire island emphasizing problem areas and outfall capacity is being conducted.	Charleston County, Isle of Palms	Ongoing
St. Andrews Canal Flood Control Study	Initial reconnaissance phase activities are being performed for this study to identify flooding and drainage problems in the watershed and to support development of hydrologic and hydraulic models of the existing flood conditions.	Charleston County/U.S. Army Core of Engineers	Ongoing
Snowden/Longpoint Road	A survey of existing conditions and flooding conditions will be performed to determine the design of a future drainage improvement project. This scenic highway suffers from a lack of maintenance and a substandard drainage system. Coordination of efforts will involve the Town, Charleston County, and the S. C. Department of Transportation.	Charleston County/Town of Mount Pleasant/SC DOT	Coordination ongoing with SCDOT about possible solutions. DOT Completed roadside ditch work in 2016
Dupont and Wappoo (DuWap) West Ashley area	The City of Charleston and Charleston County have a MOU to study this area together. From this study, Charleston County will implement this area as a Special Protection Area which will require 100 year volume control on development and re-development projects, both private and public.	Charleston County/ City of Charleston/ SCDOT	Field data collection
Signal Point	Charleston County has surveyed this two mile drainage system and has now contracted with an engineering firm to study and provide recommendations for areas to improve drainage.	Charleston County/ City of Charleston/ SCDOT	Design and Permits
Calhoun West Preliminary Engineering Report for Flood Reduction	This study will provide conceptual engineering services for the Calhoun West Drainage Basin, an approximately 600 acre basin bounded by King, Bee, Murray, and Lockwood Boulevards which has been a historically flood-prone area. Initial analysis indicates that a deep tunnel/pumped system will be needed to address flooding during all tide cycles.	City of Charleston	Ongoing
DuPont/Wappoo Watershed Master Plan	This study will provide a basin -wide model to determine impacts of development on the existing system and suggest possible improvements.	City of Charleston/ Charleston County	Ongoing
Church Creek Flood Reduction Study	A second opinion study of the Church Creek Drainage Basin.	City of Charleston	Ongoing
Westwood - St. Teresa Drive	This study was undertaken to determine if improvements can be made along St. Teresa and Moore Drives and Morton Avenue to alleviate frequent flooding of the streets and yards in the neighborhood.	City of Charleston	Ongoing
Ashley Hall Manor Drainage Study	The City is performing a study to eliminate frequent flooding in the neighborhood. Streets such as Downing, Salisbury, and Birthright experience frequent severe flooding. The study will address if a new outfall may help alleviate the frequency and duration of this flooding.	City of Charleston	Ongoing
Barberry Woods Drainage Study	The City, in conjunction with the Barberry Woods HOA, is commissioning a drainage study to examine the area northeast of Maybank Highway (from Trophy Lakes to River Road). This area includes several flood-prone developments. With the possibility of future development occurring in the basin, a study is required to correct the existing drainage deficiencies and provide guidance for stormwater management in the future development.	City of Charleston	Ongoing

Low Battery Seawall Study	During the study and concept design phase of the repair of the Low Battery, the City initiated a Sea Level Rise Strategy. This strategy mandates that capital projects with a design life of 50 years or greater shall be designed for 2.5' of sea level rise. The City's Department of Public Service and Design Center are working together to incorporate the increased height in the design of the sea wall. This improvement should provide increased protection for the properties along the southern Peninsula from flooding.	City of Charleston	Ongoing
Filbin Creek Drainage Study	Areas adjacent to Filbin Creek encountered flooding during Hurricane Matthew. It is proposed that a Drainage Study of the affected reaches of Filbin Creek be initiated. The study and analysis of Filbin Creek from Virginia Avenue to Ferndale will focus on identifying primary factors causing flooding in the Cameron Terrace and Ferndale neighborhoods adjacent to Filbin Creek. The study will identify and evaluate conceptual improvements that may have the potential to alleviate flooding in these areas.	City of North Charleston	Underway
Pepperhill Drainage Study	A drainage study of the drainage basins affecting the Pepperhill neighborhood, including the McChune Branch, is proposed to identify factors and potential improvements to alleviate flooding conditions experienced in Pepperhill and surrounding areas. Partial FEMA funding.	City of North Charleston	Pending FEMA funding release
Asset Management Program (CMP)/ CIP studies	Other studies as may be developed or conducted as identified through the Town's asset management (CMP)/ CIP program during annual reviews.	Town of Mount Pleasant	Ongoing CIP and CMP programs
Indigo Cut- Snee Farm Study	A study will be performed in this flood-prone area. The entrance road to a major subdivision floods during rain events. In addition, several homes have repeatedly received water damage. Drainage improvements are being evaluated for a portion of this basin as a part of the Whipple Road widening project included basin modifications. Other opportunities are being evaluated as a part of the Town's Asset Management Program.	Town of Mount Pleasant	Project in CIP (unfunded), submitted initial request to State for SRF funding
Hobcaw Point Study	A survey of existing conditions and flooding conditions will be performed to determine the design of a future drainage improvement project. This older neighborhood suffers from a lack of or substandard drainage. Repetitive loss homes are within the project area.	Town of Mount Pleasant	Unfunded
The Groves Study	A survey of existing conditions and flooding conditions will be performed to determine the design of a future drainage improvement project. This older neighborhood suffers from substandard drainage systems.	Town of Mount Pleasant	Unfunded
Old Village- Business District Study	A survey of existing conditions and flooding conditions will be performed to determine the design of a future drainage improvement project. This older neighborhood suffers frequent flooding due to substandard drainage.	Town of Mount Pleasant	Unfunded
Shemwood I Study	A survey of existing conditions and flooding conditions will be performed to determine the design of a future drainage improvement project. This older neighborhood suffers from a lack of or substandard drainage. Repetitive loss homes are within the project area.	Town of Mount Pleasant	Unfunded
Hidden Lake Studies	Two studies are being evaluated. One will involve two drainage studies - one for water quantity and one for water quality. The Water Quantity study will evaluate the current basin conditions against the original basin model to predict flood conditions and any potential impacts from upstream development. The second study for Water Quality impacts will be undertaken to determine the effect, if any of upstream commercial development and residential activities on the neighborhood's lake system.	Town of Mount Pleasant	Study conducted for upstream development project. Upstream pond improvements are being installed by developer
Infrastructure Assessment and Drainage Canal Study	A sampling of representative public drainage systems will continue to identify and prioritize areas where the drainage system was experiencing pipe failures, erosion, siltation, and other structural problems. This survey would be used to identify and perform systems repairs, replacements, and drainage channel rehabilitation projects. Three surveys have been initially identified, the Shemwood II system, Sloan Park Canal, and the Brecon Road canal. Other surveys are identified through the Town's Critical Maintenance Program (CMP).	Town of Mount Pleasant	Year one funding allocated in CMP. Surveys for (2) canals are in process.
Old Mount Pleasant Study	A survey of existing conditions and flooding conditions will be performed to determine the design of a future drainage improvement project. This older neighborhood suffers frequent flooding due to substandard drainage.	Town of Mount Pleasant/ SCDOT	Phase I evaluation underway
Shem Creek Watershed Study	High level study of priority watershed to identify possible pollution sources and framework for future mitigation efforts	Town of Mount Pleasant	Initial study in progress

Completed Studies			
Study	Description	Jurisdiction	Status
St. Paul's Area Drainage Study	This project involves a drainage study for the St. Paul's community. The project is being funded by the Charleston County Transportation Sales Tax Program.	Charleston County	
Legareville Drainage Study	This project involved drainage improvements for this Legareville community on Johns Island. The funding was provided by the Charleston County Transportation Sales Tax Program	Charleston County	Completed
Master Drainage and Floodplain Management Plan	This comprehensive plan identified all stormwater drainage facilities for most areas within the City at the time of its completion. The plan includes an inventory and hydraulic analysis of existing drainage facilities with recommended improvement projects based on those findings. The City continues to use the plan as a valuable guide in prioritizing and implementing current and future drainage improvement projects throughout the City.	City of Charleston	
Peninsula Seawall Study	A study to investigate the condition and construction of the seawall along Murray Boulevard and E. Battery (known as "The Battery") and to make recommendations for the method of repair and/or construction has been completed. The city has entered into a contract for engineering services to prepare bid documents for repairing two sections of the high seawall from its northern end on E. Battery through the transition section located at the intersection of Murray Boulevard and E. Battery. Additional funds must be acquired to repair the remaining section, which extends along Murray Boulevard from E. Battery to Tradd Street.	City of Charleston	
Ashley Villas Drainage Study	Drainage Study of the Ashley Villas neighborhood to identify possible solutions to historically recurring back yard and some structure flooding.	City of North Charleston	
Waterview Circle Drainage Study	Drainage Study of the outfalls at Waterview Circle in Evanston Estate to evaluate potential to improve street flooding and garage flooding.	City of North Charleston	
Oak Bluff on Crossroads Drive Drainage Study	The City of North Charleston commissioned a study of the flooding problems at Oak Bluff on Crossroads Drive and related drainage problems near Northwoods Mall during 2005 (Wise, 2005, October 7).	City of North Charleston	
Accabee Drainage Study	The City of North Charleston commissioned a study of the flooding problems in the Accabee subdivision where the drainage system overflows during heavy rains.	City of North Charleston	
Jacksonville/Carner Drainage Improvement	The City of North Charleston initiated a drainage study of the intersection of Jacksonville Road and Carner Avenue. This study sought to identify solutions to recurring street flooding in this area. The study and design of improvements has been completed. While easement acquisition was underway, the removal of shipping containers from adjacent property allowed the City to locate and clean the old drainage facilities and the intersection is now draining. Construction no longer necessary.	City of North Charleston	
Indigo Cut- Snee Farm Study	A study will be performed in this flood-prone area. The entrance road to a major subdivision floods during rain events. In addition, several homes have repeatedly received water damage. Drainage improvements are being evaluated for a portion of this basin as a part of the Whipple Road widening project included basin modifications. Other opportunities are being evaluated as a part of the Town's Asset Management Program.	Town of Mount Pleasant	Study/ PER completed

Current Projects			
Project	Description	Jurisdiction	Status
West 9th Street Extension / Red Sunset Lane Drainage	Improvements to alleviate flooding at high tide. Funding from the Charleston County Transportation Committee (CTC) program and managed by CC Transportation Development Department.	Charleston County/SCDOT/ City of Folly Beach	Design, easement acquisition and permitting
45 th - 52 nd Avenue Drainage Improvement Project	This is the second phase of a large scale drainage project to help eliminate the most severe drainage problems within the City.	Charleston County/City of Isle of Palms	The City has received bids and finalizing funding for this project.
Accabee Drainage Improvements Phase I	Phase I of drainage improvements recommended in the Accabee Drainage Study. Funding from City and Charleston County Transportation Sales Tax Program. Easement acquisition has been completed	Charleston County/City of North Charleston	Project is ready to bid pending receipt of SCDOT encroachment permit.
Accabee Drainage Improvements Phase II	Phase II of drainage improvements identified in the Accabee Drainage Study	Charleston County/City of North Charleston	This project is in easement acquisition.
East Dolphin Channel Improvements	The drainage channel adjacent to East Dolphin Street experiences significant recurring erosion on the banks, threatening the fences and back yards of homes on Spaniel Drive and Jockey Court. The channel is approximately 10 feet deep with steep banks. The proposed project will install approximately 125 LF of 8' x 4' box culvert, approximately 880 LF of keystone retaining wall system on the East side of the channel, and a terraced, landscaped slope on the west side of the channel.	Charleston County/City of North Charleston	Complete (check with NC on dates)
Union Heights Drainage Improvements Phase III	Phase III of ongoing drainage improvements in the Union Heights area recommended in the Union Heights Drainage Study prepared by the USACOE. Funding for Phase III is from the Charleston County Transportation Sales Tax Program.	Charleston County/City of North Charleston	Easement acquisition is underway.
Snee Farm- Farm Quarter Outfall Channel Reconstruction and Stabilization	This project involves surveying existing flow conditions and sediment impacts to this outfall canal that serves a large portion of the Snee Farm subdivision. Canal reconstruction was previously conducted in 2000, however the system has significant erosion and sediment impacts. Engineering study is funded for FY 09/10 which will include measures to install more permanent bank and channel stabilization techniques. Project is in design phase with construction currently partially funded by Charleston County and Mount Pleasant.	Charleston County/Town of Mount Pleasant	Design Phase with Charleston County, working on permitting with ACoE.
Snowden Community Drainage Study and Improvements	This community experiences flooding due to inadequate drainage. This project consists of an evaluation of the existing systems and implementation of improvements.	Charleston County/Town of Mount Pleasant	
Isaac German Canal Drainage Basin Project	The study to determine drainage in the eastern Rifle Range Road area has been completed. A joint County of Charleston/Town of Mount Pleasant project improved the downstream end of Rifle Range Road (approximately 2,040 acres of watershed). Construction of a major roadway crossing improvement (Porcher Bluff Road) has been completed. Coordination efforts will be needed with the Town of Mount Pleasant. County is looking at efforts to begin the designation of this watershed as a Special Protection Area as per the Charleston County Stormwater Program Permitting Standards and Procedures Manual.	Charleston County/Town of Mount Pleasant	Funding sources are being pursued
Gulf Drive Drainage Improvement Project	Charleston County has completed a preliminary investigation of the drainage of this area. The County is coordinating with the Town of Mt. Pleasant regarding cost sharing and using the Town's easements.	Charleston County/Town of Mount Pleasant	Staff is reviewing alternate flow routes.
Country Manor Drive-Waters Edge	This project involves the piping of a swale easement to eliminate standing water, flooding of yards, and to improve drainage conditions for an adjacent area of Unincorporated Charleston County.	Charleston County/Town of Mount Pleasant	Staff is reviewing alternate flow routes.
Simmons Hill Community Drainage Improvement Project	The community is experiencing flooding due to inadequate public drainage systems. This project consists of evaluation of the existing systems and implementation of improvements.	Charleston County/Town of Awendaw	Preliminary survey work for this project is underway.
Parkers Ferry / Penny Creek Drainage	Improvements to outfall. Funding from Charleston County Transportation Sales Tax Annual Allocation program and managed by CC Public Works Department.	Charleston County	Right of way acquisition.
New Drainage Improvement Projects	All drainage projects, which are identified by or are a result of damages incurred from any natural disaster and/or hazard events of the type described within the <i>Charleston Regional Hazard Mitigation Plan</i> .	Charleston County	
Air Harbor Subdivision Drainage Project	Design improvements and funding mechanisms for this project are related to the St. Andres Canal project.	Charleston County	
McClellanville Area Drainage Project	Drainage in the McClellanville area is being evaluated to determine potential ways to reduce the frequency of flooding in this community. Easements acquired by the USDA Soil Conservation Service (SCS) have been cleared by the County. Various small basin improvements are being tied into the canal system.	Charleston County	

Gapway Canal	The scope for engineering design and construction need to be developed. Drainage easement needs to be acquired for a major portion of the canal.	Charleston County	A preliminary review of the existing drainage system is being conducted.
Phillip's Community Drainage Improvement Project	The community is experiencing flooding due to inadequate public drainage systems. This project consists of evaluation of the existing systems and implementation of improvements. The funding is being provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Design and easment acquisition are underway.
Buck Hall Community Watershed Improvement Project	The community is experiencing flooding due to inadequate public drainage systems. This project consists of evaluation of the existing systems and implementation of improvements.	Charleston County	Initial field surveys have been completed and easement requirements are being conducted.
Red Top Community Watershed Improvement Project	This community experiences flooding due to inadequate drainage. This project consists of an evaluation of the existing systems and implementation of improvements.	Charleston County	
Hoot Owl Watershed Improvements	This community experiences flooding due to inadequate drainage. This project consists of an evaluation of the existing systems and implementation of improvements.	Charleston County	
Middle Street Drainage	This project involves drainage improvements for a Sullivan's Island neighborhood near Station 24th Street. The funding is being provided by the Charleston County Transportation Sales Tax Program and managed by CC Transportation Development Department. Seven drainage basins have been identified by a consultant for improvement. Currently, two of the seven phases of the improvement have been constructed. The remaining five phases are pending funding.	Charleston County/Sullivan's Island	Done
Station 18.5 and 19 drainage pipe replacement.	Project includes replacement of colapsed pipes between middle street and outfalls in this area.	Charleston County/Sullivan's Island	In planning stage and funding has been applied for
Osceola Ave Drainage Project	This project involves drainage improvements for this street on Sullivan's Island. The funding is being provided by the Charleston County Transportation Sales Tax Program and managed by CC Transportation Development Department.	Charleston County/Town of Sullivan's Island	Initial Project completed will complete additional improvements in 2017.
Thompson Ave Drainage Project	This project involves drainage improvements for this street on Sullivan's Island. The funding is being provided by the Charleston County Transportation Sales Tax Program and managed by CC Transportation Development Department.	Charleston County/Town of Sullivan's Island	Done
Brickyard Drainage Improvement Phase I	The private consultant hired by the City of North Charleston has completed a comprehensive drainage study of this drainage basin. Charleston County will perform the construction work. This project will involve the installation of larger drainage pipes, retention ponds, and the cleaning and widening of ditches throughout these three neighborhoods to address problems of standing water in streets and yards that has been going on for 30-40 years. Property acquisition for easements is needed.	Charleston County/City of North Charleston	Three regional retention ponds have been constructed. Further projects are under evaluation for feasible alternatives due to minimal space available.
Manor Road Drainage Project	This project involves drainage improvements for this street in the Town of Hollywood. The funding is being provided by the Charleston County Transportation Sales Tax Program and managed by CC Transportation Development Department.	Charleston County/Town of Hollywood	Design and easment acquisition are underway.
John's Island Canal North of Maybank Highway Watershed Improvements Project	This area experiences flooding due to inadequate drainage. This project consists of an evaluation of the existing system and implementation of improvements.	Charleston County	
Tiger Swamp Community Watershed Improvements	This community experiences flooding due to inadequate drainage. This project consists of an evaluation of the existing system and implementation of improvements. Charleston County is looking at efforts to begin the designation of this watershed as a Special Protection Area as per the Charleston County Stormwater Program Permitting Standards and Procedures Manual. Coordination efforts will be needed with the City of Charleston.	Charleston County	

Hut/ Abram Road Design	This project involves road design for Johns Island. The funding is being provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Easement plans are underway.
Wilson Cemetery Canal	Surveying activities have been completed. Canal design, environmental permitting, drainage easement identification and acquisition and construction must be completed. The existing drainage system is currently maintained by County government.	Charleston County/Town of Awendaw	
Alert Road / N. Carolina Road Drainage Canal	Improvements to canal and easement dedication. Funding from Charleston County Transportation Sales Tax Annual Allocation FY 15 program and managed by CC Transportation Development Department.	Charleston County/Town of McClellanville	Design scope and fee being negotiated with engineering consultant.
I'On Avenue Drainage	Improvements to drainage along I'On Ave. Funding from Charleston County Transportation Sales Tax Annual Allocation FY 15 program and managed by CC Transportation Development Department.	Charleston County/Town of Sullivan's Island	Completed
Pinckney Street Drainage Repairs	Improvements to drainage on town parcel. Funding from Charleston County Transportation Sales Tax Annual Allocation FY 15 program and managed by CC Transportation Development Department.	Charleston County/Town of McClellanville	Completed
Hanahan Canal	Canal improvements managed by Charleston County Public Works. Funding from Charleston County Transportation Sales Tax Annual Allocation FY 15 program.	Charleston County	
Market Street Drainage Project	The Market Street Drainage Improvements project is divided into three phases. Construction contract for Phase I was awarded in September 2006 and completed in September 2007. Phase I consisted of connecting the surface drainage on Concord Street to the existing pump station, upgrading the pump station controls, and installing an additional pump. Phase II, the construction of tunnels & shafts and an emergency outfall, was completed in August 2014. The design for Phase III (surface collection system) should be complete late 2017 with construction starting early 2018. This project will reduce flooding in the Market and adjacent areas.	City of Charleston	Phase II was completed in 2014. Phase III is expected to be completed by 2021.
Spring/ Fishburne Drainage Project	Engineering design is complete for this project, which will alleviate the flooding in the combined Spring and Fishburne Drainage Basins, including most of the Crosstown. Combined, the drainage basins are the largest on the Peninsula of Charleston and the drainage project is the largest that the City has undertaken to date with an estimated cost of \$154 million. The first phase was completed in April 2013. Currently, Phases 2 & 3 are underway with completion expected in 3rd quarter 2017 and 2nd quarter 2019, respectively. Phase 4, wetwell & outfall, is expected to begin in 2018 and be completed in 2020, with Phase 5, the pump station, to commence directly thereafter.	City of Charleston	The project is estimated to be complete by 2021.
Forest Acres Drainage Project	This project includes the Forest Acres drainage basin and a portion of the 5th Avenue drainage basins. Design is almost complete on Phase 1 and Phase 2A of the improvements. The recommended improvements include removing the existing pump station, constructing a combination of dual box culvert and open channels, and combining the outfalls from the Forest Acres and 5th Avenue drainage basins.	City of Charleston	Phase 1 is under construction, to be completed early 2018.
Greenleaf	Rerouting of collapsed drainage pipe currently located under a building.	City of Charleston	This project is estimated to be completed by fall 2017.
Peach Blossom Lane	This project is for the connection of an isolated portion of the existing drainage system that has no outfall to connect to the existing system to discharge to an available outfall of Beresford Creek.	City of Charleston	This project should be completed by the end of 2017.
Clayton Drive	Installation of an improved outfall to alleviate frequent flooding.	City of Charleston	This project is estimated to be completed by fall 2017.
Pipe repair and lining: Ashley, Colonial, and Tradd Streets	Partial lining (CIPP) of failing clay pipe in the streets. The storm drain was cleaned and inspected. Where needed, point repairs and/or CIPP lining was used to stabilize the approximately 150-year-old clay pipe.	City of Charleston	This project is estimated to be completed by fall 2017.
Carol Street/Charleston Municipal Golf Course/Canal Street Drainage Project	The drainage system is currently maintained by local governments. A portion of this project was completed in 2002. The City of Charleston will complete the Golf Course portion of this project.	City of Charleston/Town of James Island	

Fleming Road/ Howle Avenue Drainage Project	This project will require drainage design, surveying, construction plans, drainage easement identification and acquisition, environmental permitting and construction activities. Fleming Road and Howle Avenue are state maintained roads. Drainage system and outfall capacity needs to be increased.	City of Charleston/Town of James Island/ SC DOT	
Grimball Road/ Hazard Land Watership Improvements Project	The preliminary drainage basin study has been completed and drainage easement needs identified. The County realigned drainage ditches at the Elementary School located at Grimble Road.	Town of James Island	Additional drainage easements need to be acquired and
Yorktown Drainage/ Bishop Gadsden Pipe Installation	The installation of an arch drainage culvert and improvements to road crossings associated with this project has been completed. A Hazard Mitigation Grant Program application for this project was denied. The Bishop Gadsden pipe installation phase has been completed for this project. The remainder of the project needs funding and additional easement acquisition.	Town of James Island	
Isle of Palms City-wide Drainage Improvements	Continue with efforts to implement city-wide drainage improvements as outlined by studies done by E. M. Seabrook.	City of Isle of Palms	
53 rd - 57 th Avenue Drainage Improvement Project	This is a phased project where storm water collection lines that feed into the Wild Dunes drainage system are being constructed.	City of Isle of Palms	The first phase of construction of stormwater infrastructure inside the Wild Dunes community has been completed.
24 th , 29 th and Hartnett Boulevard Drainage Improvement Project	This continuing project involves vacuum cleaning of open ditch systems where it is not feasible to maintain the ditches with conventional methods.	City of Isle of Palms	
Northwoods Point Drainage Improvements	This project will involve a redesign and a redirection of stormwater to reduce flooding potential in the Northwoods Point & Northwoods Mall commercial areas.	City of North Charleston	Design Complete, property owner concurrence and easements needed.
Ashley Villas Drainage Improvements Phase II	Phase II of drainage improvements identified in the Ashley Villas Drainage Study.	City of North Charleston	Design Complete, easement acquisition underway.
Forest Hills II CMP Replacement Phase II	Phase II of project to replace deteriorated CMP within the Forest Hills II subdivision	City of North Charleston	Preparing for Bid
Ashley Villas Drainage Improvements Phase III	Phase III of drainage improvements identified in the Ashley Villas Drainage Study. (Final Phase)	City of North Charleston	Design in progress.
Collins Road Culvert Improvements	Project to replace undersized culvert under Collins Road	City of North Charleston	Design and permitting
New Drainage Improvement Projects	All drainage projects, which are identified by or are a result of damages incurred from any natural disaster and/or hazard events of the type described within the <i>Charleston Regional Hazard Mitigation Plan</i> .	Town of Mount Pleasant	Projects being assessed via CMP/ CIP program - updated annually.
Brookgreen Phase III Drainage Project	This is the final phase of the Brookgreen Drainage improvements. Phases I and II have been completed. Repetitive loss homes exist within the project area.	Town of Mount Pleasant	Unfunded
Mathis Ferry Road Drainage Improvements	This project involves a drainage study, design, and installation of storm drain pipes in roadside ditches along Mathis Ferry Road. This area has not received ditch maintenance due to heavy traffic. The ditches are obstructed. Flooding of this major roadway is occurring and a health hazard exists due to standing water. The S. C. Department of Transportation has been asked to participate. Cross line pipe replacement was completed in 2007.	Town of Mount Pleasant/SC DOT	Remainder of project is on hold pending acquisition of additional funding.
Implementation of Asset Management Capital Maintenance Program (CMP) and Capital Improvement Program (CIP)	Based upon initial system inspections the Town will begin to schedule replacements or rehabilitation of failing infrastructure to mitigate system failures during critical rain events. Program includes ranking and prioritizing critical maintenance and improvement needs over a 5- year window. Funding mechanisms are under investigation to support this program. Identified projects costing over \$100,000.00.	Town of Mount Pleasant	FY 17/18 projects are in process, and are 80% completed.
2016-2017 Asset Management Replacement Program and Capital Maintenance Program	Projects include Rivertown Phase 3 Section 2, Wando East/ Lakes, Water Quality Monitoring Program - year 3, Drainage Canal rehabilitation survey/ design - Whipple Sports Complex and Mill Tract (North Branch).	Town of Mount Pleasant	FY 16/17 projects are 80% complete.
2017-2018 Asset Management Replacement Program and Capital Maintenance Program	Projects include Pipe inspections, cleaning and rehabilitation/ replacements for various pipes though out the Town , Water Quality Monitoring Program - year 4, Drainage Canal rehabilitation - Whipple Sports Complex and Mill Tract (North Branch) - Repairs.	Town of Mount Pleasant	FY 17-18 projects have been identified and funded.

Swale Regrading Projects	This project will involve the regarding of several rear yard drainage swales in locations throughout Mount Pleasant. These swales are non-functional and are causing property damage. Systems will need to be identified and added to GIS.	Town of Mount Pleasant	Unfunded. A New inspector has been hired to review these systems during construction.
Old Village - Pitt Street Business District Drainage Improvements	Project includes installation of larger drainage system to collect flood waters in this historic area. Area is flood prone due to undersized pipes- this is phase II of an original SW Program project. Will be conducted along with Water and Sewer improvements.	Town of Mount Pleasant/ Mount Pleasant Waterworks	Design is complete, project should begin FY 17-18.
Old Mount Pleasant Drainage Improvements	Project involves drainage improvement projects as selected by Town Council for development in this are of Town will old, substandard infrastructure. May be completed in smaller phased projects.	Town of Mount Pleasant	Under consideration/ review for scoping and funding.
Snee Farm (SRF)	Subdivision wide project to address up to (3) flood prone areas with improvements, replace or rehabilitate failing piped infrastructure and ditch systems, install water quality best management practices. Based upon Indigo Cut/ Snee Farm Study (PER) findings. Project includes priority repairs/ projects only.	Town of Mount Pleasant	Funding being sought though SRF program. Design/ Permitting underway.
Bayonne Avenue Drainage Improvement Project	This project will provide drainage infrastructure between stations 26 and 26 2 where no drainage system currently exists. This area routinely floods during heavy rainstorms.	Town of Sullivan's Island	The engineering design for the project is complete, and permitting processes have begun.
Sullivan's Island Drainage Improvements	This project involves the implementation of the phased drainage improvements for the island. Funding sources are being pursued.	Town of Sullivan's Island	
Station 18 and 18.5 Drainage	This project includes engineering and implementation of drainage improvements and possible revitalation of pump and wetwell at station 18.	Sullivan's Island	Engineering is in progress.
Entire Sullivans Island	Compete study of all drainage infrastructure and areas without infrastructure to develop a plan to improve all drainage on Sullivan's island.	FEMA/Town of Sullivan's Island	Grant has been applied for.

Completed Projects			
Project	Description	Jurisdiction	Status
Angel Oak Elementary Drainage	Addition of storm drainage infrastructure at the entrance to the school to alleviate standing water. Funding from the Charleston County Transportation Committee (CTC) program and managed by CC Transportation Development Department.	SCDOT/Charleston County	Completed
Joy Avenue Drainage	Construction of this project was completed in 2007. The improvements are being monitored.	Charleston County	Completed
Legareville Road Watershed Improvement Project	This project consisted of evaluating the existing systems and implementing improvement for an area where flooding occurred due to inadequate drainage systems. A feasibility study has been completed and outlines three alternatives addressing the local flooding problem. This project has been completed.	Charleston County	Completed
Lauden Street	This project involved drainage improvements for an Isle of Palms neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program. This project has been completed.	Charleston County	Completed
Sparrow Drive	This project involved drainage improvements for an Isle of Palms neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Completed
Middle Street Drainage	This project involved drainage improvements for a Sullivan's Island neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program. Coordination with SC DOT is complete and the project coordination is underway with the Town of Sullivan's Island.	Charleston County	Completed
Lincoln High School Area	This project involved drainage improvements for the Lincoln High School area in McClellanville. The funding was provided by the Charleston County Transportation Sales Tax Program. Permitting and easement acquisition is complete and construction is underway.	Charleston County	Completed
3rd Street East at East Huron Avenue	This project involved drainage improvements for this Folly Beach neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Completed
4th Street West at West Ashley Avenue	This project involved drainage improvements for this Folly Beach neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Completed
6th Street East	This project involved drainage improvements for this Folly Beach neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Completed
East Erie at 10th Street Drainage Improvements	This project involved drainage improvements for this Folly Beach neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program. Construction is underway.	Charleston County	Completed
Parish Place Ditch Improvements	This project sought to eliminate a hazardous section of ditch located near an elementary school as well as eliminate ongoing erosion problems. A section of the ditch was piped.	Charleston County/Town of Mount Pleasant	Completed
Clubhouse Ditch- Hidden Cove	This project involved increasing the size of a detention pond, regarding an existing ditch, and adding additional pipes to a street crossing to allow the drainage system to handle water from a 10-year storm event. Several properties are flooded during rain events. This was a joint project between Charleston County Public Works and the Town.	Charleston County/Town of Mount Pleasant	Completed
Porcher Bluff Road	This project involved drainage improvements for this Mt. Pleasant neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County (Transportation Sales Tax)	Completed
Hamlin Drainage Improvements	This project consisted of re-routing drainage lines to reduce localized flooding. The easements have been acquired and the construction work is complete.	Charleston County/S.C. DOT	Completed
Cowpens Canal Drainage Project	Road cross pipes have been upgraded. The County received negative comments from environmental agencies during the permit process.	Charleston County	Completed
27th Avenue Ditch System Project	This project involved the repair of the ditch system on 27th Avenue and Hartnett Avenue.	Charleston County/City of Isle of Palms	Completed
Isle of Palms Marina and Fire Station 2 Stormwater Collection Boxes	For this project, the county placed two stormwater collection boxes at the Isle of Palms Marina at the terminus of 41st Avenue and the newly constructed Fire Station 2 at #44 Forty-First Avenue.	Charleston County/City of Isle of Palms	Completed
Vestry Drive Drainage Project	Improvements to the piping and ditch system have been completed. The City and County of Charleston worked together to fund this project. The improvements are being monitored.	Charleston County/City of Charleston	Completed

Memminger Hall Subdivision	This project involved drainage improvements for this West Ashley neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County Transportation Sales Tax	Completed
Sauldam Road Drainage	This project involved drainage improvements for a St. Paul's neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Completed
Scotia, Baker, and Morrison Drainage	This project involved drainage improvements for this McClellanville neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Completed
East Ashley at 2nd Street Drainage Improvements	This project involved drainage improvements for this Folly Beach neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Completed
West Huron Avenue Drainage Improvements	This project involved drainage improvements for this Folly Beach neighborhood. The funding was provided by the Charleston County Transportation Sales Tax Program.	Charleston County	Completed
Bees Ferry Road Drainage Improvement	The project included multiple drainage improvements, road widening, and other improvements to the entire 4.5 mile length of Bees Ferry Road from Savannah Highway (U.S. 17) to Ashley River Road (S.C. 61). The project was requested by the City of Charleston and was funded by the Charleston County Transportation Sales Tax Program. Partial funding for the project was approved by voters in the second Transportation Sales Tax bond referendum.	Charleston County	Completed
Accabee Drainage Improvements Phase I	Phase I of drainage improvements recommended in the Accabee Drainage Study. Funding from City and Charleston County Transportation Sales Tax Program. Easement acquisition has been completed	Charleston County/City of North Charleston	Completed
East Dolphin Channel Improvements	The drainage channel adjacent to East Dolphin Street experiences significant recurring erosion on the banks, threatening the fences and back yards of homes on Spaniel Drive and Jockey Court. The channel is approximately 10 feet deep with steep banks. The proposed project will install approximately 125 LF of 8' x 4' box culvert, approximately 880 LF of keystone retaining wall system on the East side of the channel, and a terraced, landscaped slope on the west side of the channel.	Charleston County/City of North Charleston	Completed
Monterey Drive Drainage Project	This project involves drainage improvements for this City of North Charleston street. The funding is being provided by the Charleston County Transportation Sales Tax Program and managed by CC Transportation Development Department.	Charleston County/City of North Charleston	Completed
Brookdale Canal Drainage Improvements	Project to pipe section of existing canal in the Brookdale section of Forest Hills 2 with significant recurring erosion issues.	Charleston County/City of North Charleston	Completed
Town Creek Drive Drainage Improvement Project	The City of Charleston completed drainage improvements designed by B.P. Barber to install catch basins and pipe to prevent significant overland flow from the right-of-way through private property to a marsh behind the property. Minor damage would occur to the garage of the residence. Project was completed in 2011.	City of Charleston	Completed
Rebellion Road	Installation of 4 Checkmates to prevent tidal flooding and installation of pipe lining (CIPP) to preserve the existing CMP outfalls.	City of Charleston	Completed
Barre and Canal Streets	Installation of 2 inlets and piping.	City of Charleston	Completed
White Chapel	Replacement of collapsed CMP drainage system.	City of Charleston	Completed
Pipe repair: Rutledge and Ashley at Colonial Lake	The existing clay pipe in both streets was cleaned, inspected, and lined (CIPP) as part of the renovation of Colonial Lake. The work occurred from Beauvain to Broad Streets.	City of Charleston	Completed
Replacement/installation of check valves	Existing Tideflex valves were replaced at Colonial Street, and the outfalls at Rutledge Avenue and Limehouse Street installed with Checkmate valves to prevent tidal intrusion during high tides. New check valves were installed at the Water Street	City of Charleston	Completed
Wagner Terrace pipe lining	Failing clay storm drain was repaired and/or lined to extend the service life of the system. The depth of the system made a CIPP repair the only viable alternative.	City of Charleston	Completed
902 Preston Drive	Installation of 2 inlets and berms to reduce flow of water from ROW onto private property.	City of Charleston	Completed
18 Formosa Drive	Installation of sag (vertical curve) in road to allow water to drain from one side to the other to alleviate flooding in front of residence.	City of Charleston	Completed
12 Water Street	Installation of new catch basin to capture water collecting along curb.	City of Charleston	Completed
Burns Lane	Installation of 376 LF of 18-in. RCP to replace failed brick arch in Burns Lane in conjunction with new C of C coliseum.	City of Charleston	Completed

Bridgepointe Drainage Improvement Project	The City of Charleston completed the Bridgepointe Drainage Improvement Project to alleviate flooding problems at the Bridgepointe Townhomes in the Church Creek Drainage Basin. Approximately 350 linear feet of 12'x4' concrete box was installed to improve stormwater conveyance from the detention ponds adjacent to the townhomes.	City of Charleston	Completed
Calhoun/ Concord Street Deep Tunnel Connection	This project connected Calhoun Street east of the railroad track at Washington and Concord Street from Charlotte Street to Laurens Street to the Concord Street Stormwater Pump Station that was completed in 2000. This project alleviated flooding in these areas, and was a component of Division I of the Market Street Drainage Improvements, construction of which was completed September 2007.	City of Charleston	Completed
Byrnes Down Drainage Project	The City of Charleston completed the drainage improvements designed by B.P. Barber and Assoc, Inc. as detailed in the <i>Storm Drainage Study of the Byrnes Downs Drainage Basin</i> , dated January 2001. Construction contract was awarded to Chandler Construction in April 2006. Substantial completion was achieved in February 2007 with full project close-out in May 2007.	City of Charleston	Completed
Church Creek Drainage Improvement Project	The City of Charleston completed the drainage improvements recommended by the Church Creek Watershed Master Drainage Plan. The project consisted of constructing approximately 2,650 linear feet of channel and installing approximately 1,850 linear feet of reinforced concrete box. The project should alleviate some persistent, serious flooding in the Shadowmoss and Hickory Hill neighborhoods and was complete December 2007.	City of Charleston	Completed
MUSC Pump Station Improvements	The pump station serving the areas immediately adjacent to the new hospitals on the west side of the peninsula was recently upgraded as part of the hospital construction undertaken by MUSC.	City of Charleston/MUSC	Completed
Town Creek Drive Drainage Improvement Project	The City of Charleston completed drainage improvements designed by B.P. Barber to install catch basins and pipe to prevent significant overland flow from the right-of-way through private property to a marsh behind the property. Minor damage would occur to the garage of the residence. Project was completed in 2011.	City of Charleston	Completed
Rebellion Road	Installation of 4 Checkmates to prevent tidal flooding and installation of pipe lining (CIPP) to preserve the existing CMP outfalls.	City of Charleston	Completed
Barre and Canal Streets	Installation of 2 inlets and piping.	City of Charleston	Completed
White Chapel	Replacement of collapsed CMP drainage system.	City of Charleston	Completed
Pipe repair: Rutledge and Ashley at Colonial Lake	The existing clay pipe in both streets was cleaned, inspected, and lined (CIPP) as part of the renovation of Colonial Lake. The work occurred from Beaufain to Broad Streets.	City of Charleston	Completed
Replacement/installation of check valves	Existing Tideflex valves were replaced at Colonial Street, and the outfalls at Rutledge Avenue and Limehouse Street installed with Checkmate valves to prevent tidal intrusion during high tides. New check valves were installed at the Water Street outfall and on William Ackerman Lane.	City of Charleston	Completed
Otranto Villas Drainage Project	This project was intended to relieve flooding of several repetitive loss properties. A Flood Mitigation Assistance grant was received for this project.	City of North Charleston/City of Hanahan, Berkeley County	Completed
College Heights Drainage Improvements Phase I	This project consisted of enlarging culverts and ditch sections and creating detention between Otranto Road and Highway 78. The flood potential for Auburn Drive, which has two repetitive flood loss properties, has been relieved as a result of this project.	City of North Charleston	Completed
Evanston Estates Drainage Improvement Project	This project involved the installation of piping along Renee Street to improve drainage in this area that holds water.	City of North Charleston	Completed
Union Height Drainage Improvements - Phase II	Phase II near the intersection of Spruill and Arbitus Avenues. This project is funded under the Community Development Block Grant (CDBG) program. Future phases of this project will continue as funding is available.	City of North Charleston	Completed

Hilda Street Drainage Improvements	The City has contracted for drainage pipes to be installed on Hilda Street to tie into a new drainage system being installed for the Bonds Ave School. This will alleviate standing water in the roadway at this location.	City of North Charleston	Completed
South Rhett Drainage Improvements	This project will pipe and improve a roadside ditch along South Rhett Avenue that has been subject to erosion along the edge of the pavement.	City of North Charleston	Completed
Crossroads Drive Drainage Improvements	Improvements to the drainage system along Crossroads Drive that were recommended in the drainage study were designed and constructed.	City of North Charleston	Completed
Industrial Avenue Regional Detention Pond	Regional detention pond recommended in the Brickyard Creek Drainage Basin Study. The City completed acquisition of property for construction of this detention pond.	City of North Charleston	Completed
Deerwood Drive Drainage Improvements	The section of Deerwood Drive generally located between Tyler Street and the Fire Station experiences recurring flooding conditions. This is a low point in the road, however, there is no discernible outfall for the drainage that collects here. This project will construct a drainage outfall to the Salamander Channel.	City of North Charleston	Completed
Pepperdam-Industry Intersection Drainage Improvements	The intersection of Pepperdam Avenue and Industry Drive experiences recurring flooding conditions which render the intersection impassable during significant rain events. This project will install a new piped drainage system to create an alternate outfall location for this intersection.	City of North Charleston	Completed
Northwoods Boulevard CMP Evaluation	The existing Stormwater pipe along Northwoods Blvd. consists of Corrugated Metal Pipe which is exhibiting signs of deterioration and creating recurring sinkholes along Northwoods Blvd. The City is proposing a pipe rehabilitation project. The initial step of the project will be investigation and evaluation of the existing pipe conditions to determine the most effective method of rehabilitation or replacement.	City of North Charleston	Evaluation and Pipe Rehabilitation Completed.
Parkside Drive Drainage Improvements Phase II	Additional drainage improvements on Parkside Drive between Maxwell Street and Iroquois Street.	City of North Charleston	Completed
Jacksonville/Carner Drainage Improvement	Drainage improvements coordinated with redevelopment of property downstream of the Jacksonville/Carner intersection. Improved drainage infrastructure installed.	City of North Charleston	Completed
Constellation Drive CMP Rehabilitation	Relining (concrete spincasting) of failing CMP under Dorchester Road and Constellation Drive.	City of North Charleston	Completed
Morrison Street Drainage Project	This project involves draining water from a low lying area East of Morrison Street to the West side of Morrison Street, and then empties into the marsh.	Town of McClellanville	Completed
Rambler Lane Crossing - Hickory / Rosemead	This project calls for the upgrade of a crossline pipe. The crossline is a choke point for debris during storm events which contributes to flooding of the upstream ditches and yards. Project will require utility relocation, a road cut to install a larger diameter pipe, and downstream bank stabilization.	Town of Mount Pleasant	Completed
Rifle Range Road / Hidden Lakes Outfall Crossing Stabilization	This project installing a headwall where a major ditch channel flows through a piped system under a major town arterial roadway. During Hurricane Gaston water from the upper basin overtopped the roadway and began to undercut the roadways as water tried to channel around the pipe structures. At this time, the piped section has minimum erosion protection. The Town plans to install a concrete headwall to better armor this system and protect the road from failure during a major event. Headwall was installed and is functional.	Town of Mount Pleasant	Completed
Snee Farms Wetlands Restoration and Channel Improvements	This project involves restoring a portion of the headwaters of Boone Hall Creek, which is now a golf course ditch system, to a larger wetlands channel. Project will provide additional water storage during rain events to help reduce flooding of upstream properties (some repetitive loss properties are in this area) and will help improve water quality by filtering run-off pollutants through the new wetlands channel. Due to funding and permitting problems, only a portion of this project was completed in 2007. This project was expanded to include the restoration of a subdivision ditch and outfall channels and possible restoration of a pond outfall near Westos Way. Westos Way pond spillway was reconstructed in 2009.	Town of Mount Pleasant	Completed
Whitehall Terrace	This project is a multiphase project to pipe open drainage ditch system and re-route systems to reduce flooding occurrences in several interior lots of this neighborhood. This project will also provide a safer neighborhood environment by piping the open systems and installing a sidewalk system. Phase I survey and design are complete. A portion of Phase I was completed in 2006. Phase II was completed in 2007. Phase III is underway and scheduled for completion in 2008. Design of Phase IV is complete, funding is being sought and project is scheduled for 2009. Construction of Phase IV was completed in September 2009.	Town of Mount Pleasant	Completed
Laurel Hill Outfall	A drainage improvement project involving the construction of a new outfall canal to redirect stormwater flows from the Ivy Hall/ Carol Oaks area between Gregory Ferry Road and Highway 17 that currently drain into a wetlands that has no outfall.	Town of Mount Pleasant	Completed

Scott Creek / Goblet Canal Piping Project	This project involved a partnership with a private entity to pipe an upper portion of a large canal system. The canal had experienced heavy erosion due to upstream flows and has grown to hazardous proportions with steep slopes and a deep channel. Because of utilities and home locations in the area, channel stabilization was not feasible	Town of Mount Pleasant	Completed
Waterford Outfall Improvements	This project involved the drainage easement acquisition and the installation of larger diameter outfall pipes for this sub basin. A repetitive loss property exists within the project area.	Town of Mount Pleasant	Completed
Snee Farm Project	The existing lake system was retrofitted with three (3) new bridges, existing culverts were replaced and the pond outfall was reconstructed. These improvements relieved frequent flooding in this 800 plus acre subdivision	Town of Mount Pleasant	Completed
Morrison Street Project	This was a project of adding drainage to prevent frequent flooding to a low to moderate income community which had frequently flooded in the streets, houses, and yards.	Town of Mount Pleasant	Completed
Greenhill Drainage Improvement Project	This project was part of a community development block grant to improve drainage in this low to middle income neighborhood. This project included piping of existing open roadside swales and replacement of culverts, significantly improving the drainage in this neighborhood.	Town of Mount Pleasant	Completed
Dovre Drainage Project	This three-part project consisted of adding underground piping, installing a stormwater management pond, and improving an outfall.	Town of Mount Pleasant	Completed
William Street Project	This project to remedy tidal flooding in this area is complete. Several repetitive loss homes are in this area. This project consisted of replacing failed flap gates and some system modifications.	Town of Mount Pleasant	Completed
Outfall Repairs-Charleston National Subdivision	This project consisted of repairing damages to an outfall pipe for this neighborhood. The pipe was damaged and not functioning, thereby reducing the amount of stormwater that could be released from the drainage system. This project also included coordinating contacts and emergency operations with the neighborhood association.	Town of Mount Pleasant	Completed
Sullivan's Island Curb and Gutter Drainage Line Improvement Project	This project involved the replacement of a malfunctioning drainage system along Middle Street with an adequate system to transport storm water to outfalls, and the subsequent replacement of the curb and guttering system currently deteriorating due to the crushed drainpipe beneath it.	Town of Sullivan's Island	Completed
Edwards Park Phase III	Hazard Mitigation Grant Program from Hurricane Floyd was sought to fund this project. The HMGP grant was denied. This project will involve connecting drainage pipes from three small flood prone basins to the Edwards Park Stormwater Pump Station. Several other small sections of this project remain unfunded as of 2006. The Carr Street portion of this project was completed during 2007. A basin study is	Charleston County/Town of Mount Pleasant	Completed 2016/2017
2013-2014 Asset Management Replacement Program and Capital Improvement Program	Projects include Edwards Park Pump Station rehabilitation, Brickyard Bridge Culvert stabilization, and Laurel Grove Pipe repairs, Belle Hall Hibben Phase 4 pipe repairs, and year 1 of Water Quality Monitoring program projects have been funded for 2013-2014.	Town of Mount Pleasant	Complete
2014-2015 Asset Management Replacement Program and Capital Improvement Program	Projects include Whipple Road Area Subdivision pipe rehabilitation and replacements, Wakendaw / Mathis Ferry Road area subdivision pipe rehabilitation and repairs, Hickory Shadows/ Rosemead Pipe rehabilitation and repairs, Water Quality Monitoring Program - year 2, Drainage Canal rehabilitation - year 1.	Town of Mount Pleasant	Complete
2015-2016 Asset Management Replacement Program and Capital Improvement Program	Projects include Whipple Road Area Subdivision pipe rehabilitation - and replacements, Wakendaw / Mathis Ferry Road Phase II area subdivision pipe rehabilitation and repairs, Hickory Shadows/ Rosemead Pipe Phase II rehabilitation and repairs, Water Quality Monitoring Program - year 2, Drainage Canal rehabilitation - year 2.	Town of Mount Pleasant	Complete
Drainage Infrastructure Installation Stations 18 ½ and 19	This project consisted of the installation of adequate drainage where none existed and upgrades of inadequate pipe in an area plagued by flooding.	Town of Sullivan's Island	Completed

Section 7 Adopting Resolution and Jurisdiction-Specific Action Plans

Each government entity that is participating in the Charleston Regional Hazard Mitigation Plan provides an action plan on an annual basis for the activities proposed to be undertaken during the coming year for inclusion in this section of the Plan. The time period for the action plan is a one-year time period unless indicated otherwise on the action plan. The action plans include numerous items that collectively address all 14 of the hazards identified as those to which the Region is potentially vulnerable in this plan.

Participating government entities also provide a status report on the activities proposed for the previous edition of the Plan on an annual basis for inclusion in this section of the Plan. The time period for which the status is provided is indicated on each of these status reports. As is indicated on the status reports, many of the action items are on-going from year-to-year so are on the action plans for the government entity every year. Updates to activities that have potential for different results each year are provided on the status reports.

As was previously discussed in this plan, the Special Purpose Governments have concurrent jurisdictional boundaries with municipalities and/or the County government. The Special Purpose Governments also have statutorily identified responsibilities that they may perform. For example, special purpose districts that are water and/or sewer commissions are permitted to offer water and sewer services only in their service areas. Similarly, fire district commissions are permitted to offer only fire protection services in their service areas, and park and recreation commissions are limited to offering park/recreation-related services. However, the activities being performed by the municipalities and the County governments, as applicable, are also being provided to the areas services by special purpose district governments due to the concurrent jurisdiction of these government entities and special purpose district governments. Consequently, any activity listed on Charleston County's action plan is similarly provided for the service areas of the special purpose district governments with concurrent jurisdiction with the County (all of fire district commissions, the Charleston County and St. Andrews Parish Park and Recreation Commissions, the North Charleston District and Sewer District Commissions and parts of the Charleston Water System, the James Island and St. Andrews public service districts, and the Charleston County School District). Similarly, the Cooper River Park and Recreation Commission shares concurrent jurisdictions with the City of North Charleston (as does the North Charleston District and the North Charleston Sewer District Commissions and parts of the Charleston Water System). The Mt. Pleasant Water Commission and the Charleston County School District also have concurrent jurisdiction with the Town of Mt. Pleasant. The Charleston Water System (partially), the College of Charleston and the Charleston County School District

also share jurisdictional boundaries with the City of Charleston. While each of these government entities has their own action plan in this section, the action plans for the jurisdictions with which they share jurisdictional boundaries also apply to their service areas. Taken together, these action plans address all 14 types of hazards to which the government entities in the Region are potentially vulnerable as discussed in this plan. The action plans and status reports for each of the signatory governments follow in this section.

The resolutions for adoption for each jurisdiction will be updated once the plan has been formally adopted for the 2017-2018 five-year update.

7.1 – Unincorporated Charleston County

Resolution for Adoption

A RESOLUTION FOR THE ADOPTION OF THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY CHARLESTON COUNTY COUNCIL

Resolution No. 13-22

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the County of Charleston originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the County to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the County of Charleston, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Charleston County Council.

Effective this 7th Day of November, 2013.

Action Plan for Unincorporated Charleston County

**Unincorporated Charleston County, SC fully services the following jurisdictions and therefore all have the same action plan. Additions and individualized projects for this plan will be shown under the applicable jurisdiction: Town of Awendaw, Town of Hollywood, Town of Lincolnville, Town of McClellanville, Town of Meggett, Town of Ravenel, Town of Rockville, and Town of Seabrook Island.*

Following are the proposed projects to be undertaken/ continued in Charleston County for hazard mitigation during May 2017 - April 2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations (including the two foot freeboard, cumulative substantial improvement clause, and/or other provisions deemed necessary to enhance Community Rating System credits) to maintain participation in the National Flood Insurance Program and the Community Rating System	Building Inspection Services	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
PA, PI	Continue to expand the Community Wildfire Protection Plan (CWPP) to include all Fire Departments / Districts in the County. Support the CWPP by increasing public awareness with the purpose of improving the protection of all structures	Building Inspection Services Project Impact County-wide Fire Departments and Districts	General Fund	Minimize future wildfire damage; protect the lives of our citizens from natural and man-made hazards; 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
PP, PI	Promote standards for existing homes to be retrofitted to exceed minimal codes	Building Inspection Services	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.	1
PP, PI	Continue providing information to citizens regarding hazard safe interior rooms (PPI)	Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability.	2

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
PI	Provide hazard related information to all residents through locally distributed telephone book (PPI)	Building Inspection Services	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; improve water quality.	1
PA, PI	Continue to provide coordination of County stormwater management through development and implementation of a comprehensive program. Enhance efforts at improving water quality through environmental educational activities	Planning Public Works Building Inspection Services	General Fund Enterprise Fund Grant Funding	Improve water quality; minimize future flood damage; reduce existing flood damage; 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
PA	Continue implementing the stormwater master plan for Charleston County and the applicable regulations	Public Works Building Inspection Services Planning	Enterprise Fund Grant Funding	Minimize future flood damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	2
PA	Implement new standards requiring reverse grade to move back towards the property and away from waterways.	Public Works Building Inspection Services	General Fund	Minimize runoff of pesticides and other pollutants into waterways.	2
PA	Continue enforcement of zoning regulations, including the low density zoning provisions of the Zoning and Land Development Regulations (ZLDR)	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
PA, PI	Conduct or co-sponsor training workshops regarding the International Building-related, flood, and Fire Prevention Codes and Regulations, and on sustainable construction / landscaping practices, when there is interest in these workshops (PPI)	Building Inspection Services	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; preserve environmental resources	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
PA, PP, PI, NB	Continue providing information to citizens regarding propane tank anchoring, hazard safe interior rooms, boat anchoring and maintenance, generator safety, riparian buffer zones, hazard resistant landscaping, and artifact protection, among other issues (PPI)	Building Inspection Services Project Impact Community Partners	General Fund Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damages; preserve environmental resources	2
PA	Continue enforcing regulations requiring new manufactured homes brought into Charleston County to be constructed to wind zone 2 requirements as required per State law	Building Inspection Services	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1
PA	Continue prohibiting new manufactured homes to be installed in "V" flood zones and requiring manufactured homes installed in "A" flood zones to be on permanent foundations	Building Inspection Services	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
PP	Continue demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor	Building Inspection Services	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
PP	Seek funding for retrofitting, demolishing, or relocating repetitively flooded properties, if suitable candidates should be identified. Utilize <i>Charleston County Repetitive Loss Area Analysis</i> for identifying suitable candidates	Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1
PP, PI	Continue distributing a brochure on protecting boats from damages during hurricanes to interested citizens through expos, offices, marinas, and boat dealers (PPI)	Building Inspection Services Project Impact	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities; preserve environmental resources, improve water way quality	3

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
PP, PI	Continue distributing a brochure on protecting and preserving historic artifacts to interested citizens through expos, government offices, etc. (PPI)	Building Inspection Services Project Impact	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; preserve historic building inventory; minimize future flood damage	2
PP	Seek funding for retrofitting critical facilities or infrastructure to enhanced hazard resistance in accordance with the County of Charleston Facilities Master Plan Update "Building Utilization and Needs Survey" or other applicable plans as funding sources become available	Building Inspection Services	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1
NB	Continue enforcement of the tree protection/landscaping ordinance	Planning	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; improve water quality; improve air quality	2
NB	Continue maintaining permanent open space as parks	Parks and Recreation Commission Building Inspection Services	General Fund Special Revenue Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2
NB	Continue encouraging the Greenbelt Advisory Board to acquire green space in the special flood hazard area, to the extent feasible	Building Inspection Services Parks and Recreation Commission	Special Revenue Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages; improve water quality; improve air quality	2

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
NB	Continue participating in "Build-A-Dune" projects as funding permits, and assist other jurisdictions in participating in this initiative upon request. Implement and participate in the Charleston County Beachfront Management Plan to enhance and preserve our coastlines	Building Inspection Services Public Works Project Impact	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage; educating citizens regarding vulnerability to hazard and steps to reduce vulnerability; establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazard events	2
NB, PI	Continue to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos (PPI)	Building Inspection Services Project Impact	Partner donations Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage; improve water quality; improve air quality	2
NB	Develop and implement projects to reduce air and water pollution in Charleston County under the Project Impact partnership. Promote conservation of energy resources	Building Inspection Services Project Impact	Grant Funding	Preserve environmental resources; improve water quality; improve air quality	1
NB	Encourage cooperation between county departments, other government entities, interested businesses, and citizens regarding recommended sustainable practices to protect environmental quality	Building Inspection Services Project Impact other County Departments as applicable	Grant Funding General Fund	Preserve environmental resources; improve water quality; improve air quality; promote long term economic prosperity	2

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
ES, PI	Continue hazardous material training (PPI)	Hazardous Materials Coordinator	Enterprise 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
ES	Continue Terrorist Response Training (PPI)	Hazardous Materials Coordinator	General Fund	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
ES	Continue coordinating Emergency Operations Center activities related to a hazard event, including holding drills for EOC personnel and maintain the Charleston County Continuity of Operations Plan (COOP)	Emergency Management	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
ES	Continue responding to hazard emergencies	EMS, Fire Departments, Sheriff Department, Haz. Mat. Coordinator, Emergency Management	General Fund Enterprise 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

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
ES	Continue to require improved 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	Facilities Management	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 earthquake damage; minimize future hurricane damage	1
ES	Continue working to attain resources and to provide training for maritime firefighting through the Maritime Incident Response Team (MIRT)	Hazardous Materials Coordinator	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; promote long-term economic prosperity	1
ES, PI	Maintain the National Weather Service "StormReady" and "TsunamiReady" Community designations	Emergency Management	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
ES	Continue coordinating the Anti- Terrorism Task Force (COBRA) of specially trained police, fire and EMS personnel to respond to terrorist acts (PPI)	Hazardous Materials Coordinator	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

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
ES, PI	Continue sponsoring the Community Emergency Response Training (CERT) program (PPI)	Emergency Management	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; minimize future terrorist activity incidents	2
ES	Maintain a web-based Emergency Operations Center capability	Emergency Management	General Fund	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; preserve environmental resources; promote long-term economic prosperity	1
SP	Continue the drainage maintenance and canal cleaning program	Public Works	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
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Public Works	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
SP	Continue the elevation reference mark inspection program	Public Works	General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
SP	Continue to provide design, permitting, and construction services for the drainage improvement projects	Public Works Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	Grant Funding 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
SP	Continue the road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	Public Works Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	General Fund Grant Funding Enterprise 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
SP	Design/elevate roadways being constructed or reworked through the ½ cent sales tax program to minimize flooding potential to the extent feasible. Identify those roads susceptible to flooding	Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	Enterprise 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
SP	Continue to distribute a generator safety brochure to interested generator retail outlets, utility companies and the general public (PPI)	Building Inspection Services Project Impact	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
SP	Continue to provide information about the USGS stream gauge program to the public (PPI)	Building Inspection Services Project Impact	Partner donations Grant funding	Protecting the lives of citizens from natural hazards; minimize future flood damage; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and response for hazard events	2

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
PI	Continue providing hazard-related literature/information to citizens at County offices (PPI)	Building Inspection Services Project Impact	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
PI	Mail an outreach project to floodplain residents to those property owners whose property is located in the special flood hazard area (PPI)	Building Inspection Services Project Impact	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 hurricane damage; improve water quality	1
PI	Continue providing speakers to civic groups regarding hazard related activities and environmental quality topics. Update the Speaker's Bureau list as needed (PPI)	Building Inspection Services Project Impact	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; improve water quality; improve air quality	1
PI	Continue programs aimed towards providing resources to local schools and civic groups to enhance their ability to educate students regarding hazard events and hazard event preparation. Provide educational programs at schools on hazards or environmental quality as opportunities arise (PPI)	Building Inspection Services Project Impact	Grant 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; improve water quality; improve air quality	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
PI	Continue participating in hazard-related/product or environmental protection-related expos or public events (PPI)	Building Inspection Services Project Impact	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; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events; improve water quality; improve air quality	2
PI	Maintain the flood zone frequently asked questions page on the Charleston County web site to provide information on protecting against flood hazards to the public (PPI)	Building Inspection Services	General Fund	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2
PI	Maintain the Project Impact internet page on the Charleston County web site to relay information on Project Impact events and methods to reduce hazard-related losses to the public (PPI)	Building Inspection Services	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2
PI	Maintain a web page with information on environmental resource protection /air and water quality pollution-reduction strategies Promote carpooling, public transportation and bicycle paths	Building Inspection Services	Grant Funding	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1
PI	Continue educational efforts and initiatives promoting energy conservation. Promote LEED construction practices	Building Inspection Services	General Fund Grant Funding	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; improve air quality; preserve environmental resources	2
PI, PA, PP, NB, ES, SP	Continue participating in the annual maintenance and approval of Hazard Mitigation Plan /Program for Public Information Committee efforts to achieve maximum public outreach.	Building Inspection Services Project Impact	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest to 4 lowest)</i>
PI	Maintain the Web and Facebook pages for Project Impact (PPI)	Building Inspection Services Project Impact	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1
GIS	Continue inter-departmental efforts to share geographic digital information and property specific construction-related information	GIS Building Inspection Services Planning at Stormwater Emergency Management	General Fund Grant Funding	Protecting the lives of citizens from natural hazards; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events	2
PI	Digitize elevation certificates and make them accessible to the public	Building Inspection Services	Project Impact Fund General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	2
PI, PP,	Prepare flood insurance assessment table and address the community's insurance coverage gaps and other concerns	Building Inspection Services	General Fund	Minimize future flood damage minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	1
PA, PP	Continue to conduct studies on BFEs, floodways, and other pertinent flood concerns.	Planning Building Inspection Services	Grant Funding	To minimize future flood damage, and protect the lives of our citizens from natural and man-made hazards.	1
NB	Maintain the beachfront management plan that preserves our shorelines	Building Inspection Services	General Fund	To minimize future flood damage, and protect the lives of our citizens from natural and man-made hazards.	1

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

Status Report for Unincorporated Charleston County

**Unincorporated Charleston County, SC fully services the following jurisdictions and therefore all have the same status report. Additions and individualized projects for this plan will be shown under the applicable jurisdiction: Town of Awendaw, Town of Hollywood, Town of Lincolnville, Town of McClellanville, Town of Meggett, Town of Ravenel, Town of Rockville, and Town of Seabrook Island.*

Following are the proposed projects that were undertaken / continued in Unincorporated Charleston County for hazard mitigation during 2016-2017 and their status as of April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations (including the two foot freeboard, cumulative substantial improvement clause, and/or other provisions deemed necessary to enhance Community Rating System credits) to maintain participation in the National Flood Insurance Program and the Community Rating System	Building Inspection Services	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	Charleston County has maintained a Class 4 Rating in the Community Rating system (CRS). Additional Class ratings can be found in the HMP (Appendix 2, Table A.2-1).
PA, PI	Continue to expand the Community Wildfire Protection Plan (CWPP) to include all Fire Departments / Districts in the County. Support the CWPP by increasing public awareness with the purpose of improving the protection of all structures	Building Inspection Services Project Impact County-wide Fire Departments and Districts	General Fund	Minimize future wildfire damage; protect the lives of our citizens from natural and man-made hazards; 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	Project Impact continues to increase awareness of all hazards, including fire, at community expos and presentations. Charleston County Consolidated-911 has streamlined response and the department is accredited by the Commission on Accreditation for Law Enforcement Agencies, Inc.
PP, PI	Promote standards for existing homes to be retrofitted to exceed minimal codes	Building Inspection Services	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.	1	Reworked and published new brochures to push this message in 2016. Brochures are available at all appropriate expos and handed out at County permitting office.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PP, PI	Continue providing information to citizens regarding hazard safe interior rooms	Building Inspection Services	General Fund	Minimize future tornado and hurricane-related loss of life; educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability.	2	Ongoing educational project through use of brochures and information given to citizens.
PI	Provide hazard related information to all residents through local telephone book	Building Inspection Services	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; improve water quality.	1	Servicing local phonebooks and updated yearly for new publications. Ongoing
PA, PI	Continue to provide coordination of County stormwater management through development and implementation of a comprehensive program. Enhance efforts at improving water quality through environmental educational activities	Planning Public Works Building Inspection Services	General Fund Enterprise Fund Grant Funding	Improve water quality; minimize future flood damage; reduce existing flood damage; 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	Charleston County has completed the Stormwater Comprehensive Plan for the 72,000-acre Mead Westvaco site known as East Edisto for development that is now in progress. Building Inspection Services has process LOMRs for land area not included in Comprehensive Plan.
PA	Continue implementing the stormwater master plan for Charleston County and the applicable regulations	Public Works Building Inspection Services Planning	Enterprise Fund Grant Funding	Minimize future flood damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	2	The Stormwater Master Plan was completed in 2012, enforcement is continuing. The County now has current and preliminary digital NFIP Flood Insurance Rate Maps implemented in GIS system. Ongoing
PA	Implement new standards requiring reverse grade to move stormwater runoff back towards the property and away from waterways.	Public Works Building Inspection Services	General Fund	Minimize runoff of pesticides, herbicides and other pollutants into waterways.	2	Still in planning stage. Assessing the best avenues to implement these standards/regulations.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PA	Continue enforcement of zoning regulations, including the low density zoning provisions of the Zoning and Land Development Regulations (ZLDR)	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	The Zoning & Planning Department updated the Comprehensive Plan in 2015 encouraging the preservation of the Rural Area, preserving open space, and requiring vegetated buffers along the OCRM Critical Line. Plan will be updated and adopted again in 2018.
PA, PI	Conduct or co-sponsor training workshops regarding the International Building-related, flood, and Fire Prevention Codes and Regulations, and on sustainable construction / landscaping practices, when there is interest in these workshops (PPI)	Building Inspection Services	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; preserve environmental resources	1	Building Inspection Services participated in 103 meetings, expos, or events between May of 2012 to 2017. Twenty-two of those events occurred in 2016-2017. Some notable speakers are Director Carl Simmons who spoke at a total of 34 events ranging from SC Department of Insurance meetings to FEMA flood map sessions, and Jim Houser speaks regularly at the Trident Home Builders meeting for a total of 36 events in the past 5 years. The department regularly meets with individual citizens, homeowners, contractors and other local governments.
PA, PP, PI, NB	Continue providing information to citizens regarding propane tank anchoring, hazard safe interior rooms, boat anchoring and maintenance, generator safety, riparian buffer zones, hazard resistant landscaping, and artifact protection, among other issues (PPI)	Building Inspection Services Project Impact Community Partners	General Fund Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damages; preserve environmental resources	2	Project Impact attended 25 expos during this time period where information was distributed to attendees. 6 of these expos were attended between May 2016-April 2017.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PA	Continue enforcing regulations requiring new manufactured homes brought into Charleston County to be constructed to wind zone 2 requirements as required per State law	Building Inspection Services	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1	Enforcement has been maintained including regulations to 2' freeboard. Ongoing
PA	Continue prohibiting new manufactured homes to be installed in "V" flood zones and requiring manufactured homes installed in "A" flood zones to be on permanent foundations	Building Inspection Services	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	Continue to prohibit manufactured homes in VE Zones and require engineered foundations in AE Zones. A change in regulation to 2' freeboard.
PP	Continue demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor	Building Inspection Services	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	There have been 15 substandard structures demolished through Building Inspection Services during the period of 2016-2017 in Unincorporated Charleston County and jurisdictions that are fully serviced by the Department. 3 of the 15 were in a SFHA.
PP	Seek funding for retrofitting, demolishing, or relocating repetitively flooded properties, if suitable candidates should be identified. Utilize Charleston County Repetitive Loss Area Analysis for identifying suitable candidates	Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1	As of 2017, there is 1 suitable candidates that met the eligibility requirements and is in grant application process.
PP, PI	Continue distributing a brochure on protecting boats from damages during hurricanes to interested citizens through expos, offices, marinas, and boat dealers (PPI)	Building Inspection Services Project Impact	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities; preserve environmental resources, improve water way quality	3	Project Impact attended 25 expos during this time period where information was distributed to attendees; 6 expos were in 2016-2017. Brochure has been recently updated with new information.
PP, PI	Continue distributing a brochure on protecting and preserving historic artifacts to interested citizens through expos, government offices, etc. (PPI)	Building Inspection Services Project Impact	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; preserve historic building inventory; minimize future flood damage	2	Project Impact attended 25 expos during this time period (6 in 2016-2017) where information was distributed to attendees.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PP	Seek funding for retrofitting critical facilities or infrastructure to enhanced hazard resistance in accordance with the County of Charleston Facilities Master Plan Update "Building Utilization and Needs Survey" or other applicable plans as funding sources become available	Building Inspection Services	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1	Two grants to Charleston County were awarded for educational programs however no structural components were included in these grants. Grants are being closed out now. Roper St Francis in Partnership with Charleston County received a structural grant to upgrade emergency systems. Grant is in progress.
NB	Continue enforcement of the tree protection/landscaping ordinance	Planning	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; improve water quality; improve air quality	2	All road improvement projects are enhanced with landscape plantings (trees and shrubs) for roads constructed under the half-percent (1.2%) percent sales tax. Also the County continues to administer and enforce its tree protection and preservation ordinance and landscape ordinance which include grand tree protection and landscape buffer requirements.
NB	Continue maintaining permanent open space as parks and restricted use areas.	Parks and Recreation Commission Building Inspection Services	General Fund Special Revenue Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2	139,848 acres are deeded privately or publicly to remain as open space and an estimated 89,000 of that total is in a special flood hazard area.
NB	Continue encouraging the Greenbelt Advisory Board to acquire green space in the special flood hazard area, to the extent feasible	Building Inspection Services Parks and Recreation Commission	Special Revenue Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages; improve water quality; improve air quality	2	On-going Since its inception the Greenbelt Program has protected 21,170 acres of land in Charleston County.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
NB	Continue participating in "Build-A-Dune" projects as funding permits, and assist other jurisdictions in participating in this initiative upon request. Implement and participate in the Charleston County Beachfront Management Plan to enhance and preserve our coastlines	Building Inspection Services Public Works Project Impact	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage; educating citizens regarding vulnerability to hazard and steps to reduce vulnerability; establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazard events	2	No grant funding was secured for build-a dune projects during this time period. The County's Beachfront Management Plan adopted in 2015 focuses on current conditions, regulations, strategies for preservation and other relevant information and is being maintained as required. Next ordinance update will be in 2018.
NB, PI	Continue to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos (PPI)	Building Inspection Services Project Impact	Partner donations Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage; improve water quality; improve air quality	2	Project Impact attended 25 expos since May 2012 (6 expos in 2016-2017) where information was distributed to attendees.
NB	Develop and implement projects to reduce air and water pollution in Charleston County under the Project Impact partnership. Promote conservation of energy resources.	Building Inspection Services Project Impact	Grant Funding	Preserve environmental resources; improve water quality; improve air quality	1	Project Impact attended 25 expos since May 2012 (6 expos in 2016-2017) where information was distributed to attendees.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
NB	Encourage cooperation between county departments, other government entities, interested businesses, and citizens regarding recommended sustainable practices to protect environmental quality	Building Inspection Services Project Impact other County Departments as applicable	Grant Funding General Fund	Preserve environmental resources; improve water quality; improve air quality; promote long term economic prosperity	2	All Community Development departments are now using the same web based software program with extensive transparency for the public.
ES, PI	Continue hazardous material training (PPI)	Hazardous Materials Coordinator	Enterprise 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	Emergency Management conducted training sessions on topics including Clandestine Labs/Site Safety Officer, Rae Systems Portable Technician, IAFF 80-HR Hazardous Materials Technician Course, Surface Transportation Emergency Preparedness and Incident Command. In addition, individuals were sent to specialized training at nationwide core competence centers including the Nevada National Security Site Center for Radiological/Nuclear Training.
ES	Continue Terrorist Response Training (PPI)	Hazardous Materials Coordinator	General Fund	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	Training occurs on a continual basis, at least annually. For the 2016-2017 period, Terrorist Response Training included Weapons of Mass Destruction Refresher training conducted by the FBI, SLED, DHEC and other agencies on January 10, 2017 and Preparedness for Suicide Bombing Incidents conducted on Feb. 23-34, 2017.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
ES	Continue coordinating Emergency Operations Center activities related to a hazard event, including holding drills for EOC personnel and maintain the Charleston County Continuity of Operations Plan (COOP)	Emergency Management	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	The EOC regularly holds training sessions for area responders, officials and staff. The EOC regularly holds training sessions for area responders, officials and staff. The Charleston County Emergency Operations Center successfully activated for and effectively coordinated responses to two real world incidents - including Tropical Storm Herminie on Sep. 2, 2016 and for Hurricane Matthew from Oct. 3-9, 2016. Additionally, the EOC conducted a full scale drill on June 7, 2017, to practice and improve upon lessons learned from these tropical weather systems.
ES	Continue responding to hazard emergencies	EMS, Fire Departments, Sheriff Department, Haz. Mat. Coordinator, Emergency Management	General Fund Enterprise 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	Charleston County Consolidated Dispatch recorded 85 fuel spills, 397 Gas Leaks/Odors, 24 Hazmat Incidences, and 999 Outdoor fires between May 1, 2016 and April 30, 2017. From May 2012-April 2016, Consolidated Dispatch recorded 447 fuel spills, 1087 Gas Leaks/Odors, 138 Hazmat Incidences, and 2907 Outdoor fires.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
ES	Continue to require improved 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	Facilities Management	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 earthquake damage; minimize future hurricane damage	1	The new Charleston County Emergency Operations Center (EOC) is located inland outside the SFHA and is fully operational.
ES	Continue working to attain resources and to provide training for maritime firefighting through the Maritime Incident Response Team (MIRT)	Hazardous Materials Coordinator	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; promote long-term economic prosperity	1	Quarterly training sessions on marine firefighting are held during this time as well as on-going.
ES, PI	Maintain the National Weather Service "StormReady" and "TsunamiReady" Community designations	Emergency Management	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	Charleston County has been recertified as a "Storm Ready" and "Tsunami Ready" Community. The designation is valid through 2017.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
ES	Continue coordinating the Anti- Terrorism Task Force (COBRA) of specially trained police, fire and EMS personnel to respond to terrorist acts (PPI)	Hazardous Materials Coordinator	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	In addition to conducting various training sessions, the WMD Regional Response Team (COBRA) Team responded to a real world assistance call for suspicious powder at the Berkeley County Court House Emergency Management on Jan. 23, 2017. It also conducted a full scale alert and exercise on Feb. 22, 2017, with assistance from SLED, the Department of Energy and other agencies.
ES, PI	Continue sponsoring the Community Emergency Response Training (CERT) program (PPI)	Emergency Management	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; minimize future terrorist activity incidents	2	As of Aug. 8, 2017, there are 578 CERT members and 45 teen CERT members active on the roster across Charleston County. Classes were conducted at the College of Charleston in March and April 2017 in order to better prepare the college community for potential incidents.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
ES	Maintain a web-based Emergency Operations Center capability	Emergency Management	General Fund	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; preserve environmental resources; promote long-term economic prosperity	1	<p>The Charleston Emergency Operations Center successfully used its internet based WebEOC emergency management software to share information and situational awareness and coordinate responses during Tropical Storm Herminie and Hurricane Matthew, as well as during the activation and drill conducted on June 7, 2017.</p> <p>In addition, the county also used its emergency management app to put out vital information during Tropical Storm Herminie and Hurricane Matthew.</p> <p>Emergency Management maintains in coordination with Consolidated Dispatch Center "Citizens Notification" software to notify citizens via home phone, mobile phone, text, fax and email should the situation warrant alerting the citizens. Over 60,000 citizens were alerted and informed using this system during Hurricane Matthew. Additionally, other county agencies (Mosquito Control, for example) have begun utilizing the system for more day to day events that the public needs to be informed about (mosquito spraying, for example).</p>
SP	Continue the drainage maintenance and canal cleaning program	Public Works	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	Continuing to survey drainage features and compile a GIS database to improve tracking efficiency. Program goal to reduce mean time between recurring maintenance activities.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Public Works	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	Continue the encroachment permitting process to manage encroachments in ROW and drainage easements to maintain and improve emergency vehicle access and flood zone issues. Continue to require that when new ROW is permitted / added deeded drainage easements are required as part of the permit/approval process.
SP	Continue the elevation reference mark inspection program	Public Works	General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	1	Benchmarks are annually inventoried and updated and/or recovered. By utilizing high accuracy GPS the National Geodetic Survey has accepted Stability B benchmarks.
SP	Continue to provide design, permitting, and construction services for the drainage improvement projects	Public Works Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	Grant Funding 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	There were 13 completed projects providing drainage improvements, paving of dirt roads and sidewalks and 235 paved roads were resurfaced or applied a preservation application to provide better vehicle travel conditions from May 1, 2016 to April 30, 2017. Other projects are on-going
SP	Continue the road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	Public Works Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	General Fund Grant Funding Enterprise 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	There were 13 completed projects providing drainage improvements, paving of dirt roads and sidewalks and 235 paved roads were resurfaced or applied a preservation application to provide better vehicle travel conditions from May 1, 2016 to April 30, 2017. Other projects are on-going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
SP	Design/elevate roadways being constructed or reworked through the sales tax program to minimize flooding potential to the extent feasible. Identify those roads susceptible to flooding	Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	Enterprise 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	The Main, Hollings, Holmes, and Sallie Manigault Roads improvement projects were completed through the end of 2016 period. Trexler Avenue, Victory Lane and Jewel Street projects were completed during the 2016-2017 period. Improvements included elevating the road, improving outfall systems and improving the capacity of the drainage system (culverts) reducing potential flooding. These improvements were funded through the County wide half-cent (1/2) sales tax program.
SP	Continue to distribute a generator safety brochure to interested generator retail outlets, utility companies and the general public (PPI)	Building Inspection Services Project Impact	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	Project Impact attended 25 expos since May 2012 (6 expos in 2016-2017) where information was distributed to attendees.
SP	Continue to provide information about the USGS stream gauge program to the public (PPI)	Building Inspection Services Project Impact	Partner donations Grant funding	Protecting the lives of citizens from natural hazards; minimize future flood damage; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and response for hazard events	2	Working on possible new avenues for disseminating new information such as brochures, expo presentations and continuing the partnership with USGS.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PI	Continue providing hazard-related literature/information to citizens at County offices (PPI)	Building Inspection Services Project Impact	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	Printed material (brochures, pamphlets, etc.) are always displayed and made available for public use. Printed media are also updated on a regular basis.
PI	Mail an outreach project to floodplain residents to those property owners whose property is located in the special flood hazard area (PPI)	Building Inspection Services Project Impact	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 hurricane damage; improve water quality	1	Flood mailers were sent out earlier this year to all property owners in the SFHA. This project is updated and conducted annually.
PI	Continue providing speakers to civic groups regarding hazard related activities and environmental quality topics. Update the Speaker's Bureau list as needed (PPI)	Building Inspection Services Project Impact	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; improve water quality; improve air quality	1	Building Inspection Services participated in 103 meetings, expos, or events between May of 2012 to 2017. Twenty-two of those events occurred in 2016-2017. Some notable speakers are Director Carl Simmons who spoke at a total of 34 events ranging from SC Department of Insurance meetings to FEMA flood map sessions, and Jim Houser speaks regularly at the Trident Home Builders meeting for a total of 36 events in the past 5 years. The department regularly meets with individual citizens, homeowners, contractors and other local governments.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PI	Continue programs aimed towards providing resources to local schools and civic groups to enhance their ability to educate students regarding hazard events and hazard event preparation. Provide educational programs at schools on hazards or environmental quality as opportunities arise (PPI)	Building Inspection Services Project Impact	Grant 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; improve water quality; improve air quality	1	Project Impact has awarded mini-grants to teachers and other educators to fund special lessons in hazard mitigation annually since 2010. Worked with Kaleidoscope Summer Camp program to give out hundreds of activity books this year. Multiple brochures and children's activity books are also handed out to students of all ages on a regular basis at expos and in offices. Ongoing
PI	Continue participating in hazard-related/product or environmental protection-related expos or public events (PPI)	Building Inspection Services Project Impact	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; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events; improve water quality; improve air quality	2	Building Inspection Services participated in 103 meetings, presented at expos, or events between May of 2012 to 2017. Twenty-two of those events occurred in 2016-2017. Some notable speakers are Director Carl Simmons who spoke at a total of 34 events ranging from SC Department of Insurance meetings to FEMA flood map sessions, and Jim Houser speaks regularly at the Trident Home Builders meeting for a total of 36 events in the past 5 years. The department regularly meets with individual citizens, homeowners, contractors and other local governments.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PI	Maintain the flood zone frequently asked questions page on the Charleston County web site to provide information on protecting against flood hazards to the public (PPI)	Building Inspection Services	General Fund	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2	Respond to, and update on a regular basis. In addition, a flood hotline has been set up for inquiries during the preliminary map review process. This phone line is active and monitored. A newspaper advertisement was also published in March 2017 for citizens to mail in inquiries for a staff member to return with a phone call.
PI	Maintain the Project Impact internet page on the Charleston County web site to relay information on Project Impact events and methods to reduce hazard-related losses to the public (PPI)	Building Inspection Services	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2	This internet page is monitored constantly and updated with new information and/or brochures as they become available.
PI	Maintain a web page with information on environmental resource protection /air and water quality pollution-reduction strategies. Promote carpooling, public transportation and bicycle paths	Building Inspection Services	Grant Funding	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1	Facebook and Twitter sites are maintained and updated. Television programming produced is available for viewing on the "You Tube" site.
PI	Continue educational efforts and initiatives promoting energy conservation. Promote LEED construction practices.	Building Inspection Services	General Fund Grant Funding	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; improve air quality; preserve environmental resources	2	Project Impact attended 25 expos since May 2012 (6 expos in 2016-2017) where information was distributed to attendees. Four mini-grants to area schools also supported energy conservation and hazard mitigation.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PI, PA, PP, NB, ES, SP	Continue participating in the annual maintenance and approval of Hazard Mitigation Plan /Program for Public Information Committee efforts to achieve maximum public outreach.	Building Inspection Services Project Impact	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	During this period ending in 2017, the County has held 3 public meetings and maintained correspondence with jurisdictions about the importance of the Plan. During the last 5 years, at least 2 public meetings have been held each year.
PI	Maintain the Web and Facebook pages for Project Impact (PPI)	Building Inspection Services Project Impact	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality.	1	Respond to, and update on a regular basis. Ongoing
GIS	Continue inter-departmental efforts to share geographic digital information and property specific construction-related information	GIS Building Inspection Services Planning at Stormwater Emergency Management	General Fund Grant Funding	Protecting the lives of citizens from natural hazards; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events	2	Continue compiling updated Topo and Storm Drainage System Expansion information. This system is maintained constantly and updated whenever new data is available.
PI	Digitize elevation certificates and make them accessible to the public	Building Inspection Services	Project Impact Fund General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	2	Completed archive and continues as new elevation certificates are received. Ongoing

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest to 4 lowest)	Status
PI, PP,	Prepare flood insurance assessment table and address the community's insurance coverage gaps and other concerns	Building Inspection Services	General Fund	Minimize future flood damage minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	1	Completed assessment for 2017-18 PIP, will continue to assess for yearly HMP update or as new information becomes available, whichever is sooner.
PA, PP	Continue to conduct studies on BFEs, floodways, and other pertinent flood concerns.	Planning Building Inspection Services	Grant Funding	To minimize future flood damage, and protect the lives of our citizens from natural and man-made hazards.	1	Active process - concurrent with drainage improvement plans and studies being conducted in reference to new FEMA maps.
NB	Maintain the beachfront management plan that preserves our shorelines	Building Inspection Services	General Fund	To minimize future flood damage, and protect the lives of our citizens from natural and man-made hazards.	1	Beachfront management plan is required by state law; regulations will be implemented with the next ordinance amendment later in 2017 and approved by County Council.

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

7.2 - Town of Awendaw

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN
BY AWENDAW TOWN COUNCIL**

Resolution No. 2013-02

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Awendaw originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Awendaw to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that the Town of Awendaw does hereby declares that:

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Awendaw, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Charleston County Council and Awendaw Town Council

Effective this 7 Day of November, 2013

Attest:



Miriam C. Green, Mayor



Gregory Saxton, Town Clerk

Action Plan for the Town of Awendaw, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full action plan. Below are the proposed projects additional to the action plan of Charleston County.

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
NB	Continue working with scouts on the Project Impact scout patch program	Building Inspection Services/ Project Impact partners	Grant Funding/ General Fund	Educating citizens regarding vulnerability to hazards and steps to take to reduce that vulnerability; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness for hazard events; reducing vulnerability to infrastructure and built-environment to hazard	2
PI	Promote environmental pollution reduction strategies through Public Service Announcements; pilot projects; and meetings with government, neighborhood, civic, and professional groups.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities committees consider other projects and recommend these projects for implementation

Status Report for the Town of Awendaw, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full status report. Below are the proposed projects additional to the status report of Charleston County.

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
NB	Continue working with scouts on the Project Impact scout patch program	Building Inspection Services Project Impact	Grant Funding General Fund	Educating citizens regarding vulnerability to hazards and steps to take to reduce that vulnerability; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness for hazard events; reducing vulnerability to infrastructure and built-environment to hazard	2	on-going
SP	Design/elevate roadways being constructed or reworked through the ½ cent sales tax program to minimize flooding potential to the extent feasible. Identify those roads susceptible to flooding.	Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	Special Revenue 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	Martin George Road Phase 1 paved. Porcher School Road extension has been platted. Deeds are recorded. Then paving will occur. Maxville Road Phase 1 paved.
PI	Promote environmental pollution reduction strategies through Public Service Announcements; pilot projects; and meetings with government, neighborhood, civic, and professional groups.	Building Inspection Services Project Impact	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	on-going

7.3 - City of Charleston

Resolution for Adoption



Resolution
Number 2013-09

City of Charleston
South Carolina

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY**

The City of Charleston, South Carolina

Resolution No.

- WHEREAS** the County of Charleston has experienced the effects of natural and man-made events; and
- WHEREAS** the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and
- WHEREAS** the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional, and local government agencies and has been supported by those reviewers; and
- WHEREAS** the City of Charleston originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the City of Charleston to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The Charleston Regional Hazard Mitigation Plan is hereby adopted as an official plan of the City of Charleston, and

2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the Mayor and City Councilmembers of the City of Charleston.

Effective this the 22nd Day of Oct. 2013



JOSEPH P. RILEY, JR.
MAYOR

ATTEST



VANESSA TURNER MAYBANK
CLERK OF COUNCIL

Action Plan for the City of Charleston, SC

The following are the proposed projects to be undertaken/continued in the City of Charleston for hazard mitigation during 2017-2018

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1 highest, 4 lowest)
Preventative Activities	Continue to maintain completed FEMA Elevation Certificates on all buildings constructed in the SFHA	Building Inspection Services	General Fund	A, N, O	1
	Continue Storm water Utility Program	Public Service	General Fund, self-funding	A, E, F, G, M, P	1
	Continue enforcement of Building related, flood and Fire Prevention Codes and Regulations	Building Inspection Services, Engineering	General Fund	A, B, C, D	1
	Continue to provide coordination of City storm water management regulations	Public Service	General Fund	A, E, F, G, M, P	1
	Continue storm water management as guided by the "Master Drainage and Floodplain Management Plan"	Public Service	General Fund	A, E, F, G, M, P	1
	Continue enforcement of zoning ordinances	Planning & Zoning	General Fund	A, B, C, D, H, I, J, K	1
	Continue to ensure that projects are approved by State's Office of Ocean & Coastal Resource Management	Public Service	General Fund	A, E, H, M	1
Property Protection	Provide information to citizens regarding hazard safe interior rooms	Building Inspection Services	General Fund	F, L	2
	Demolish structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor	Grants Administration	Grant Funding	A, C, G, I, K, M	3
	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties	Building Inspection Services	Grant Funding	A, M, N, O	1
Natural & Beneficial	Continue enforcement of the tree protection/landscaping ordinance	Planning & Zoning	General Fund	H, I, K	2
	Continue planning, developing, and maintaining open space/parks in flood prone areas	Parks and Recreation	General Fund	H, I, K	2
Emergency Services	Continue hazardous material training	Fire Dept., Police Dept., Public Service	Enterprise Fund	D, H, P, Q, R, T	1
	Continue Terrorist Response Training	Police Dept.	General Fund	D, H, I, P, Q, R, S, T	1

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1 highest, 4 lowest)
	Continue coordinating Emergency Operations Center activities in the event of a hazard event	Charleston County Emergency Preparedness	General Fund	D, F, H, I, R	1
	Continue membership in the Emergency Council which sponsors the Charleston County Emergency Plan	Mayor	General Fund	D, F, H, I, R	1
	Continue responding to hazard emergencies	EMS, Fire Dept., Police Dept.	General Fund Enterprise Fund	D, F, H, I, R	1
Structural Projects	Continue ongoing City drainage projects and studies	Public Service	General Fund, Grant Funding, Storm water fees	A, D, E, I, M, P	1
	Seek funding for proposed City drainage projects and studies (if the FEMA cost benefit analysis is favorable towards these projects)	Public Service	Grant Funding, Storm water fees	A, D, E, I, M, P	1
	Continue the drainage inspection and maintenance and canal cleaning program	Public Service	General Fund, Storm water fees	A, D, E, I, M, P	1
	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Public Service	General Fund	A, D, I, M, P	1
	Continue the road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	Public Service	General Fund Grant Funding	A, B, D, E, I, M, P	1
	Continue the elevation reference mark (ERM) inspection program	Public Service & Charleston County Public Works	General Fund	A, R	1
Public Information Activities	Continue providing Flood Insurance Rate Map (FIRM) information and continue publicizing this service annually	Public Service	General Fund	A, D, M, O	1
	Continue providing the Flood Protection Library at the Charleston County Library branches	Public Service	General Fund	A, C, D, F, M	1
Public Information Activities	Continue outreach project to floodplain residents and repetitive loss properties by mailing flood hazard pamphlets annually	Public Service	General Fund	A, C, D, F, M	1
	Continue outreach project to all City residents by including flood hazard information in the BellSouth telephone book	County of Charleston Building Services	General Fund	A, C, D, F, M	1

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1 highest, 4 lowest)
	Continue providing hazard-related literature/information to citizens	Public Service, Bldg. Inspections	General Fund	A, B, C, D, F, L, S	1
	Continue participating in hazard-related/product expos	Building Inspection Services	General Fund	A, B, C, D, F, L, S	1
	Continue partnership to the 113 Calhoun Street Multi-hazard Residential Retrofit Mitigation and Education Program Planning Project	Building Inspection Services, Public Service, SC Sea Grant Consortium	General Fund	A, B, C, D, F, N, O, R	2
	Continue to sponsor and participate in "Hazard Awareness Week" and assist other communities in participating	Building Inspection Services	General Fund	A, B, C, D, F, L, S	2
	Continue participating in the Project Impact Program for Public Information (PIP) to achieve maximum public outreach.	Building Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

KEY TO GOALS ADDRESSED:

A – Minimize future flood damage	B – Minimize future earthquake damage
C – Minimize future hurricane damage	D – Protect the lives of our citizens from natural and manmade hazards or disasters
E – Improve water quality	F – Educating citizens regarding steps to take to reduce vulnerabilities
G – Reduce vulnerability of our infrastructure to natural and man-made hazards	H – Preserve environmental resources
I – Promote long-term economic prosperity	J – Preserve open space
K – Encourage recreational activities	L – Minimize future tornado-related loss of life
M – Reduce existing flood damages	N – Preserve historic building inventory
O – Reducing vulnerability of built-environment to hazards	P – Improve hazard resistance of infrastructure
Q – Assessing vulnerability to man-made hazards	R – Establishing cooperative relationships between public, private and non-profit sectors to enhance response for hazard events
S – Minimize future terrorist activity incidents	T – Minimize future hazardous materials incidents

Status Report for the City of Charleston, SC

The following are the proposed projects to be undertaken/continued in the City of Charleston for hazard mitigation during 2016-2017 and their status through April 2017

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority (1 highest, 4 lowest)</i>	<i>Status</i>
Preventative Activities	Continue to maintain completed FEMA Elevation Certificates on all buildings constructed in the SFHA	Building Inspections	General Fund	A, N, O	1	Ongoing
	Continue Storm water Utility Program	Public Service	General Fund, self-funding	A, E, F, G, M, P	1	Ongoing
	Continue enforcement of Building related, flood and Fire Prevention Codes and Regulations	Building Inspections, Engineering	General Fund	A, B, C, D	1	Ongoing
	Continue to provide coordination of City storm water management regulations	Public Service	General Fund	A, E, F, G, M, P	1	Ongoing
	Continue storm water management as guided by the “Master Drainage and Floodplain Management Plan”	Public Service	General Fund	A, E, F, G, M, P	1	Ongoing
	Continue enforcement of zoning ordinances	Planning & Zoning	General Fund	A, B, C, D, H, I, J, K	1	Ongoing
	Continue to ensure that projects are approved by State’s Office of Ocean & Coastal Resource Management	Public Service	General Fund	A, E, H, M	1	Ongoing
Property Protection	Provide information to citizens regarding hazard safe interior rooms	Building Inspections	General Fund	F, L	2	Ongoing
	Demolish structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor	Grants Administration	Grant Funding	A, C, G, I, K, M	3	Ongoing
	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties	Building Inspections	Grant Funding	A, M, N, O	1	Ongoing

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority (1 highest, 4 lowest)</i>	<i>Status</i>
Natural & Beneficial	Continue enforcement of the tree protection/landscaping ordinance	Planning & Zoning	General Fund	H, I, K	2	Ongoing
	Continue planning, developing, and maintaining open space/parks in flood prone areas	Parks and Recreation	General Fund	H, I, K	2	Ongoing
Emergency Services	Continue hazardous material training	Fire Dept., Police Dept., Public Service	Enterprise Fund	D, H, P, Q, R, T	1	Fire is lead But I know they continue to train.
	Continue Terrorist Response Training	Police Dept.	General Fund	D, H, I, P, Q, R, S, T	1	Ongoing
	Continue coordinating Emergency Operations Center activities in the event of a hazard event	Charleston County Emergency Preparedness	General Fund	D, F, H, I, R	1	Ongoing w/County but City has its own facility
	Continue membership in the Emergency Council which sponsors the Charleston County Emergency Plan	Mayor	General Fund	D, F, H, I, R	1	Ongoing
	Continue responding to hazard emergencies	EMS, Fire Dept., Police Dept.	General Fund Enterprise Fund	D, F, H, I, R	1	Ongoing
Structural Projects	Continue ongoing City drainage projects and studies	Public Service	General Fund, Grant Funding, Storm water fees Tax Increment Financing (TIF)	A, D, E, I, M, P	1	Ongoing
	Seek funding for proposed City drainage projects and studies (if the FEMA cost benefit analysis is favorable towards these projects)	Public Service	Grant Funding, Storm water fees	A, D, E, I, M, P	1	Ongoing
	Continue the drainage inspection and maintenance and canal cleaning program	Public Service	General Fund, Storm water fees	A, D, E, I, M, P	1	Ongoing
	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Public Service	General Fund	A, D, I, M, P	1	Ongoing

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority (1 highest, 4 lowest)</i>	<i>Status</i>
	Continue the road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	Public Service	General Fund Grant Funding	A, B, D, E, I, M, P	1	Ongoing
	Continue the elevation reference mark (ERM) inspection program	Public Service & Charleston County Public Works	General Fund	A, R	1	Ongoing
Public Information Activities	Continue providing Flood Insurance Rate Map (FIRM) information and continue publicizing this service annually	Public Service	General Fund	A, D, M, O	1	Ongoing
	Continue providing the Flood Protection Library at the Charleston County Library branches	Public Service	General Fund	A, C, D, F, M	1	Ongoing
Public Information Activities	Continue outreach project to floodplain residents and repetitive loss properties by mailing flood hazard pamphlets annually	Public Service	General Fund	A, C, D, F, M	1	Ongoing
	Continue outreach project to all City residents by including flood hazard information in the BellSouth telephone book	County of Charleston Building Services	General Fund	A, C, D, F, M	1	Ongoing
	Continue providing hazard-related literature/information to citizens	Public Service, Bldg. Inspections	General Fund	A, B, C, D, F, L, S	2	Ongoing
	Continue participating in hazard-related/product expos	Building Inspections	General Fund	A, B, C, D, F, L, S	1	Ongoing
	Continue partnership to the 113 Calhoun Street Multi-hazard Residential Retrofit Mitigation and Education Program Planning Project	Building Inspections, Public Service, SC Sea Grant Consortium	General Fund	A, B, C, D, F, N, O, R	2	Ongoing
	Continue to sponsor and participate in "Hazard Awareness Week" and assist other communities in participating	Building Inspections	General Fund	A, B, C, D, F, L, S	2	Ongoing

KEY TO GOALS ADDRESSED:

A – Minimize future flood damage	B – Minimize future earthquake damage
C – Minimize future hurricane damage	D – Protect the lives of our citizens from natural and manmade hazards or disasters
E – Improve water quality	F – Educating citizens regarding steps to take to reduce vulnerabilities
G – Reduce vulnerability of our infrastructure to natural and man-made hazards	H – Preserve environmental resources
I – Promote long-term economic prosperity	J – Preserve open space
K – Encourage recreational activities	L – Minimize future tornado-related loss of life
M – Reduce existing flood damages	N – Preserve historic building inventory
O – Reducing vulnerability of built-environment to hazards	P – Improve hazard resistance of infrastructure
Q – Assessing vulnerability to man-made hazards	R – Establishing cooperative relationships between public, private and non-profit sectors to enhance response for hazard events
S – Minimize future terrorist activity incidents	T – Minimize future hazardous materials incidents

7.4 - City of Folly Beach

Resolution for Adoption



CITY OF FOLLY BEACH

Introduced by: Mayor Goodwin

Date: October 8, 2013

RESOLUTION NO. R45-13

A RESOLUTION BY THE FOLLY BEACH CITY COUNCIL ADOPTING THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN.

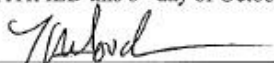
- WHEREAS,** the City of Folly Beach has experienced the effects of natural and manmade hazard events; and
- WHEREAS,** the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Mitigation Plan*; and
- WHEREAS,** the *Charleston Regional Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and
- WHEREAS,** the City of Folly Beach originally adopted the *Charleston Regional Mitigation Plan* in 1999 and readopted it in 2004, 2008, and is required to adopt the amended version of this plan on a five year cycle for the City of Folly Beach to remain eligible for certain Federal programs in which City participates;

NOW THEREFORE BE IT RESOLVED by the Folly Beach City Council, duly assembled, that

SECTION 1. Administration hereby approves and adopts the revised *Charleston Regional Mitigation Plan* as the official plan of the City of Folly Beach.

SECTION 2. *The Charleston Regional Hazard Mitigation Project Committee* is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Folly Beach City Council.

RATIFIED this 8th day of October, 2013 at Folly Beach, South Carolina, in City Council duly assigned.


Tim Goodwin, Mayor

Mary E. Cunningham, CMC
Municipal Clerk

Action Plan for the City of Folly Beach, SC

Following are the proposed projects to be undertaken/continued in The City of Folly Beach for hazard mitigation during 2017-2018

(Abbreviations for types are as follows: PA Preventive Activities, PP is Property Protection Activities, NB is Natural and Beneficial Functions/Resource Preservation Activities, ES is Emergency Services Activities, SP is Structural Projects Activities, and PI is Public Information Activities, and GIS is Geographic Information Systems Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest, 4 lowest)</i>
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations.	Building Department	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
PA	Continue to provide coordination of County storm water management regulations.	Public Works	General Fund	Minimize future flood damage; reduce existing flood damage; 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
PA	Continue enforcement of zoning regulations.	Zoning	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
PA	Continue prohibiting new manufactured homes to be installed in V flood zones and in A flood zones.	Zoning	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
PP	Provide hazard related information to all residents of Folly Beach through the City's radio and TV outlets.	Building & Zoning Departments	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

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest, 4 lowest)</i>
PP PI	Continue providing hazard-related literature/information to citizens at City offices.	Building & Zoning Departments	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	1
PI	Provide hazard related information to all residents of Folly Beach through the BellSouth telephone book.	Building Inspection & Zoning Services	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
PI	Recognize “International Building Safety Week” to promote safety in the built environment.	Building Inspection Services	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
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1
NB	Continue enforcement of the tree protection/landscaping ordinance	Building Inspection Services & Zoning Departments	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1
NB	Continue maintaining permanent open space as parks.	Zoning	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest, 4 lowest)</i>
NB	Continue to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos.	Building Inspection Services	General Fund	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; minimize future flood damages; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage	1
ES	Continue Terrorist Response Training	Public Safety	General Fund	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
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event.	Public Safety	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
ES	Continue responding to hazard emergencies	EMS, Fire Departments, Sheriff Department, Haz. Mat. Coordinator, Emergency Preparedness, Code Enforcement, Flood Plain Management	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

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest, 4 lowest)</i>
ES	Continue to require construction practices for new City-owned critical facilities that are sensitive to flood zone (e.g. avoiding AE & VE flood zones where feasible) and seismic considerations.	Building Inspection Services	General Fund	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
ES	Evaluate existing City-owned facilities for hazard resistance and retrofit facilities if needed where feasible.	Building Inspection Services	General Fund	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	2
SP	Continue the drainage maintenance and program.	Public Works	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
SP	Continue the road repair/construction program Design/elevate roadways being constructed or reworked through the ½ cent sales tax program to minimize flooding potential to the extent feasible. Identify those roads susceptible to flooding.	Public Works & Folly Beach Admin	Enterprise 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
NB	Pass buffer ordinance to maintain landscaping between critical line and structures.	Planning and Zoning	N/A	Minimize future flood damage; preserve environmental resources;; preserve open space; minimize future hurricane damage.	1
GIS	Map drainage basins and drainage infrastructure to identify areas for maintenance and protection.	GIS	General Fund	Protect the lives of our citizens from natural hazards; reduce existing flood damage; minimize future flood damage; improve hazard resistance of infrastructure.	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest, 4 lowest)</i>
SP	Map and evaluate water system infrastructure to determine location of pipes, condition of pipes, and determine replacement schedules and costs. Identify/implement redundant water supply.	GIS, Public Works	General Fund.	Reduce existing flood damage; minimize future flood damage; minimize future earthquake losses; improve hazard resistance of infrastructure; promote long-term economic prosperity. Mitigate single point of failure in supply system.	1

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

Status Report for the City of Folly Beach, SC

Following are the proposed projects to be undertaken/continued in The City of Folly Beach for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for types are as follows: PA Preventive Activities, PP is Property Protection Activities, NB is Natural and Beneficial Functions/Resource Preservation Activities, ES is Emergency Services Activities, SP is Structural Projects Activities, and PI is Public Information Activities, and GIS is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations.	Building Department	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	On going
PA	Continue to provide coordination of County storm water management regulations.	Public Works	General Fund	Minimize future flood damage; reduce existing flood damage; 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	On going
PA	Continue enforcement of zoning regulations.	Zoning	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	On going
PA	Continue prohibiting new manufactured homes to be installed in V flood zones and in A flood zones.	Zoning	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	On going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PP	Provide hazard related information to all residents of Folly Beach through the City's radio and TV outlets.	Building & Zoning Departments	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	On going with Charleston County
PP PI	Continue providing hazard-related literature/information to citizens at City offices.	Building & Zoning Departments	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	1	On going Completed revamp of educational materials as part of CRS review.
PI	Provide hazard related information to all residents of Folly Beach through the BellSouth telephone book.	Building Inspection & Zoning Services	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	On going
PI	Recognize "International Building Safety Week" to promote safety in the built environment.	Building Inspection Services	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	On going
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	On going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
NB	Continue enforcement of the tree protection/landscaping ordinance	Building Inspection Services & Zoning Departments	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1	On going
NB	Continue maintaining permanent open space as parks.	Zoning	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	1	Two new pocket parks protected.
NB	Continue to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos.	Building Inspection Services	General Fund	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; minimize future flood damages; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage	1	On going
ES	Continue Terrorist Response Training	Public Safety	General Fund	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	On going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event.	Public Safety	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	On going
ES	Continue responding to hazard emergencies	EMS, Fire Departments, Sheriff Department, Haz. Mat. Coordinator, Emergency Preparedness, Code Enforcement, Flood Plain Management	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	On going Full emergency operations and review for 2 week period surrounding Hurricane Matthew.
ES	Continue to require construction practices for new City-owned critical facilities that are sensitive to flood zone (e.g. avoiding AE & VE flood zones where feasible) and seismic considerations.	Building Inspection Services	General Fund	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	On going
ES	Evaluate existing City-owned facilities for hazard resistance and retrofit facilities if needed where feasible.	Building Inspection Services	General Fund	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	2	Applied for FEMA grants for new windows and roof at City Hall and new generators at other critical facilities.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
SP	Continue the drainage maintenance and program.	Public Works	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	3 new ditch pipe and swale projects. 4 new tidal check valves, and complete vacuum of all storm water pipes inlets and outfalls.
SP	Continue the road repair/construction program Design/elevate roadways being constructed or reworked through the ½ cent sales tax program to minimize flooding potential to the extent feasible. Identify those roads susceptible to flooding.	Public Works & Folly Beach Admin	Enterprise 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	Ongoing with TST and CTC applications

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

7.5 - Town of Hollywood

Resolution for Adoption

TOWN OF HOLLYWOOD, SC

**ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN
Resolution 18-2013-14**

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Hollywood originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Hollywood to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that:

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Hollywood, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town of Hollywood. **Effective this 10th Day of December, 2013**

Mayor Jacquelyn S. Heyward

Councilmember John Dunmyer, III

Councilmember Althea Salters

Councilmember Kenneth L. Smalls Sr.

Mayor Pro Tem Herbert Townsend

Councilmember Ezell G. Middleton

Councilmember Annette Sausser

Attest:

Niema Gantt-Brown, Town Clerk-Treasurer

Action Plan for the Town of Hollywood, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full action plan. There are no proposed projects additional to the action plan of Charleston County.

Status Report for the Town of Hollywood, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full status report. There are no proposed projects additional to the status report of Charleston County.

7.6 - City of Isle of Palms

Resolution for Adoption

A RESOLUTION FOR THE ADOPTION OF THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY ISLE OF PALMS CITY COUNCIL

WHEREAS the City of Isle of Palms has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared and recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the City of Isle of Palms originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in subsequent years, and is required to adopt the amended version of this plan for the County and the City of Isle of Palms to remain eligible for certain Federal programs in which Charleston County participates, and

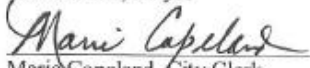
NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the City of Isle of Palms, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Isle of Palms City Council.

Effective this 24th day of September, 2013.

Attest:


Dick Cronin, Mayor


Marie Copeland, City Clerk



Action Plan for the City of Isle of Palms, SC

Following are the proposed projects to be undertaken/continued in the City of Isle of Palms for hazard mitigation during 2017 - 2018

(Abbreviations for Type are as follows: PA is Preventive Activities, PP is Property Protection Activities, NB is Natural and Beneficial Functions/Resource Preservation Activities, ES is Emergency Services Activities, SP is Structural Projects Activities, and PI is Public Information Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Priority</i>
PA	Recommend adoption of voluntary standards for single family residences and commercial structures to exceed minimal building code requirements for wind and seismic design	Building, Planning & Zoning	General Fund	2
PA	Continue enforcement of Building-related, flood and Fire Prevention Codes and Regulations	Building, Planning & Zoning, Fire Department	General Fund	1
PA	Continue to provide coordination of NPDES storm water management regulations	Public Works Department	General Fund	1
PA	Continue enforcement of zoning regulations	Building, Planning & Zoning	General Fund	1
PP	Continue efforts to monitor the shoreline to preserve a healthy beach with adequate dune fields and vegetation to mitigate storm damage.	General Government	Tourism Funds Grant Funding	1
PP	Provide information to citizens regarding benefits of hazard mitigation measures	Building, Planning & Zoning	General Fund	2
PP	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties	General Government	Grant Funding	3
NB	Continue enforcement of the tree protection/landscaping ordinance	Code Enforcement	General Fund	2
NB	Continue the elevation reference marks inspection program	Building, Planning & Zoning	General Fund	1
ES	Continue hazardous material training	All departments, as appropriate with Fire Department maintaining safety Audit records.	General Fund	1
ES	Continue Active Shooter Training with a goal of 100% of the officers having completed this training.	Police Department	General Fund	1
ES	Continue Training in the National Incident Management System "NIMS" program	All City Departments	General Fund	1
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event by participating in drills and offering and encouraging disaster preparedness among citizens.	General Government, Fire and Police Departments, Charleston County Emergency Preparedness, Charleston County Consolidated Dispatch 911 & EPP	General Fund	1
ES	Continue responding to hazard emergencies	General Government,	General Fund	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Priority</i>
		Police, Fire Departments		
ES	Recommend construction practices for new City-owned critical facilities which are sensitive to flood zone (e.g., avoiding "V" flood zones where feasible) and seismic considerations (e.g., avoiding areas subject to liquefaction where feasible) Continue to endeavor to construct wind resistant and flood resistant city facilities when replacing older assets.	Building, Planning & Zoning	General Fund Bond Funding, if needed.	1
SP	Continue the drainage maintenance, periodic dredging and canal cleaning program	Public Works Department, General Government	General Fund & Tourism Funds	1
PP & NB SP	Continuing beach monitoring to ensure the preservation of dunes and vegetation sufficient to offer storm protection Provide critical facilities data, repetitive loss property information, flood data, street data, and parcel data into a GIS systems	General Government Building, Planning & Zoning	Tourism Funds General Fund Grant Funding	1 2
SP	Continue utility right-of-way coordination and permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Building, Planning & Zoning, Fire, Police, Public Works Departments	General Fund, Tourism Funds	1
SP	Seek funding for the Island-wide drainage projects to include pursuit of available funds from County Transportation Committee and the Transportation Sales Tax.	Public Works Department	Grant Funding, Tourism Funds Capital projects fund	1
PI	Arrange for community meetings to educate citizens related to changes in the flood insurance rates.	General Government Building, Planning & Zoning	General Fund	2
PI	Mail hazard related information to all residents of the Isle of Palms in a bi-annual mailing	Building, Planning & Zoning	General Fund	1
PI	Continue providing hazard-related literature/ information to citizens at City offices and posting flags and warnings when potential hazards are threatening or exists.	General Government, Fire Department	General Fund	1
PI	Sponsor Hazard Awareness Events and provide website links to Charleston County and Project Impact resources.	General Government, Fire Department	General Fund, Disaster Recovery Fund	2
PI	Continue mailing an outreach project to floodplain residents	Building, Planning & Zoning	General Fund	1
PI	Continue providing speakers to civic groups regarding hazard-related activities	General Government	General Fund	2
PI	Continue education regarding septic tanks, drainage ditches and pervious versus impervious surfaces as they relate to adequate areas for storm water runoff.	General Government Public Works	General Fund Grant	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Priority</i>
		Department Building, Planning & Zoning.	Funding	
PI	Post hazard awareness information on City of Isle of Palms and Isle of Palms Marina websites. Communicate information via the City's social media and message boards. Provide disaster information at Police Department "Meet and Greet" neighborhood meetings	General Government, Recreation, Police, Fire Departments	General Fund Accommodations Tax Fund	1
PI	Continue participating in hazard-prevention / product expos.	Fire Department, Building, Planning & Zoning	General Fund	2
PI	Continue to work with other East Cooper municipalities to coordinate pandemic or other hazard response planning efforts.	General Government, Fire Department	General Fund	2
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building, Planning & Zoning / Project Impact committee members	General Fund	1
ES	Continue Wayfinding Initiative to enable citizens to know most efficient routes to and from destinations thus reducing traffic congestion and enabling better response by emergency vehicles	General Government	Tourism Funds	2
NB	Continue efforts to identify and acquire property to preserve as green space	General Government	Grant Funds	3
PA	Continue adding to the fund balance of the Disaster Recovery Fund to continually increase available fiscal resources to react/ recover in the wake of a disaster	City Council & General Government	General Fund	1
PA	Continue to work with power utility company to make improvements that are more disaster resistant and redundant	General Government Non Standard service clause of franchise agreement	General Fund	2
PA	Review City insurance annually to determine adequate coverage of all assets and update documentation (video) of assets	All City Departments	General Fund	1

Status Report for the City of Isle of Palms, SC

Following are the proposed projects to be undertaken/continued in the City of Isle of Palms for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for Type are as follows: PA is Preventive Activities, PP is Property Protection Activities, NB is Natural and Beneficial Functions/Resource Preservation Activities, ES is Emergency Services Activities, SP is Structural Projects Activities, and PI is Public Information Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Priority</i>	<i>Status</i>
PA	Recommend adoption of voluntary standards for single family residences and commercial structures to exceed minimal building code requirements for wind and seismic design	Building, Planning & Zoning	General Fund	2	ongoing
PA	Continue enforcement of Building-related, flood and Fire Prevention Codes and Regulations	Building, Planning & Zoning Fire Department	General Fund	1	ongoing
PA	Continue to provide coordination of NPDES storm water management regulations	Public Works Department	General Fund	1	ongoing
PA	Continue enforcement of zoning regulations	Building, Planning & Zoning	General Fund	1	ongoing
PP	Continue efforts to monitor the shoreline to preserve a healthy beach with adequate dune fields and vegetation to mitigate storm damage.	General Government	Tourism Funds Grant Funding	1	ongoing
PP	Provide information to citizens regarding benefits of hazard mitigation measures	Building, Planning & Zoning	General Fund	2	ongoing
PP	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties	General Government	Grant Funding	3	ongoing
NB	Continue enforcement of the tree protection/landscaping ordinance	Building, Planning & Zoning	General Fund	2	ongoing
NB	Continue the elevation reference marks inspection program	Building, Planning & Zoning	General Fund	1	ongoing
ES	Continue hazardous material training	All departments, as appropriate with Fire Department maintaining safety Audit records.	General Fund	1	ongoing
ES	Continue Active Shooter Training with a goal of 100% of the officers having completed this training.	Police Department	General Fund	1	ongoing
ES	Continue Training in the National Incident Management System "NIMS" program	All City Departments	General Fund	1	ongoing
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event by participating in drills and offering and encouraging disaster preparedness among citizens.	General Government/ Fire and Police Departments, Charleston County Emergency Preparedness, Charleston County Consolidated Dispatch 911 & EPP	General Fund	1	ongoing

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Priority</i>	<i>Status</i>
ES	Continue responding to hazard emergencies	General Government, Police, Fire Departments	General Fund	1	ongoing
ES	Recommend construction practices for new City-owned critical facilities which are sensitive to flood zone (e.g., avoiding "V" flood zones where feasible) and seismic considerations (e.g., avoiding areas subject to liquefaction where feasible) Continue to endeavor to construct wind resistant and flood resistant city facilities when replacing older assets.	Building, Planning & Zoning	General Fund Bond Funding, if needed.	1	ongoing
SP	Continue the drainage maintenance, periodic dredging and canal cleaning program	Public Works Department, General Government	General Fund & Tourism Funds	1	ongoing
PP & NB SP	Continuing beach monitoring to ensure the preservation of dunes and vegetation sufficient to offer storm protection Provide critical facilities data, repetitive loss property information, flood data, street data, and parcel data into a GIS systems	General Government Building, Planning & Zoning	Tourism Funds General Fund Grant Funding	1 2	ongoing
SP	Continue utility right-of-way coordination and permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Building, Planning & Zoning Fire, Police, Public Works Departments	General Fund & Tourism Funds	1	ongoing
SP	Seek funding for the Island-wide drainage projects to include pursuit of available funds from County Transportation Committee and the Transportation Sales Tax.	Public Works Department	Grant Funding, Tourism Funds, Capital projects fund	1	City received grant funding from the Rural Infrastructure Authority and CTC allowing the City to begin Phase II Drainage project 8/2017
PI	Arrange for community meetings to educate citizens related to changes in the flood insurance rates.	General Government Building, Planning & Zoning	General Fund	2	ongoing
PI	Mail hazard related information to all residents of the Isle of Palms in a bi-annual mailing	Building, Planning & Zoning	General Fund	1	ongoing
PI	Continue providing hazard-related literature/ information to citizens at City offices and posting flags and warnings when potential hazards are threatening or exists.	General Government, Fire Department	General Fund	1	ongoing
PI	Sponsor Hazard Awareness Events and provide website links to Charleston County and Project Impact resources.	General Government, Fire Department	General Fund, Disaster Recovery Fund	2	ongoing
PI	Continue mailing an outreach project to floodplain	Building, Planning & Zoning	General	1	ongoing

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Priority</i>	<i>Status</i>
	residents		Fund		
PI	Continue providing speakers to civic groups regarding hazard-related activities	General Government	General Fund	2	ongoing
PI	Continue education regarding septic tanks, drainage ditches and pervious verses impervious surfaces as they relate to adequate areas for storm water runoff.	General Government Public Works Department Building, Planning & Zoning	General Fund Grant Funding	1	ongoing
PI	Post hazard awareness information on City of Isle of Palms and Isle of Palms Marina websites. Communicate information via the City's social media and message boards. Provide disaster information at Police Department "Meet and Greet" neighborhood meetings	General Government, Recreation, Police, Fire Departments	General Fund Accommodations Tax Fund	1	ongoing
PI	Continue participating in hazard-prevention / product expos.	Fire Department, Building, Planning & Zoning	General Fund	2	The City hosted such an event on 5/18/16
PI	Continue to work with other East Cooper municipalities to coordinate pandemic or other hazard response planning efforts.	General Government, Fire Department	General Fund	2	ongoing
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building, Planning & Zoning Project Impact committee members	General Fund	1	ongoing
ES	Continue Wayfinding Initiative to enable citizens to know most efficient routes to and from destinations thus reducing traffic congestion and enabling better response by emergency vehicles	General Government	Tourism Funds	2	ongoing
NB	Continue efforts to identify and acquire property to preserve as green space	General Government	Grant Funds	3	ongoing
PA	Continue to add to the fund balance of the Disaster Recovery Fund to continually increase available fiscal resources to react/ recover in the wake of a disaster	City Council & General Government	General Fund	1	ongoing
PA	Continue to work with utility company to make improvements that are more disaster resistant and redundant	General Government Non Standard service clause of franchise agreement	General Fund	2	ongoing
PA	Review City insurance annually to determine adequate coverage of all assets and update documentation (video) of assets	All City Departments	General Fund	1	ongoing

7.7 - Town of James Island

Resolution for Adoption

RESOLUTION # 2014-27

A RESOLUTION FOR THE ADOPTION OF THE CHARLESTON REGIONAL HAZARD MITIGATION PLAN

WHEREAS, the Town of James Island has experienced the effects of natural and man-made hazard events; and

WHEREAS, the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended Charleston Regional Hazard Mitigation Plan; and

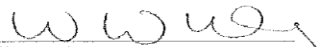
WHEREAS, the recommended Charleston Regional Hazard Mitigation Plan has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS, the Town of James Island is required to adopt the amended version of this Plan on a five-year cycle for the County to remain eligible for certain Federal programs in which Charleston County participates;

NOW THEREFORE, BE IT RESOLVED THAT:

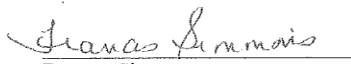
1. The Charleston Regional Hazard Mitigation Plan is hereby adopted as an official Plan of the Town of James Island
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the Plan to the Town of James Island.

Adopted this 16th day of October, 2014



Bill Woolsey
Mayor

ATTEST



Frances Simmons
Town Clerk

Action Plan for the Town of James Island, SC

Following are the proposed projects to be undertaken/continued in James Island for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations (including the one foot freeboard, cumulative substantial improvement clause, and/or other provisions deemed necessary to enhance Community Rating System credits) to maintain participation in the National Flood Insurance Program and the Community Rating System.	Building Inspection Services	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
PA	Support the Community Wildfire Protection Plan by increasing awareness of the public through educational events provided by Project Impact with the purpose of improving the protection of all structures.	Building Inspection Services Project Impact	General Fund	Minimize future wildfire damage; protect the lives of our citizens from natural and man-made hazards; 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
PA	Continue to provide coordination of County stormwater management through development and implementation of a comprehensive program. Enhance efforts at improving water quality through environmental educational activities.	Planning Public Works Building Inspection Services	General Fund Enterprise Fund Grant Funding	Improve water quality; minimize future flood damage; reduce existing flood damage; 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
PA	Continue implementing the stormwater master plan for Charleston County and the applicable regulations.	Public Works Building Inspection Services Planning	Enterprise Fund Grant Funding	Minimize future flood damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA	Continue enforcement of zoning regulations, including the low density zoning provisions of the Zoning 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
PA	Conduct or co-sponsor training workshops regarding the International Building-related, flood, and Fire Prevention Codes and Regulations, and on sustainable construction / landscaping practices, if there is interest in these workshops	Building Inspection Services	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; preserve environmental resources	1
PA	Continue providing information to citizens regarding propane tank anchoring	Building Inspection Services	General Fund Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damages; preserve environmental resources	2
PA	Continue enforcing regulations requiring new manufactured homes brought into Charleston County to be constructed to wind zone 2 requirements as required per State law.	Building Inspection Services	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1
PA	Continue prohibiting new manufactured homes to be installed in "V" flood zones and requiring manufactured homes installed in "A" flood zones to be on permanent foundations.	Building Inspection Services	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PP	Continue providing information to citizens regarding hazard safe interior rooms	Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2
PP	Continue demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	Building Inspection Services	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
PP	Seek funding for retrofitting, demolishing, or relocating repetitively flooded properties, if suitable candidates should be identified. Utilize Charleston County Repetitive Loss Area Analysis for identifying suitable candidates.	Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1
PP	Continue distributing a brochure on protecting boats from damages during hurricanes to interested citizens through expos, offices, marinas, and boat dealers.	Building Inspection Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities; preserve environmental resources, improve water quality	3
PP	Continue distributing a brochure on protecting and preserving historic artifacts to interested citizens through expos, government offices, etc.	Building Inspection Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; preserve historic building inventory; minimize future flood damage	2
PP	Seek funding for retrofitting critical facilities or infrastructure to enhanced hazard resistance in accordance with the County of Charleston Facilities Master Plan Update "Building Utilization and Needs Survey" (2003) or other applicable plans, if funding sources become available.	Building Inspection Services	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PP	Continue energy conservation retrofitting of County-owned facilities as resources are available.	Facilities Management	General Fund Grant Funding	Improve air quality	2
NB	Continue enforcement of the tree protection/landscaping ordinance	Planning	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; improve water quality; improve air quality	2
NB	Continue maintaining permanent open space as parks.	Parks and Recreation Commission	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2
NB	Continue encouraging the Greenbelt Advisory Board to acquire greenspace in the special flood hazard area, to the extent feasible.	Building Inspection Services Parks and Recreation Commission	Special Revenue Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages; improve water quality; improve air quality	2
NB	Continue participating in "Build-A-Dune" projects as funding permits, and assist other jurisdictions in participating in this initiative upon request	Building Inspection Services Public Works	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage; educating citizens regarding vulnerability to hazard and steps to reduce vulnerability; establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazard events	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
NB	Continue to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos.	Building Inspection Services	Partner donations Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage; improve water quality; improve air quality	2
NB	Develop and implement projects to reduce air and water pollution in Charleston County under the Project Impact partnership. Promote conservation of energy resources.	Building Inspection Services Project Impact	Grant Funding	Preserve environmental resources; improve water quality; improve air quality	1
NB	Encourage cooperation between county departments, other government entities, interested businesses, and citizens regarding recommended sustainable practices to protect environmental quality	Building Inspection Services Project Impact other County Departments as applicable	Grant Funding General Fund	Preserve environmental resources; improve water quality; improve air quality; promote long term economic prosperity	2
NB	Develop and Implement with Charleston County and the Ashley Cooper Stormwater Education Consortium programs to reduce stormwater runoff pollution on James Island.	Town of James Island Public Works	Stormwater Fund	Preserve environmental resources; improve water quality; improve air quality; promote long term economic prosperity	2
ES	Continue hazardous material training	Hazardous Materials Coordinator	Enterprise Fund	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Continue Terrorist Response Training	Hazardous Materials Coordinator	General Fund	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
ES	Continue coordinating Emergency Operations Center activities related to a hazard event, including holding drills for EOC personnel.	Emergency Management	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
ES	Continue responding to hazard emergencies	EMS, Fire Departments, Sheriff Department, Haz. Mat. Coordinator, Emergency Management	General Fund Enterprise 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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Continue to require improved 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 earthquake damage; minimize future hurricane damage	1
ES	Continue working to attain resources and to provide training for maritime firefighting through the Maritime Incident Response Team (MIRT).	Hazardous Materials Coordinator	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; promote long-term economic prosperity	1
ES	Maintain the National Weather Service "StormReady" and "TsunamiReady" Community designations.	Emergency Management	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Continue coordinating the Anti-Terrorism Task Force (COBRA) of specially trained police, fire and EMS personnel to respond to terrorist acts.	Hazardous Materials Coordinator	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
ES	Continue sponsoring the Community Emergency Response Training (CERT) program.	Emergency Management	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; minimize future terrorist activity incidents	2
ES	Maintain a web-based Emergency Operations Center capability.	Emergency Management	General Fund	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; preserve environmental resources; promote long-term economic prosperity	1
SP	Continue the drainage maintenance and canal cleaning program	Public Works	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Public Works	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
SP	Continue the elevation reference mark inspection program	Public Works	General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	1
SP	Continue to provide design, permitting, and construction services for the drainage improvement projects defined in Attachment VI-C Have On Call stormwater construction services available through pre-selected firms to provide infrastructure improvements on James Island.	Public Works Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	Grant Funding General Fund Stormwater Funds	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
SP	Identify stormwater drainage outfalls where backflow prevention devices would assist in preventing high tides from entering and flooding residential and commercial areas. Implement a program to install check valve devices at these locations.	Charleston County Public Works, Town of James Island Public Works, City of Charleston Stormwater, SCDOT	Stormwater Funds	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
SP	Continue the road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions Specifically the Harbor View Road Bridge and causeway at James Island Creek.	Public Works Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	General Fund Grant Funding Enterprise 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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
SP	Design/elevate roadways being constructed or reworked through the ½ cent sales tax program to minimize flooding potential to the extent feasible. Identify those roads susceptible to flooding.	Assistant Administrator for Transportation & Public Works (Transportation Sales Tax)	Special Revenue 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
SP	Continue to distribute a generator safety brochure to interested generator retail outlets, utility companies and the general public	Building Inspection Services	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
SP	Continue to provide information about the USGS stream gauge program to the public	Building Inspection Services	Partner donations Grant funding	Protecting the lives of citizens from natural hazards; minimize future flood damage; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and response for hazard events	2
PI	Provide hazard related information to all residents of Charleston County through the AT&T telephone book	Building Inspection Services	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; improve water quality	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PI	Continue providing hazard-related literature/information to citizens at Town offices	Pubic Works	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
PI	Mail an outreach project to floodplain residents to those property owners whose property is located in the special flood hazard area.	Building Inspection Services	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 hurricane damage; improve water quality	1
PI	Continue providing speakers to civic groups, James Island Neighborhood Council and other groups on James Island regarding hazard related activities and environmental quality topics.	Building Inspection Services, Public Works	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; improve water quality; improve air quality	1
PI	Continue programs aimed towards providing resources to local schools to enhance their ability to educate students regarding hazard events and hazard event preparation. Provide educational programs at schools on hazards or environmental quality as opportunities arise.	Building Inspection Services Project Impact	Grant 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; improve water quality; improve air quality	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PI	Continue participating in hazard-related/product or environmental protection-related expos or public events on James Island	Building Inspection Services, Public Works	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; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events; improve water quality; improve air quality	2
PI	Maintain the flood zone frequently asked questions page on the Charleston County web site to provide information on protecting against flood hazards to the public.	Building Inspection Services	General Fund	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2
PI	Maintain the Project Impact internet page on the Charleston County web site to relay information on Project Impact events and methods to reduce hazard-related losses to the public.	Building Inspection Services	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2
PI	Maintain a web page with information on environmental resource protection / air and water quality pollution-reduction strategies Promote carpooling, public transportation and bicycle paths.	Building Inspection Services	Grant Funding	educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1
PI	Continue educational efforts and initiatives promoting energy conservation. Promote LEED construction practices.	Building Inspection Services	General Fund Grant Funding	educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; improve air quality; preserve environmental resources	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services Project Impact	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability;	1
PI	Maintain the Facebook pages for Project Impact	Building Inspection Services Project Impact	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1
GIS	Continue inter-departmental efforts to share geographic digital information and property specific construction-related information	GIS Building Inspection Services Planning Emergency Management	General Fund Grant Funding	Protecting the lives of citizens from natural hazards; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events	2

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

Status Report for the Town of James Island, SC

Following are the proposed projects to be undertaken in the James Island Public Service District for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management (including the one foot freeboard, cumulative substantial improvement clause, and/or other provisions deemed necessary to enhance Community Rating System credits).	Charleston County Building Inspection Services	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	Continuing
PA	Continue to provide coordination of County stormwater management regulations	Charleston County Planning Public Works	General Fund	Improve water quality; 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	Continuing
PA	Continue enforcement of zoning regulations, including the low density zoning provisions of the Zoning and Land Development Regulations.	Charleston County 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	Continuing
PA	Continue providing information to citizens regarding the propane tank anchoring	Charleston County Building	General Fund/ Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize	2	Continuing

		Inspection Services		future flood damage; minimize future earthquake damage		
PA	Continue enforcing regulations requiring new manufactured homes brought into Charleston County to be constructed to wind zone 2 requirements as required per State law.	Chas. County Building Inspection Services	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1	Continuing
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.	Chas. County Building Inspection Services	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	Continuing
PP	Promote the use of voluntary standards for single-family residences to exceed minimal building code requirements for wind and seismic design.	Chas. County Building Inspection Services	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	2	Continuing
PP	Promote standards for existing homes to be retrofitted to that exceed minimal codes.	Chas. County Building Inspection Services	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	Continuing
PP	Support providing information to citizens regarding hazard safe interior rooms	Chas. County Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2	Continuing
PP	Support demolition of structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	Grants Admin.	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	Continuing

PP	Give support to seek funding for retrofitting, demolishing or relocating repetitively flooded properties if suitable candidates can be identified.	Chas. County Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1	Continuing
ES	Continue hazardous material training	James Island Public Service District Office of Safety Director and Fire Department	General and Proprietary Fund	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	Continuing Annual Training of all personnel
ES	Continue Terrorist Response Training	Charleston County Hazardous Materials Coordinator; James Island Public Service District Fire Department	General Fund	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	Continuing Annual training of all personnel
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event	Chas. County Emergency Preparedness ; James Island Public Service District	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	Continuing
ES	Continue responding to hazard emergencies	EMS, Fire Departments , Sheriff Department, Haz. Mat.	General Fund Enterprise Fund	Protecting lives of citizens from natural and man-made hazards; establishing cooperative relationships between public, private and	1	Continuing

		Coordinator, Emergency Preparedness		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		
ES	Support requirement for construction practices for new James Island PSD-owned critical facilities that are sensitive to flood zone (e.g. avoiding "A" and "V" flood zones where feasible) and seismic considerations.	Capital Projects James Island Public Service District	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 earthquake damage; minimize future hurricane damage	1	Continuing
ES	Evaluate existing James Island PSD-owned facilities for hazard resistance and retrofit facilities if needed where feasible.	James Island Public Service District	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	2	Continuing Annual Inspections of all facilities for safety and hazard awareness
ES	Sponsor training programs for medical providers on topics of interest such as decontamination procedures, etc. if there is interest in these programs.	Chas. County Hazardous Materials Coordinator; James Island Public Service District Fire Department	General Fund	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	Continuing
ES	Continue working to attain resources and to provide training for maritime fire fighting through the Marine Assistance Pact.	Chas. County Hazardous Materials Coordinator; James Island Public Service District Fire Department	Grant Funding / General Fund	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; promote long-term economic prosperity	1	<u>Discontinued</u>

ES	Maintain the National Weather Service "Storm Ready Community" designation	Emergency Preparedness ; James Island Public Service District	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	Continuing
ES	Continue coordinating the Anti- Terrorism Task Force of specially trained police, fire and EMS personnel to respond to terrorist acts.	Chas. County Hazardous Materials Coordinator; James Island Public Service District Fire Department	Grant Funding / General Fund	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	Continuing
SP	Support distribution of a generator safety brochure to interested generator retail outlets, utility companies and the general public	Chas. County Building Services	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	Continuing
PI	Continue providing hazard-related literature/information to citizens at James Island Public Service District Office.	James Island Public Service District	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	Continuing Public Contact at various public education events throughout the year. New equipment procured to train the public in fire extinguisher use

PI	Sponsor a Fire Prevention Week, including information on Hazard Awareness, and assist other communities in participating in this activity.	James Island Public Service District Fire Department	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	Continuing Annual public event in October
PI	Assist with outreach initiatives to the small business community to encourage businesses to prepare for hazard events.	Chas. County Building Inspection Services/ Project Impact Partners	Project Impact resources	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	Continuing
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	Continuing

Additional Recommended Projects may be added to this project list as the Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

7.8 – Town of Kiawah Island

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED *CHARLESTON REGIONAL HAZARD MITIGATION PLAN* BY
TOWN OF KIAWAH ISLAND**

Resolution No. 2013-4

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town has annually adopted resolutions to approve its Action Plan outlining projects to be undertaken to proactively address hazard mitigation since; and

WHEREAS the Council for the Town of Kiawah Island originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Kiawah Island to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Kiawah Island, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Council for the Town of Kiawah Island.

Effective this 3rd Day of December, 2013


The Honorable Charles R. Lipuma, Mayor

ATTEST:

Petra Reynolds, Town Clerk

Action Plan for the Town of Kiawah Island, SC

The Town of Kiawah Island is located approximately 20 miles south of Charleston. Due to our population and staff size, the Town utilizes Charleston County for planning and zoning services and Building Inspection Services are performed by town staff, which includes floodplain management, etc. The Kiawah Island Community Association (KICA) is responsible for the maintenance of Kiawah’s network of private roads, storm water utilities, etc. behind the gate.

The following are proposed projects to be undertaken or continued by the above-mentioned parties in the Town of Kiawah Island for hazard mitigation during 2017-2018.

(Abbreviations for “Type” are as follows: “PA” is Preventive Activities, “PP” is Property Protection Activities, “NB” is Natural and Beneficial Functions/Resource Preservation Activities, “ES” is Emergency Services Activities, “SP” is Structural Projects Activities, and “PI” is Public Information Activities, “GIS” is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) Addressed	Priority 1 highest – 4 lowest
PA	Continue enforcement of 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.	Kiawah Island Building Inspection Services	General Fund	Minimize future flood, earthquake, and hurricane damage; life protection from all hazards	1
PA	Continue enforcement of the Stream Dumping Ordinance (Sections 8-108 & 15-213 of Municipal Code) for the Town	Public Works, Town Code Enforcement	General Fund	Minimize future flood damage; life protection	1
PA	Promote use of voluntary standards for single family residences to exceed minimal building code requirements for wind and seismic design	Kiawah Island Building Inspection Services	General Fund	Minimize future flood, earthquake, and hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	1
PA	Continue enforcement of Building related, flood and Fire Prevention Codes and Regulations	Kiawah Island Building Inspection Services	General Fund	Minimize future flood, earthquake, and hurricane damage; life protection from all hazards	1
PA	Continue enforcement of storm water management regulations	Administration	General Fund	Minimize future flood damage; life protection	1
PA	Continue enforcement of zoning regulations	Charleston County Planning, Planning Commission	General Fund	Minimize future flood, earthquake, hurricane damage; preserve natural resources; promote long-term economic prosperity; preserve open space; encourage recreational activities; protect lives	1

PA	Continue to sponsor/support training workshops regarding Building related, flood, and Fire Prevention Codes and Regulations, if there is interest	Kiawah Island Building Inspection Services, Administration	General Fund	Education about vulnerability and steps to reduce; minimize damage from disaster events.	2
PA	Participate in Charleston County Hazard Mitigation Planning activities	Administration	General Fund	Education about vulnerability and steps to reduce; minimize damage from disaster events.	2
PP	Continue providing information for data entry for the County GIS system for hazard-related assessments	Administration	General Fund		2
PP	Promote use of voluntary standards for single family residences to exceed minimal building code requirements for wind and seismic design	Kiawah Island Building Inspection Services	General Fund	Minimize future flood, earthquake, and hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	1
PP	Provide information to citizens regarding hazard safe interior rooms	Administration	General Fund	Minimize loss of life due to tornado; educate citizens of vulnerability and mitigation	3
NB	Continue enforcement of the tree protection & landscaping ordinance (Section 12A-403 of Municipal Code)	Charleston County Planning	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1
NB	Continue maintaining permanent open space as parks	Charleston County Planning, Planning Commission	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	1
NB	Provide information to citizens regarding establishing and maintaining buffer zones at water's edges	KICA, Administration	General Fund, Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage	2

NB	Work with OCRM to introduce sand fencing in appropriate areas as identified.	Administration	General Fund; Special Revenues	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage	2
NB	Continue to monitor the beach and take appropriate actions to address erosion issues as they arise.	Administration	General Fund; Special Revenues	Minimize future flood and hurricane damage; preserve natural resources; promote long-term economic prosperity; preserve open space; encourage recreational activities	1
ES	Continue coordinating Municipal Emergency Operations Center activities in the event of a hazard event.	Charleston County Emergency Preparedness Administration	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
ES	Continue responding to hazard emergencies	Administration County & Local Agencies	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
ES	Continue to support and promote the Community Emergency Response Training (CERT) program, if requested	Administration	General Fund	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; minimize future terrorist activity incidents	4

SP	Continue the drainage maintenance and canal cleaning program	KICA	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	2
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Charleston County Public Works, Administration	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	2
SP	Provide input to County on road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	Administration	General Fund	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	2
PI	Mail hazard related information to all residents of Kiawah Island; provide residents with Town Emergency Preparedness Plan and packets	Administration	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
PI	Continue providing hazard-related literature/information to citizens at Town Hall	Administration	General Fund		1
PI	Sponsor "Hazard Awareness Week"	Administration	General Fund		2
PI	Continue sponsoring a "Disaster Awareness Day" for Town citizens	Administration	General Fund		1
PI	Continue utilizing Town newsletter and website for the dissemination of hazard-related literature/information	Administration	General Fund		1
PI	Continue contract and promotion of the emergency alert system, CodeRed	Administration	General Fund		Protecting the lives of citizens from natural hazards through early alert

PI	Continue participating in the Project Impact Outreach Project Strategy for the Community Rating System. Participate in the Program for Public Information (PPI).	Administration	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability;	1
GIS	Provide information to County concerning critical facilities data, repetitive loss property information, flood data, street data, parcel data, and TIGER data into the GIS system	Administration	General Fund; Grant Funding	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;	2
GIS	Expand Town GIS database to include hazard-related information, e.g., critical facilities, emergency operations centers, repetitive flood properties, etc.	Administration	General Fund	minimize future flood damage and hurricane damage	1

The Town of Kiawah Island shall, through Project Impact, provide support to the many activities and projects that will benefit the residents of the Town. Additional recommended projects may be added to this project list as other projects are recommended to Charleston County Council and the Town of Kiawah Island. Some Projects that are being undertaken by Charleston County may not necessarily be listed here but may affect the Town of Kiawah Island.

Status Report for the Town of Kiawah Island, SC

The Town of Kiawah Island is located approximately 20 miles south of Charleston. Due to our population and staff size, the Town utilizes Charleston County to perform some of our services including planning, public works, etc. Further, the Kiawah Island Community Association (KICA) is responsible for the maintenance of Kiawah’s network of private roads, storm water utilities, etc. behind the gate.

The following are proposed projects to be undertaken or continued by the above-mentioned parties in the Town of Kiawah Island for hazard mitigation during 2016-2017 and their status through April 2017.

(Abbreviations for “Type” are as follows: “PA” is Preventive Activities, “PP” is Property Protection Activities, “NB” is Natural and Beneficial Functions/Resource Preservation Activities, “ES” is Emergency Services Activities, “SP” is Structural Projects Activities, and “PI” is Public Information Activities, “GIS” is Geographic Information Systems Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority 1 highest – 4 lowest</i>	<i>Status</i>
PA	Continue enforcement of 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.	Kiawah Island Building Inspection Services	General Fund	Minimize future flood, earthquake, and hurricane damage; life protection from all hazards	1	ongoing
PA	Continue enforcement of the Stream Dumping Ordinance (Sections 8-108 & 15-213 of Municipal Code) for the Town	Public Works, Town Code Enforcement	General Fund	Minimize future flood damage; life protection	1	ongoing
PA	Promote use of voluntary standards for single family residences to exceed minimal building code requirements for wind and seismic design	Kiawah Island Building Inspection Services	General Fund	Minimize future flood, earthquake, and hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	3	Ongoing
PA	Continue enforcement of Building related, flood and Fire Prevention Codes and Regulations	Kiawah Island Building Inspection Services	General Fund	Minimize future flood, earthquake, and hurricane damage; life protection from all hazards	1	Ongoing
PA	Continue enforcement of storm water management regulations	Administration	General Fund	Minimize future flood damage; life protection	1	Ongoing

PA	Continue enforcement of zoning regulations	Charleston County Planning, Planning Commission	General Fund	Minimize future flood, earthquake, hurricane damage; preserve natural resources; promote long-term economic prosperity; preserve open space; encourage recreational activities; protect lives	1	Ongoing
PA	Continue to sponsor/support training workshops regarding Building related, flood, and Fire Prevention Codes and Regulations, if there is interest	Kiawah Island Building Inspection Services, Administration	General Fund	Education about vulnerability and steps to reduce; minimize damage from disaster events.	2	Ongoing
PA	Participate in Charleston County Hazard Mitigation Planning activities	Administration	General Fund	Education about vulnerability and steps to reduce; minimize damage from disaster events.	2	Ongoing
PP	Continue providing information for data entry for the County GIS system for hazard-related assessments	Administration	General Fund		2	Ongoing
PP	Promote use of voluntary standards for single family residences to exceed minimal building code requirements for wind and seismic design	Kiawah Island Building Inspection Services	General Fund	Minimize future flood, earthquake, and hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	1	Ongoing
PP	Provide information to citizens regarding hazard safe interior rooms	Administration	General Fund	Minimize loss of life due to tornado; educate citizens of vulnerability and mitigation	3	Ongoing
NB	Continue enforcement of the tree protection & landscaping ordinance (Section 12A-403 of Municipal Code)	Charleston County Planning	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1	Ongoing
NB	Continue maintaining permanent open space as parks	Charleston County Planning, Planning Commission	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	1	Ongoing

NB	Provide information to citizens regarding establishing and maintaining buffer zones at water's edges	KICA, Administration	General Fund, Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage	1	Ongoing
NB	Work with OCRM to introduce sand fencing in appropriate areas as identified.	Administration	General Fund; Special Revenues	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage	2	Ongoing
NB	Continue to monitor the beach and take appropriate actions to address erosion issues as they arise.	Administration	General Fund; Special Revenues	Minimize future flood and hurricane damage; preserve natural resources; promote long-term economic prosperity; preserve open space; encourage recreational activities	1	Ongoing

ES	Continue coordinating Municipal Emergency Operations Center activities in the event of a hazard event.	Charleston County Emergency Preparedness Administration	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	Ongoing
ES	Continue responding to hazard emergencies	Administration County & Local Agencies	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	Ongoing

ES	Continue to support and promote the Community Emergency Response Training (CERT) program, if requested	Administration	General Fund	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; minimize future terrorist activity incidents	4	Ongoing
SP	Continue the drainage maintenance and canal cleaning program	KICA	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	2	Ongoing
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	Charleston County Public Works, Administration	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	2	Ongoing
SP	Provide input to County on road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	Administration	General Fund	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	2	Ongoing

PI	Mail hazard related information to all residents of Kiawah Island; provide residents with Town Emergency Preparedness Plan and packets	Administration	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	Ongoing
PI	Continue providing hazard-related literature/information to citizens at Town Hall	Administration	General Fund		1	Ongoing
PI	Sponsor "Hazard Awareness Week"	Administration	General Fund		2	Ongoing
PI	Continue sponsoring a "Disaster Awareness Day" for Town citizens	Administration	General Fund		1	Ongoing
PI	Continue utilizing Town newsletter and website for the dissemination of hazard-related literature/information	Administration	General Fund		1	Ongoing
PI	Continue contract and promotion of the emergency alert system, CodeRed	Administration	General Fund	Protecting the lives of citizens from natural hazards through early alert	1	Ongoing
PI	Continue participating in the Project Impact Outreach Project Strategy for the Community Rating System. Participate in the Program for Public Information (PPI).	Administration	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability;	1	Ongoing
GIS	Provide information to County concerning critical facilities data, repetitive loss property information, flood data, street data, parcel data, and TIGER data into the GIS system	Administration	General Fund; Grant Funding	Protecting the lives of citizens from natural hazards; establishing cooperative relationships between the public, private, and non-profit sectors to	2	Ongoing

GIS	Expand Town GIS database to include hazard-related information, e.g., critical facilities, emergency operations centers, repetitive flood properties, etc.	Administration	General Fund	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 and hurricane damage	1	Ongoing
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The Town of Kiawah Island shall, through Project Impact, provide support to the many activities and projects that will benefit the residents of the Town. Additional recommended projects may be added to this project list as other projects are recommended to Charleston County Council and the Town of Kiawah Island. Some Projects that are being undertaken by Charleston County may not necessarily be listed here but may affect the Town of Kiawah Island.

7.9 - Town of Lincolville

Resolution for Adoption

TYRONE E. AIKEN
Mayor

COUNCIL MEMBERS

DOROTHY BAILEY
BARBARA DEASE
ENOCH DICKERSON
CHARLES DUBERRY
JAMES HAMP TUN
ANNA R. WILLIAMS-GLEATON

CLERK
LINDA G. RHODES

Town of Lincolville



Established
2-14-1889

141 W. BROAD STREET
P.O. BOX 536
LINCOLNVILLE, SC 29485

PHONE (843) 873-3261
FAX (843) 873-3267

**A RESOLUTION FOR THE ADOPTION OF THE REVISED *CHARLESTON REGIONAL HAZARD MITIGATION PLAN* BY
THE TOWN OF LINCOLNVILLE, SOUTH CAROLINA**

Resolution No. 2008-1001

WHEREAS the Town of Lincolville has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and


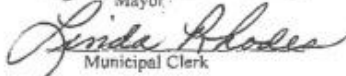
WHEREAS the Town of Lincolville originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, and is required to adopt the amended version of this plan on a five-year cycle for the Town to remain eligible for certain Federal programs in which the Town of Lincolville participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Lincolville, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town of Lincolville Council.

Effective this 30th Day of September, 2008

Attest:


Mayor

Municipal Clerk

Action Plan for the Town of Lincolnton, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full action plan. There are no proposed projects additional to the action plan of Charleston County.

Status Report for the Town of Lincolnton, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full status report. There are no proposed projects additional to the status report of Charleston County.

7.10 - Town of McClellanville

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
TOWN COUNCIL FOR THE TOWN OF McCLELLANVILLE, S.C.
Resolution No. 2013-5**

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of McClellanville originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of McClellanville to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of McClellanville, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town Council for the Town of McClellanville, S.C.

Effective this 7th Day of Oct., 2013

Action Plan for the Town of McClellanville, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full action plan. Below are the proposed projects additional to the action plan of Charleston County.

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
NB	Continue to apply for Greenbelt Bank funding for acquisition of open space	Planning and Zoning, Town Administration	Greenbelt Bank funding	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2
NB & ES	Seek information for residents about the FireWise program, and encourage participation in this program by interested neighborhoods or communities.	Awendaw Fire Department/ Building Inspection Services Town Administration	General Fund/ Grant Funding	Protecting lives of our citizens from man-made hazards; 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.	2
SP	Continue to submit drainage and road improvement projects for funding through the County's "C-Fund" and "Roadwise" programs	Town Administration	CTC and Roadwise funding	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
PI	Provide hazard related information to all residents of McClellanville through the Town Newsletter and Town website	Town Administration	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
PI	Publish an outreach project to floodplain residents and to those property owners whose property is located in the special flood hazard area in the Town Newsletter and on the Town website.	Town Administration	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 hurricane damage	1
PI	Recognize "International Building Safety Week" to promote safety in the built environment	Building Inspection Services	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PI	Maintain a link to the Charleston County Hazard Mitigation Plan on the town website.	Town Administration	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability.	1
PI	Maintain a link to Charleston County's Hurricane Guide, as well as Flood Zone and Flood Protection Information.	Town Administration	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
PI	Provide on the Town website an overlay map of McClellanville properties on the FEMA flood map of the area.	Town Administration	General Fund	Clarifying flood zones; protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability.	2
PI	Provide a link to the Town's Flood Prevention Ordinance as part of the Town Code on the McClellanville website.	Town Administration	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.	2
PP	Town Building Official will maintain his certification as a Certified Floodplain Manager.	Building Inspection Services	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
PP	The Town contracts Charleston County Building Inspection Services to perform all building inspection services for the Town consistent with the responsibilities of the Town Building Official as required by State and Federal Statutes.	Building Inspection Services	General Fund	To reduce the vulnerability of existing, new and future development of buildings and homes, to minimize exposure and vulnerability of people, buildings, an critical facilities to potential hazard, to increase public awareness and support of hazard mitigation and to establish intergovernmental cooperation for conducting hazard mitigation activities.	<u>1</u>

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

Status Report for the Town of McClellanville, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full status report. Below are the proposed projects additional to the status report of Charleston County.

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
NB	Continue to apply for Greenbelt Bank funding for acquisition of open space	Planning and Zoning Town Administration	Greenbelt Bank funding	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2	On-going
NB	Continue to apply for Greenbelt Bank funding for acquisition of open space	Planning and Zoning Town Administration	Greenbelt Bank funding	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2	On-going
SP	Continue to submit drainage and road improvement projects for funding through the County's "C-Fund" and "Roadwise" programs	Town Administration	CTC and Roadwise funding	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	On-going
PI	Provide hazard related information to all residents of McClellanville through the TDS Telecom phone book	Town Administration	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	On-going
PI	Recognize "International Building Safety Week" to promote safety in the built environment	Building Inspection Services	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	On-going
PI	Maintain a link to the Charleston County Hazard Mitigation Plan on the town website.	Town Administration	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability.	1	On-going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PI	Maintain a link to Charleston County's Hurricane Guide, as well as Flood Zone and Flood Protection Information.	Town Administration	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	On-going
PI	Provide on the Town website an overlay map of McClellanville properties on the FEMA flood map of the area.	Town Administrative Staff	General Fund	Clarifying flood zones; protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability.	2	On-going
PI	Provide a link to the Town's Flood Prevention Ordinance as part of the Town Code on the McClellanville website.	Town Administrative Staff	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.	2	On-going
PP	Town Building Official will maintain his certification as a Certified Floodplain Manager.	Building Inspection Services	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.	<u>1</u>	On-going

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

7.11 - Town of Meggett

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
TOWN OF MEGGETT, MEGGETT TOWN COUNCIL**

Resolution No. 2013-04

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

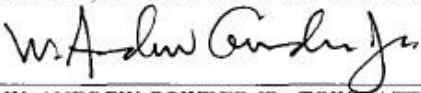
WHEREAS the Town of Meggett originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the town to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Meggett, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the TOWN OF MEGGETT, MEGGETT TOWN COUNCIL.

Effective this 28th Day of October 2013


MAYOR, HARRY V. "BUSTER" HERRINGTON III


W. ANDREW GOWDER JR., TOWN ATTORNEY

Action Plan for the Town of Meggett, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full action plan. There are no proposed projects additional to the action plan of Charleston County.

Status Report for the Town of Meggett, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full status report. There are no proposed projects additional to the status report of Charleston County.

7.12 – Town of Mt. Pleasant

Resolution for Adoption

RESOLUTION NO. R.13092

STATE OF SOUTH CAROLINA)	
)	A RESOLUTION ADOPTING THE
COUNTY OF CHARLESTON)	REVISED <i>CHARLESTON REGIONAL</i>
)	<i>HAZARD MITIGATION PLAN</i>
TOWN OF MOUNT PLEASANT)	

WHEREAS the Town of Mount Pleasant has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan (2013)*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and


WHEREAS the County of Charleston and Town of Mount Pleasant originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town to remain eligible for certain Federal programs in which the Town of Mount Pleasant participates, and

NOW THEREFORE be it resolved by the Mayor and Councilmembers of the Municipality of Mount Pleasant, in Council assembled, that the *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Mount Pleasant, and

BE IT FURTHER RESOLVED that the Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Mount Pleasant Council.


THIS RESOLUTION SHALL BE EFFECTIVE IMMEDIATELY UPON ITS ADOPTION.

SIGNED, SEALED AND DELIVERED THIS 11 DAY OF September, 2013.



William D. Swails, Mayor
Town of Mount Pleasant

ATTEST:



Christine Barrett
Clerk of Council

September 11, 2013

APPROVED AS TO FORM:



David G. Pagliarini
Corporation Counsel

Action Plan for the Town of Mount Pleasant, SC

Following are the proposed projects undertaken/ continued in the Town of Mount Pleasant for hazard mitigation during 2017-2018

(Abbreviations for "TYPE" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Priority 1= existing/ ongoing program; Priority 2 = program to be evaluated or implemented within 1-2 year; Priority 3 = program to be evaluated/ implemented within 3-5 years; Priority 4 = program conducted as funding/ opportunity allows (no schedule)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
PA	Implement Town Strategic Plan Themes, Goals, Objectives, and initiatives which support emergency preparedness and disaster resistance	All Departments	General Funds, Grant Funds	Continue to seek opportunities to improve municipal services to build a disaster resistant community; protect the lives of citizens and first responders, and to maximize post event recovery.	1
PA	Continue to review and augment Town activities to improve Community Rating System ranking; incorporate program changes from the new CRS Coordinator's Manual into the Town's activities	Building Inspection Services	General Fund	Continue to seek opportunities to improve floodplain related activities; ordinances; and programs to help protect citizens from flood related hazards	1
PA	Review ISO programs for opportunities to increase ISO ratings	All Departments	General Fund	Continue to seek opportunities to improve ISO related activities; ordinances; and programs to help protect citizens from flood hazards	1
PA	Continue enforcement of the State mandated Building Codes, the permissive codes as adopted by Town Council, and the Town's Flood Damage Prevention Ordinance.	Building Inspection Services/ Public Services/ Fire Department	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
PA	Review and update regulations regarding construction in flood zones.	Building Inspection Services	General Fund	Minimize future flood damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	3
PA	Continue to enforce stormwater management regulations.	Public Services/ Planning Department	General Fund	Minimize future flood damage; reduce existing flood damage; improve water quality; educate 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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
PA	Continue enforcement of zoning regulations.	Planning Department	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
PA	Conduct, support, or participate in seminars, workshops, and other outreach programs regarding the State mandated Building Codes, the Town's Flood Damage Prevention Ordinance, and hazard mitigation strategies.	Building Inspection Services	General Fund	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
PA	Continue to review and evaluate development practices such as LEED and LID for incorporation into Town Land Development and construction standards, where feasible.	Planning Department Stormwater Division	General Funding Special Permit Funds Grants	Minimize future flood damage; preserve environmental resources; promote long-term economic prosperity; preserve open space; encourage recreational activities; minimize future hurricane damage;; protecting the lives of our citizens from natural and man-made hazards	2
PA	Continue enforcing ordinance requirements for the elevation and anchoring of manufactured homes	Building Inspection Services	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
PA	Continue enforcing regulations requiring new manufactured homes brought into the Town to be constructed to wind zone 2 requirements as required per State law.	Building Inspection Services	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1
PA, PP	Continue to participate in climate studies and programs, continue to evaluate infrastructure vulnerability as climate data becomes available.	All Departments	General Fund, special funds, grant funds	Reduce vulnerability of property, citizens, and infrastructure to climate related hazards	3
PP	Update/ Establish Cyber security measures to protect critical data from loss during natural or man-made events.	IT department	General Funds	Reduce vulnerability of infrastructure to natural and man-made hazards	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
PP	Promote the use of voluntary standards for single-family residences to exceed minimum building code requirements for wind and seismic design.	Building Inspection Services	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	4
PP	Continue energy conservation retrofitting of Town-owned facilities and infrastructure as resources are available.	All departments	General Fund Grant Funding	Improve air quality, water quality and resiliency. New town hall is Energy Star Certified and will replace old outdated facilities.	1
PP	Promote standards for existing homes to be retrofitted to exceed minimum code and ordinance requirements.	Building Inspection Services	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	4
PP	Continue providing information to citizens regarding hazard safe interior rooms	Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2
PP	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties if suitable candidates can be identified.	Public Services Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	4
PP	Consider demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	Building Inspections Services	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	4
PP	Distribute a brochure on protecting boats from damages during hurricanes to interested citizens	Public Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities	4
PP	Distribute a brochure on protecting and preserving historic artifacts to interested citizens	Public Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; preserve historic building inventory; minimize future flood damage	4
PP	Seek funding for retrofitting critical facilities to enhanced hazard resistance and resiliency, if funding sources become available.	Planning Department	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
NB	Continue enforcement of the tree protection/landscaping ordinance	Planning Department	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1
NB	Continue maintaining permanent open space as parks	Recreation Department/ Public Services Department	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	1
NB	Continue to distribute literature on riparian buffer zones, shoredscaping, rainwater reuse, and hazard resistant landscaping to citizens through government offices.	Public Services	Partner donations/ Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage	1
NB	Review and develop framework for management plans that address flood mitigation and/ or water quality by watersheds.	Public Services Stormwater Division	General Funds, Special funds, Grant funds	Preserve environmental resources; promote long-term economic prosperity; improve water quality; improve hazard resistance of infrastructure; minimize future flood damages.	2
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
PA	Continue to provide coordination of local stormwater management regulations, and seek funding sources for NPDES permit required activities.	Planning Public Services	General Fund Stormwater Fund Special Revenue 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
PA/ PI	Continue to develop and provide a comprehensive stormwater management outreach and participation program to enhance efforts at improving water quality through environmental educational activities.	Public Services	General Fund Special revenue Stormwater Program	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
PA/ SP, GIS	Develop and implement Illicit Discharge Detection Program to eliminate pollutant discharges into the storm drainage system. Includes staff training and spill responses in conjunction with NPDES program.	Public Services Planning Fire Department Police Department	General Fund Special revenue (stormwater Utility)	Minimize environmental damages caused by pollutant discharges; improve responses to hazardous spill events; improve and coordinate enforcement activities	1
GIS	Continue to improve and expand the use of GIS technology and capabilities for use with pre and post disaster vulnerability assessments, long range asset management and emergency planning.	All Departments	General Fund, Special Revenues, Grant Funding	Minimize infrastructure damage; maximize post event recovery; protect the lives of citizens and first responders through emergency planning operations.	2
ES	Develop/ update Standard Operating Procedures for the Municipal Emergency Operations Center	All Departments Emergency Manager	General Fund, Grant funds	Protecting the lives of first responders during natural and man-made events. Protecting lives of citizens from man-made and natural hazard events through incident management. In June of 2017, the Town advertised to hire its first Emergency Manager. They will lead on this plan.	2
ES	Continue to obtain specialty equipment for HAZMAT and other emergency response operations	Fire Department, Police Department Public Services Department	Grant funding/ General Funds	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
ES	Continue Specialized rescue and fire suppression training activities - confined space, high angle, and bridge rescue.	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
ES	Obtain specialty equipment such as breakers, power unit, a search cam, diamond chain saw, cut off saw, pump and associated equipment to perform special rescues for building collapses, trench rescues and other specialty rescues associated with earthquake and terrorism events	Fire Department	General Fund/ Grant funding	Protecting lives of citizens from man-made and natural hazard events.	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
ES	Continue Terrorist Response Training.	Police Department	General Fund/ Grant funds	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
ES	Continue to seek funding and opportunities to provide safe shelter for residents and Town staff.	General Government	Grant Funding/ 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
ES	Continue to improve hazard warning tools for communication between local government and residents	Police/ General Government	Grant funding/ 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
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event	General Government Emergency Manager	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
ES	Continue responding to hazard emergencies	All Departments Emergency Manager	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
ES	Evaluate existing Town-owned facilities for hazard resistance and retrofit facilities or incorporate needs into new buildings if needed, where feasible.	Building Inspection Services	General Fund/ Grant 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	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
ES	Continue working to attain resources and to provide training for maritime firefighting through the Marine Assistance Pact.	Fire Department	Grant Funding/ General Funds	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; promote long-term economic prosperity	1
ES	Continue coordinating the Anti- Terrorism Task Force of specially trained police, fire and EMS personnel to respond to terrorist acts. To include USAR team development and training.	Fire Department/ 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 relationships between public, private and non-profit sectors to enhance response for hazard events; promote long-term economic prosperity.	1
ES	Promote the Community Emergency Response Training (CERT) program and coordinate response efforts with local CERT members.	Emergency Preparedness	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; minimize future terrorist activity incidents	4
SP	Continue to develop and support Asset Management program and associated Capital Improvements Project for road and drainage infrastructure Incorporate LID/ Green Infrastructure and resiliency where feasible.	Public Services/ Transportation	General Fund, Stormwater Utility, Grant Funding	Protect the lives of our citizens from natural hazards through timely infrastructure upgrade and life cycle replacement programs; reduce existing flood damage; minimize future flood damage; improve hazard resistance of infrastructure; promote long-term economic prosperity	1
SP	Continue the drainage maintenance and canal cleaning program.	Public Services/ Stormwater	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
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone and water quality related issues in permitting decisions.	Planning Department	General Fund	Protect the lives of our citizens from natural and man-made hazards; reduce existing flood damage; minimize future flood damage; protect water quality; improve hazard resistance of infrastructure; promote long-term economic prosperity	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
SP	Continue to develop and update the elevation reference mark inspection program.	Planning Department	General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	1
SP	Continue to provide design, permitting, and construction services for the drainage projects defined in Attachment VI-C and identify new projects as they arise	Public Services/ Stormwater	Grant Funding/ 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
SP	Continue the road repair/construction program and implement Transportation Management Plan and Programs.	Planning Department, Transportation Department	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
SP	Support and sponsor placement of hurricane storm surge signs installed through Project Impact.	Public Services	Partner donations/ 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	4
PI	Provide hazard related information to all residents of Charleston County through the AT&T telephone book, billboards, and other outreach methods	Charleston County	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
PI	Sponsor/ Support/ Promote Hazard Awareness and Safety Awareness Weeks with other area jurisdictions and provide hazard-related literature/information to include man-made and natural hazards to citizens at Town offices	Public Services Department, Fire Department, Police Department, Planning Department, PIO	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	4
PI	Continue providing speakers to civic groups regarding hazard related activities. Update the Speaker's Bureau list as needed.	General Government	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
ES	Obtain and operate mobile command units for disaster and other event use	Police Department	General Funds/ Grant Funding	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
ES	Design and construct emergency response training facility - Phases 2+	Fire Department	Grant Funding	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	2
ES/ SP	Continue ICS and NIMS training for all responders.	All Departments	Grant funding General funds	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	2
ES/ PP PI	Supply all programs with necessary tools/ educational materials/ training outreach Participate in the Program for Public Information (PPI) to achieve maximum public outreach.	Police Department Fire Department Public Services	Grant funding General funds	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	3
PA	Continue to update and modify hurricane response plan for Town area. Complete search and rescue grid maps and data	Fire Department/ Public Services	Grant funding General funds	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	3
PP	Develop damage assessment teams, training program, and damage assessment maps.	All departments	General Funds	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	2
PP	Update and revise Flood Insurance Rate Maps (FIRM) with SCDNR	Building Services Planning Department	Grant funding General funds	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
PP	Continue Flap gate inspection, replacement, and Cleaning Program	Public Services	Stormwater Funds	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
PP	Continue sandbag program for residents	Public Services	General Funds	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	4
PP	Continue to incorporate infrastructure data into a GIS system to help analyze flood and other hazard related issues for future project planning.	Planning	Grant funding General funds	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.	2
PA	Work to standardize flood damage reporting system.	Public Services	Stormwater Funds General Funds	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.	2
PI / PP/ NB	Continue storm drain marking program with citizen participation	Public Services	Grant funding General funds	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.	4
PI, PA	Continue current outreach projects for CRS and develop new outreach projects based upon guidance in the updated CRS Coordinator's Manual.	Planning	General funds	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority
PI	Continue development of WEB EOC - hazard information outreach to residents	All Departments	Grant funding General funds	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	2
PI, PP, SP, NB	Continue to work with Charleston County to support and, where possible, directly participate, in the EPA CARE grant and other available programs	Public Service	General Funds, Stormwater Funds, Grant Funds	Protecting lives of our citizens from environmental hazards; preserve environmental resources; improve environmental impact of infrastructure; establishing cooperative relationships between public, private and non-profit sectors to enhance response to environmental events; promote long-term economic prosperity.	1
PI	Develop and distribute a stormwater information to all residents to inform them of projects, provide them with flooding, and water quality and resiliency information.	Public Services	Stormwater Funds	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.	4
PI, PA	In conjunction with Charleston County, develop a Program for Public Information (PPI)	Planning Public Services Government Outreach PIO	General funds	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

Status Report for the Town of Mount Pleasant, SC

Following are the proposed projects undertaken/ continued in the Town of Mount Pleasant for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for "TYPE" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Priority 1= existing/ ongoing program; Priority 2 = program to be evaluated or implemented within 1-2 year; Priority 3 = program to be evaluated/ implemented within 3-5 years; Priority 4 = program conducted as funding/ opportunity allows (no schedule)

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PA	Implement Town Strategic Plan Themes, Goals, Objectives, and initiatives which support emergency preparedness and disaster resistance	All Departments	General Funds, Grant Funds	Continue to seek opportunities to improve municipal services to build a disaster resistant community; protect the lives of citizens and first responders, and to maximize post event recovery.	1	https:// data.tompsc.com/ A live status of progress on the goals is located on this website.
PA	Continue to review and augment Town activities to improve Community Rating System ranking; incorporate program changes from the new CRS Coordinator's Manual into the Town's activities	Building Inspection Services	General Fund	Continue to seek opportunities to improve floodplain related activities; ordinances; and programs to help protect citizens from flood related hazards	1	Ongoing - upgrading GIS system, added new site drainage inspection activities, working with Charleston Regional Hazard Mitigation Plan to create a PPI to enhance outreach.
PA	Review ISO programs for opportunities to increase ISO ratings	All Departments	General Fund	Continue to seek opportunities to improve ISO related activities; ordinances; and programs to help protect citizens from flood hazards	1	The Fire Department has requested an ISO evaluation this year and is in contact with the evaluator.
PA	Continue enforcement of the State mandated Building Codes, the permissive codes as adopted by Town Council, and the Town's Flood Damage Prevention Ordinance.	Building Inspection Services/ Public Services/ Fire Department	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	The Fire Department completed 4,182 code inspections last year and discovered 1,271 violations. Building Inspection Division fiscal year to date inspections completed total 26,649.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PA	Review and update regulations regarding construction in flood zones.	Building Inspection Services	General Fund	Minimize future flood damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	3	Ongoing. Preliminary new FIRMs have been released. Updates to the flood regulations are being considered, but no updates are likely until the new FIRMs become effective. No updates made. Proposed flood maps were provided for Public Comment and review in March 2017 - awaiting final map releases to determine if new requirements will be needed. Received updates to CRS manual. Changes are under review to determine if additional requirements will be needed.
PA	Continue to enforce stormwater management regulations.	Public Services/ Planning Department	General Fund	Minimize future flood damage; reduce existing flood damage; improve water quality; educate 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	In 2016, Stormwater Completed 1,042 Inspections - (709) Compliance Inspections, (27) C&G inspections (14) Civil Inspections (25) NOT Inspections (12) Illicit Discharge Inspections (64) Individual Lot Inspections (20) Outfall Inspections (88) Post (Disaster) Event Inspections (16) stabilization Inspections (18) Final Plat Inspections (52) New Pipe Inspections (1) End of Warranty Inspections (6) Upstream Structure Inspections Inspections of Main drainage channels
PA	Continue enforcement of zoning regulations.	Planning Department	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	Ongoing. New zoning regulations are being considered in older neighborhoods to help minimize the impact of the subdivision of older properties in areas with substandard drainage systems.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PA	Conduct, support, or participate in seminars, workshops, and other outreach programs regarding the State mandated Building Codes, the Town's Flood Damage Prevention Ordinance, and hazard mitigation strategies.	Building Inspection Services	General Fund	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	Ongoing. The Planning Department (including the Building Inspection Division) continues to conduct Planning College sessions (3 with average attendance of 20) and Code for Lunch with presentations (3 with average attendance of 40). A Meet & Greet session was also held with attendance of just over 100. Three flood related presentations to community groups have also been made to date.
PA	Continue to review and evaluate development practices such as LEED and LID for incorporation into Town Land Development and construction standards, where feasible.	Planning Department Stormwater Division	General Funding Special Permit Funds Grants	Minimize future flood damage; preserve environmental resources; promote long-term economic prosperity; preserve open space; encourage recreational activities; minimize future hurricane damage; protecting the lives of our citizens from natural and man-made hazards	2	Uploaded LID Manual Links to Town Website for Public Access/ Use. Several projects in Town are utilizing low impact development practices
PA	Continue enforcing ordinance requirements for the elevation and anchoring of manufactured homes	Building Inspection Services	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	Ongoing as part of the building code and inspection program - two manufactured homes have been installed to date in the SFHA in Mt. Pleasant and these were elevated to or above the DFE.
PA	Continue enforcing regulations requiring new manufactured homes brought into the Town to be constructed to wind zone 2 requirements as required per State law.	Building Inspection Services	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1	Ongoing as part of the building code and inspection program - only a few manufactured homes have been installed to date in Mt. Pleasant and these were checked by field inspectors to verify compliance.
PA, PP	Continue to participate in climate studies and programs, continue to evaluate infrastructure vulnerability as climate data becomes available.	All Departments	General Fund, special funds, grant funds	Reduce vulnerability of property, citizens, and infrastructure to climate related hazards	3	Participate in Clemson Climate Study, provide documentation as requested. Identify low lying roadways and possible pipes for future installation of flap gates

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PP	Update/ Establish Cyber security measures to protect critical data from loss during natural or man-made events.	IT department	General Funds	Reduce vulnerability of infrastructure to natural and man-made hazards	2	Town recently obtain cyber security insurance through its carrier. The town has bi-annual training conducted by IT, the new town hall has a new network built to increase security.
PP	Promote the use of voluntary standards for single-family residences to exceed minimum building code requirements for wind and seismic design.	Building Inspection Services	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	4	Ongoing - literature is provided in the Building Permit & Inspection Office and through Project Impact.
PP	Continue energy conservation retrofitting of Town-owned facilities and infrastructure as resources are available.	All departments	General Fund Grant Funding	Improve air quality, water quality and resiliency.	1	The new town hall building will replace outdated, non-efficient buildings. It is Energy Star Certified. A Green Roof is proposed to be installed.
PP	Promote standards for existing homes to be retrofitted to exceed minimum code and ordinance requirements.	Building Inspection Services	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	4	Ongoing - literature is provided in the Building Permit & Inspection Office and through Project Impact.
PP	Continue providing information to citizens regarding hazard safe interior rooms	Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2	Ongoing - literature is provided in the Building Permit & Inspection Office and through Project Impact.
PP	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties if suitable candidates can be identified.	Public Services Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	4	Several projects are considering this option in their drainage improvement and cost/ benefit analysis. If selected funding applications will be submitted for consideration.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PP	Consider demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	Building Inspections Services	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	4	Ongoing - as needed (no action taken in 2016 or to date in 2017)
PP	Distribute a brochure on protecting boats from damages during hurricanes to interested citizens	Public Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities	4	Brochure made available at Stormwater Offices and at Blessing of the Fleet Event
PP	Distribute a brochure on protecting and preserving historic artifacts to interested citizens	Public Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; preserve historic building inventory; minimize future flood damage	4	Brochure made available at Stormwater Offices and at Blessing of the Fleet Event
PP	Seek funding for retrofitting critical facilities to enhanced hazard resistance and resiliency, if funding sources become available.	Planning Department	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1	Completed construction of New Town Hall facility which includes new MEOC and Fire Station #6 which are constructed as critical facilities, outside of special flood hazard areas, and to current building codes.
NB	Continue enforcement of the tree protection/landscaping ordinance	Planning Department	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1	Continue to implement Clearing and Grading Permit, tree inspection and protection ordinances. Several ordinance updates were made and additional updates are in development.
NB	Continue maintaining permanent open space as parks	Recreation Department / Public Services Department	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	1	The town completed its master plan for Rifle Range Park with PRC which secures open land as a part of the Plan with passive park space. The town completed a master plan for Carolina Park Rec Complex.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
NB	Continue to distribute literature on riparian buffer zones, shorescaping, rainwater reuse, and hazard resistant landscaping to citizens through government offices.	Public Services	Partner donations/ Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage	1	Provided information on practices and participation opportunities on Town website. Water Quality Calendar, distributed at Blessing of the Fleet Event. Town website resources: http://www.tompsc.com/index.aspx?nid=198 Education provider resources: http://www.clemson.edu/extension/carolinaclear/
NB	Review and develop framework for management plans that address flood mitigation and/ or water quality by watersheds.	Public Services Stormwater Division	General Funds, Special funds, Grant funds	Preserve environmental resources; promote long-term economic prosperity; improve water quality; improve hazard resistance of infrastructure; minimize future flood damages.	2	Old Village Study is being conducted to evaluate infrastructure and flood conditions in an area crossing (3) watersheds, Shem Creek Study is underway to identify Water Quality issues in the Shem creek Watershed.
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	The members of the Fire Department completed 3,369 hours of specialized training last year.
PA	Continue to provide coordination of local stormwater management regulations, and seek funding sources for NPDES permit required activities.	Planning Public Services	General Fund Stormwater Fund Special Revenue 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	Conducted (12) New Development Coordination meetings with Planning, Transportation, and Public Services Departments to review proposed developments for regulatory requirements, flood potentials and water quality issues. Participated in SC Stormwater Managers Associations and South Eastern Regional Stormwater Association training and meetings. Applied for funding from State Revolving Fund for Snee Farm project.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PA/ PI	Continue to develop and provide a comprehensive stormwater management outreach and participation program to enhance efforts at improving water quality through environmental educational activities.	Public Services	General Fund Special revenue Stormwater Program	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	Participate in Ashley Cooper Stormwater Education Consortium. 5- year plan and Annual report available on line at http://www.clemson.edu/extension/carolinaclear/activity-database/index.html
PA/ SP, GIS	Develop and implement Illicit Discharge Detection Program to eliminate pollutant discharges into the storm drainage system. Includes staff training and spill responses in conjunction with NPDES program.	Public Services Planning Fire Department Police Department	General Fund Special revenue (Stormwater Utility)	Minimize environmental damages caused by pollutant discharges; improve responses to hazardous spill events; improve and coordinate enforcement activities	1	The Fire Department's Hazardous Materials team continues to identify new methods and technology to stop leaks and control spills. Some of these methods have been purchased. Stormwater Staff completed (12) Illicit Discharge Inspections Trained (32) staff on OSHA 8-hour hazardous material response and conducts monthly spill team trainings.
GIS	Continue to improve and expand the use of GIS technology and capabilities for use with pre and post disaster vulnerability assessments, long range asset management and emergency planning.	All Departments	General Fund, Special Revenue, Grant Funding	Minimize infrastructure damage; maximize post event recovery; protect the lives of citizens and first responders through emergency planning operations.	2	The town has hired a GIS coordinator who is assisting all departments. Cityworks software has been implemented in public services and is GIS based and can be used for planning and managing assets. GIS assets for Stormwater operations are being updated though several drainage studies - new data will be incorporated into the main database once the work is complete.
ES	Develop/ update Standard Operating Procedures for the Municipal Emergency Operations Center	All Departments Emergency Manager	General Fund, Grant funds	Protecting the lives of first responders during natural and man-made events. Protecting lives of citizens from man-made and natural hazard events through incident management.	2	The town has secured funding and approval for an emergency manager who will write new procedures for the new EOC and lead town wide trainings.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
ES	Continue to obtain specialty equipment for HAZMAT and other emergency response operations	Fire Department, Police Department, Public Services Department	Grant funding / General Funds	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	The Fire Department is currently seeking grant funding for a marine unit with radiological detection capabilities. A dedicated hazardous materials response vehicle, Hazmat 502, was recently placed in to service and the unit has a large inventory of equipment to mitigate a hazmat incident.
ES	Continue Specialized rescue and fire suppression training activities - confined space, high angle, and bridge rescue.	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	The Fire Department completed a total of 36,048 hours of training in the year 2016. Over 3,000 of these were in specialty areas such as confined space and high angle.
ES	Obtain specialty equipment such as breakers, power unit, a search cam, diamond chain saw, cut off saw, pump and associated equipment to perform special rescues for building collapses, trench rescues and other specialty rescues associated with earthquake and terrorism events	Fire Department	General Fund/ Grant funding	Protecting lives of citizens from man-made and natural hazard events.	1	The Mount Pleasant Fire Department Technical Rescue Team trains annually on, high angle rescue, trench collapse and shoring, confined space, air monitoring, vehicle extrication, and building collapse rescue. Annually, funds are budgeted to purchase new equipment.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
ES	Continue Terrorist Response Training.	Police Department	General Fund/ Grant funds	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	Ongoing
ES	Continue to seek funding and opportunities to provide safe shelter for residents and Town staff.	General Government	Grant Funding / 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	Town opened a temporary shelter for residents during Hurricane Matthew in 2016. Shelter for ice and snow events (Cold Weather) are provided by a non-profit agency, as needed
ES	Continue to improve hazard warning tools for communication between local government and residents	Police/ General Government	Grant funding / 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	Increased use of Social Media platforms to disseminate hazard information. Conducted post-event video tour of the Town for residents in aftermath of Hurricane Matthew.
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event	General Government Emergency Manager	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	The town secured a new emergency manager who will lead the efforts to coordinate activities in the EOC. A New Town Hall is being completed that will include an upgraded MEOC for use by responding departments for event management.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
ES	Continue responding to hazard emergencies	All Departments	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	Ongoing, Town responded to Hurricane Matthew as the largest weather hazard Event. Other Rain event and minor incident responses were provided though out the year.
ES	Evaluate existing Town-owned facilities for hazard resistance and retrofit facilities or incorporate needs into new buildings if needed, where feasible.	Building Inspection Services	General Fund/ Grant 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	2	Ongoing - Building assessments have been completed for Town facilities. Possible upgrades are evaluated as part of the long-range capital improvement plan for the Town. Hazard resistance retrofits will be considered when feasible.
ES	Continue working to attain resources and to provide training for maritime firefighting through the Marine Assistance Pact.	Fire Department	Grant Funding / General Funds	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; promote long-term economic prosperity	1	Obtained a small inflatable boat to access victims in ponds, small waterways, and flooded areas. The rescue swimmer program obtained the United States Life Association Accreditation. In the approaching year will be adding FLIR technology to Marine 501 to aid in navigating and finding victims in the dark and during adverse weather conditions.
ES	Continue coordinating the Anti- Terrorism Task Force of specially trained police, fire and EMS personnel to respond to terrorist acts. To include USAR team development and training.	Fire Department / 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 relationships between public, private and non-profit sectors to enhance response for hazard events; promote long-term economic prosperity.	1	The Fire Department continues to develop the Active Shooter/ Assailant policies and procedures. The USAR team trains annually on trench rescue and building collapse methods.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
ES	Promote the Community Emergency Response Training (CERT) program and coordinate response efforts with local CERT members.	Emergency Preparedness	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; minimize future terrorist activity incidents	4	Ongoing in cooperation with Charleston County
SP	Continue to develop and support Asset Management program and associated Capital Improvements Project for road and drainage infrastructure Incorporate LID/ Green Infrastructure and resiliency where feasible.	Public Services/ Transportation	General Fund, Stormwater Utility, Grant Funding	Protect the lives of our citizens from natural hazards through timely infrastructure upgrade and life cycle replacement programs; reduce existing flood damage; minimize future flood damage; improve hazard resistance of infrastructure; promote long-term economic prosperity	1	Ongoing. The Town's Sneek Farm CIP project includes several Water Quality/ LID components
SP	Continue the drainage maintenance and canal cleaning program.	Public Services/ Stormwater	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	Completed inspections of major open channel systems, systems are cleaned during inspections and developed work orders for more major maintenance activities.
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone and water quality related issues in permitting decisions.	Planning Department	General Fund	Protect the lives of our citizens from natural and man-made hazards; reduce existing flood damage; minimize future flood damage; protect water quality; improve hazard resistance of infrastructure; promote long-term economic prosperity	1	Ongoing - The Town continues the encroachment permitting process to manage encroachments in ROW and drainage easements to maintain and improve emergency vehicle access, flood zone, and water quality issues. (209) Permits in ROWs and (57) permits for easements were processed in 2016.
SP	Continue to develop and update the elevation reference mark inspection program.	Planning Department	General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	1	Ongoing - benchmarks are annually inventoried and updated and/or recovered in conjunction with Charleston County.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
SP	Continue to provide design, permitting, and construction services for the drainage projects defined in Attachment VI-C and identify new projects as they arise	Public Services/ Stormwater	Grant Funding / 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	Updated
SP	Continue the road repair/construction program and implement Transportation Management Plan and Programs.	Planning Department, Transportation Department	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	Ongoing – Town road projects are part of the Capital Improvement Program (CIP); Transportation Program Development is a current CIP project.
SP	Support and sponsor placement of hurricane storm surge signs installed through Project Impact.	Public Services	Partner donations/ 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	4	Ongoing – Town has (2) signs in critical road crossing areas (Longpoint Road and Highway 41)
PI	Provide hazard related information to all residents of Charleston County through the AT&T telephone book, billboards and other outreach methods	Charleston County	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	Ongoing – flood prevention guidelines were published in a local community newspaper (distributed free-of-charge) and posted as a “news flash” on the Town’s website in 2016; hazard information and links were updated on the Town’s website; Planning Department programs were held for residents and the design community including Code for Lunch, Planning College, and Meet and Greet; three presentations were made to realtor, survey, and community associations.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PI	Sponsor/ Support/ Promote Hazard Awareness and Safety Awareness Weeks with other area jurisdictions and provide hazard-related literature/information to include man-made and natural hazards to citizens at Town offices	Public Services Department, Fire Department, Police Department, Planning Department, PIO Emergency Manager	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	4	Ongoing - Information posted on Town Social media and web site; also posted in Town Offices and promoted through Project Impact.
PI	Continue providing speakers to civic groups regarding hazard related activities. Update the Speaker's Bureau list as needed.	General Government	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	Ongoing - upon request. Three flood related presentations were made to various professional and civic groups.
ES	Obtain and operate mobile command units for disaster and other event use	Police Department	General Funds/ Grant Funding	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	Unit obtained by Police Department
ES	Design and construct emergency response training facility - Phases 2+	Fire Department	Grant Funding	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	2	Project to install concrete around the training tower is in the installation phase. The planning and design phase for a driving pad, shooting range, and classroom facility will begin in July of 2017.
ES/ SP	Continue ICS and NIMS training for all responders.	All Departments Emergency manager	Grant funding General funds	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	2	Over the past year, the town revisited its required NIMS trainings for all critical positions. The town also purchased a software to better collaborate on pre-planning a structure for all major events. This has helped better identify roles and responsibilities.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
ES/ PP PI	Supply all programs with necessary tools/ educational materials/ training outreach Participate in the Program for Public Information (PPI) to achieve maximum public outreach.	Police Department Fire Department Public Services	Grant funding General funds	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	3	Ongoing - Flood Add provided in Local paper- Moultrie News, Use of Social Media Platforms and Town Website to disseminate messages.
PA	Continue to update and modify hurricane response plan for Town area. Complete search and rescue grid maps and data	Fire Department / Public Services	Grant funding General funds	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	3	Work with the newly formed Emergency Manager position to develop search maps and modify the hurricane response plan.
PP	Develop damage assessment teams, training program, and damage assessment maps.	All departments	General Funds	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	2	Ongoing - damage assessment teams are reevaluated annually due to personnel changes; damage assessment maps are updated as needed to incorporate new neighborhoods, stormwater systems, etc.
PP	Update and revise Flood Insurance Rate Maps (FIRM) with SCDNR	Building Services Planning Department	Grant funding General funds	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	Ongoing. New preliminary FIRMs for Charleston County were release in October 2016. Community meetings (3) were held in Charleston County in March 2017 for the new maps. The tentative effective date for the new maps is December 2018.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PP	Continue Flap gate inspection, replacement, and Cleaning Program	Public Services	Stormwater Funds	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	Flap Gates are inspected prior to, during, and after every high tide predicted at 6.0 MSL and above. No new flap gates installed, no flap gates replaces.
PP	Continue sandbag program for residents	Public Services	General Funds	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	4	The Town acquired a new sand bag tool to improve the efficiency of bagging operations. Sand Bags were provided for Hurricane Matthew, as supplies allowed.
PP	Continue to incorporate infrastructure data into a GIS system to help analyze flood and other hazard related issues for future project planning.	Planning	Grant funding General funds	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.	2	Old Village Study includes the use of GIS layers in flood hazard assessments for this area of Town. Funding for future areas/ studies is identified in the Town's CIP/ CMP
PA	Work to standardize flood damage reporting system.	Public Services	Stormwater Funds General Funds	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.	2	Utilization and improvements of flood reporting through the Cityworks Database platform is ongoing. (212) flood reports (streets, yards, homes) were logged in 2016.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PI / PP/ NB	Continue storm drain marking program with citizen participation	Public Services	Grant funding General funds	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.	4	(27) Drains marked by (9) volunteers
PI, PA	Continue current outreach projects for CRS and develop new outreach projects based upon guidance in the updated CRS Coordinator's Manual.	Planning	General funds	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	Ongoing – Town is a participant with Charleston County in Project Impact. Project Impact is in the process of being modified so that it meets the criteria to be considered as a PPI under the CRS program; outreach activities & educational materials continue under Project Impact as the transition takes place; new outreach projects will be developed with Charleston County as part of the new PPI
PI	Continue development of WEB EOC - hazard information outreach to residents	All Departments	Grant funding General funds	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	2	Began implementation and training on Radium Incident Management System. Web EOC is ongoing operation as needed during large scale events. Hazard information is provided to residents via various social medial platforms.
PI, PP, SP, NB	Continue to work with Charleston County to support and, where possible, directly participate, in the EPA CARE grant and other available programs	Public Service	General Funds, Stormwater Funds, Grant Funds	Protecting lives of our citizens from environmental hazards; preserve environmental resources; improve environmental impact of infrastructure; establishing cooperative relationships between public, private and non-profit sectors to enhance response to environmental events; promote long-term economic prosperity.	1	Coordinated though Project Impact activities with Charleston County as available. No new grants or programs funded in 2015-2016.

Type	Activity	Lead Dept.	Funding Source	Goal(s) addressed	Priority	Status
PI	Develop and distribute a stormwater information to all residents to inform them of projects, provide them with flooding, and water quality and resiliency information.	Public Services	Stormwater Funds	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.	4	Stormwater website, social media platforms utilized. 3886 web page visits for hazard topics in 2015.
PI, PA	In conjunction with Charleston County, develop a Program for Public Information (PPI)	Planning Public Services Government Outreach PIO	General funds	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	Participated in PPI Committee meetings with Town Staff and Citizen Partners

7.13 – City of North Charleston

Resolution for Adoption

Resolution #2013 - 093

**A RESOLUTION
AUTHORIZING THE MAYOR OR HIS DESIGNEE TO ADOPT THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS, the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended Charleston Regional Hazard Mitigation Plan; and

WHEREAS, the recommended Charleston Regional Hazard Mitigation Plan has been widely circulated for review by residents, business organizations, and professional organizations of the unincorporated and incorporated areas of Charleston County and the state, federal, regional, and local government agencies and has been supported by those reviewers; and

WHEREAS, the City of North Charleston originally adopted the Charleston Regional Hazard Mitigation Plan in 1999 and readopted it in 2004 and 2008; and the City is required to adopt the amended version of this plan on a five-year cycle for the City to remain eligible for certain federal programs in which Charleston County participates.

NOW, THEREFORE BE IT RESOLVED that the Charleston Regional Hazard Mitigation Plan is hereby adopted as an official plan of the City of North Charleston.

AND BE IT FURTHER RESOLVED that the Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing and maintaining – in accordance with the Community Rating System – Flood Mitigation Assistance and Disaster Mitigation Act requirements and periodically reporting on the progress towards and revisions to the plan to the City of North Charleston, with a copy of such agreement attached hereto and incorporated by reference as if set forth fully herein.

THE WITHIN RESOLUTION SHALL BE EFFECTIVE IMMEDIATELY UPON ITS RATIFICATION BY CITY COUNCIL.

Resolved in City Council this 24th day of October, in the Year of Our Lord, 2013 and in the 238th year of Independence of the United States of America.


R. KEITH SUMMEY, MAYOR

APPROVED AS TO FORM:


LEGAL COUNSEL

ATTEST:


ELLEN CLARK, MUNICIPAL CLERK

Action Plan for the City of North Charleston, SC

Following are the proposed projects to be undertaken/continued in The City of North Charleston for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations (including the one foot freeboard, cumulative substantial improvement clause, and/or other provisions deemed necessary to enhance Community Rating System credits) to maintain participation in the National Flood Insurance Program and the Community Rating System.	North Charleston Building Inspection Services	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
PA	Continue to expand the Community Wildfire Protection Plan (CWPP) to include all fire departments/ districts in the County. Support the CWPP by increasing public awareness with the purpose of improving the protection of all structures	Charleston County Building Inspection Services/ Project Impact Partners Awendaw Fire District Countywide Fire Depts/ Districts	General Fund	Minimize Future Wildfire damage, protect the lives of our citizens from natural and man-made hazards, educating citizens regarding steps to take to reduce vulnerabilities, improve hazard resistance of infrastructure, reduce vulnerabilities of our infrastructure to natural and man-made hazards	1
PA	Continue to provide coordination of County storm water management through development and implementation of a comprehensive program. Enhance efforts at improving water quality through environmental educational activities.	North Charleston Planning Department North Charleston Public Works Department North Charleston Building Inspection Services	General Fund Enterprise Fund Grant Funding	Improve water quality; minimize future flood damage; reduce existing flood damage; 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 - This activity is on-going through the enforcement of development requirements.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA	Continue implementing the storm water master plan for Charleston County and the applicable regulations.	North Charleston Public Works North Charleston Building Inspection Services North Charleston Planning Department	Enterprise Fund Grant Funding	Minimize future flood damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	2 - This activity is on-going through the enforcement of development requirements.
PA	Continue enforcement of zoning regulations, including the low density zoning provisions of the Zoning and Land Development Regulations.	North Charleston Planning Department	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 This activity is on-going.
PA	Conduct or co-sponsor training workshops regarding the International Building-related, flood, and Fire Prevention Codes and Regulations, and on sustainable construction / landscaping practices, if there is interest in these workshops	North Charleston Building Inspection Services	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; preserve environmental resources	1
PA	Continue providing information to citizens regarding propane tank anchoring	North Charleston Building Inspections Department	General Fund Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damages; preserve environmental resources	2
PA	Continue enforcing regulations requiring new manufactured homes brought into Charleston County to be constructed to wind zone 2 requirements as required per State law.	North Charleston Building Inspections Department	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1
PA	Continue prohibiting new manufactured homes to be installed in "V" flood zones and requiring manufactured homes installed in "A" flood zones to be on permanent foundations.	North Charleston Building Inspection Services	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PP	Continue providing information to citizens regarding hazard safe interior rooms	North Charleston Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2
PP	Continue demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	North Charleston Building Inspection Services	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
PP	Seek funding for retrofitting, demolishing, or relocating repetitively flooded properties, if suitable candidates are identified.	North Charleston Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1
PP	Continue distributing a brochure on protecting boats from damages during hurricanes to interested citizens through expos, offices, marinas, and boat dealers.	North Charleston Building Inspection Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities; preserve environmental resources, improve water quality	3
PP	Continue distributing a brochure on protecting and preserving historic artifacts to interested citizens through expos, government offices, etc.	North Charleston Building Inspection Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; preserve historic building inventory; minimize future flood damage	2
PP	Seek funding for retrofitting critical facilities or infrastructure to enhanced hazard resistance in accordance with the County of Charleston Facilities Master Plan Update "Building Utilization and Needs Survey" (2003) or other applicable plans, if funding sources become available.	North Charleston Building Inspection Services	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1
PP	Continue energy conservation retrofitting of County-owned facilities as resources are available.	North Charleston Facilities Management Department	General Fund Grant Funding	Improve air quality	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
NB	Continue enforcement of the tree protection/landscaping ordinance	North Charleston Planning Department	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; improve water quality; improve air quality	2 This activity is on-going through the enforcement of zoning requirements and site development requirements.
NB	Continue maintaining permanent open space as parks and encouraging the Greenbelt Advisory Board to acquire green space in the special flood hazard area.	North Charleston Parks and Recreation Department	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2
NB	Continue encouraging the Greenbelt Advisory Board to acquire greenspace in the special flood hazard area, to the extent feasible.	North Charleston Building Inspection Services North Charleston Department of Parks and Recreation	Special Revenue Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages; improve water quality; improve air quality	2
NB	Continue participating in "Build-A-Dune" projects as funding permits, and assist other jurisdictions in participating in this initiative upon request	North Charleston Department of Public Works	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage; educating citizens regarding vulnerability to hazard and steps to reduce vulnerability; establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazard events	2
NB	Continue to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos.	North Charleston Building Inspection Services	Partner donations / Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage; improve water quality; improve air quality	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
NB	Continue working with scouts on the Project Impact scout patch program	North Charleston Building Inspection Services/ Project Impact partners	Grant Funding/ General Fund	Educating citizens regarding vulnerability to hazards and steps to take to reduce that vulnerability; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness for hazard events; reducing vulnerability to infrastructure and built-environment to hazard	2
NB	Develop and implement projects to reduce air and water pollution in Charleston County under the Project Impact partnership.	North Charleston Building Inspection Services Project Impact partners	Grant Funding	Preserve environmental resources; improve water quality; improve air quality	1
NB	Encourage cooperation between county departments, other government entities, interested businesses, and citizens regarding recommended sustainable practices to protect environmental quality	North Charleston Building Inspection Services/ Project Impact committee members/ other County Departments as applicable	Grant Funding General Fund	Preserve environmental resources; improve water quality; improve air quality; promote long term economic prosperity	2
ES	Continue hazardous material training	Hazardous Materials Coordinator	Enterprise Fund	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
ES	Continue Terrorist Response Training	Hazardous Materials Coordinator	General Fund	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Continue coordinating Emergency Operations Center activities related to a hazard event, including holding drills for EOC personnel.	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
ES	Continue responding to hazard emergencies	EMS, Fire Departments, Sheriff Department, Haz. Mat. Coordinator, Emergency Preparedness,	General Fund Enterprise 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
ES	Continue to require improved 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 earthquake damage; minimize future hurricane damage	1
ES	Continue working to attain resources and to provide training for maritime fire fighting through the Maritime Incident Response Team (MIRT).	Hazardous Materials Coordinator	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; promote long-term economic prosperity	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Maintain the National Weather Service "StormReady" and "TsunamiReady" Community designations.	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
ES	Continue coordinating the Anti- Terrorism Task Force (COBRA) of specially trained police, fire and EMS personnel to respond to terrorist acts.	Hazardous Materials Coordinator	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
ES	Continue sponsoring the Community Emergency Response Training (CERT) program.	Emergency Preparedness	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; minimize future terrorist activity incidents	2
ES	Maintain a web-based Emergency Operations Center capability.	Emergency Preparedness	General Fund	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; preserve environmental resources; promote long-term economic prosperity	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Update and improve North Charleston Emergency Preparedness Department	North Charleston Emergency Preparedness	General Fund	Prepare and protect the lives of citizens from natural hazards; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events	1
ES	POD Activation Drill	North Charleston Emergency Preparedness	General Fund	Prepare Emergency workers and citizens for Recovery after a disaster	1
ES	NDIP Activation Drill	North Charleston Emergency Preparedness And volunteer organizations	General Fund	Prepare Emergency workers and citizens for Recovery after a disaster	1
ES	MEOC Activation Drill	North Charleston Emergency Preparedness	General Fund	Educate and bring awareness to the roles, functions and responsibilities of those assigned to each section	1
ES	Participate in full scale County Emergency Drill	North Charleston Emergency Preparedness	General Fund	Educate and bring awareness to the roles, functions and responsibilities for county wide Emergency	1
SP	Continue the drainage maintenance and canal cleaning program	North Charleston Public Works Department	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
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	North Charleston Public Works Department	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
SP	Continue the elevation reference mark inspection program	North Charleston Public Works Department	General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	1
SP	Continue to provide design, permitting, and construction services for the drainage improvement projects defined in Attachment VI-C	North Charleston Public Works Department Deputy Administrator (Transportation Sales Tax)	Grant Funding 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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
SP	Continue the road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	North Charleston Public Works Department Deputy Administrator (Transportation Sales Tax)	General Fund Grant Funding Enterprise 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
SP	Design/elevate roadways being constructed or reworked through the ½ cent sales tax program to minimize flooding potential to the extent feasible. Identify those roads susceptible to flooding.	Deputy Administrator (Transportation Sales Tax)	Special Revenue 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
SP	Continue to distribute a generator safety brochure to interested generator retail outlets, utility companies and the general public	North Charleston Building Inspection Services	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
SP	Continue to provide information about the USGS stream gauge program to the public	North Charleston Building Inspection Services	Partner donations / Grant funding	Protecting the lives of citizens from natural hazards; minimize future flood damage; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and response for hazard events	2
PI	Provide hazard related information to all residents of Charleston County through the AT&T telephone book	North Charleston Building Inspection Services	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; improve water quality	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PI	Continue providing hazard-related literature/information to citizens at City of North Charleston offices	North Charleston Planning Department	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 This activity is on-going, as literature is available within the One-Stop Lobby area and provided by the Building Inspection Services division.
PI	Mail an outreach project to floodplain residents to those property owners whose property is located in the special flood hazard area.	North Charleston Building Inspection Services	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 hurricane damage; improve water quality	1
PI	Continue providing speakers to civic groups regarding hazard related activities and environmental quality topics. Update the Speaker's Bureau list as needed.	North Charleston Building Inspection Services	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; improve water quality; improve air quality	1
PI	Continue programs aimed towards providing resources to local schools to enhance their ability to educate students regarding hazard events and hazard event preparation. Provide educational programs at schools on hazards or environmental quality as opportunities arise.	North Charleston Building Inspection Services/ Project Impact partners	Grant 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; improve water quality; improve air quality	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PI	Continue participating in hazard-related/product or environmental protection-related expos or public events	North Charleston Building Inspection Services	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; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events; improve water quality; improve air quality	2
PI	Created a Flood Plain Management page available through the City of North Charleston website.	North Charleston Building Inspection Services	General Fund	Educating citizens regarding the purpose of floodplain management, flood protection/insurance/CRS, flood and storm preparedness	2
PI	Maintain the flood zone frequently asked questions page on the City of North Charleston web site to provide information on protecting against flood hazards to the public.	North Charleston Building Inspection Services	General Fund	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2
PI	Maintain the Project Impact internet page on the Charleston County web site to relay information on Project Impact events and methods to reduce hazard-related losses to the public.	North Charleston Building Inspection Services	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2
PI	Maintain a web page with information on environmental resource protection / air and water quality pollution-reduction strategies, as well as flood hazard, storm preparedness	North Charleston Building Inspection Services	Grant Funding	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1
PI	Continue educational efforts and initiatives promoting energy conservation.	North Charleston Building Inspection Services	General Fund Grant Funding	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; improve air quality; preserve environmental resources	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	North Charleston Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1
PI	Maintain the Facebook pages for Project Impact	North Charleston Building Inspection Services/ Project Impact committee members		Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1
GIS	Continue inter-departmental efforts to share geographic digital information and property specific construction-related information	North Charleston GIS Department North Charleston Building Inspection Services North Charleston Planning Department Emergency Services	General Fund Grant Funding	Protecting the lives of citizens from natural hazards; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events	2 This activity is on-going.

Status Report for the City of North Charleston, SC

Following are the proposed projects to be undertaken/continued in The City of North Charleston for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations (including the one foot freeboard, cumulative substantial improvement clause, and/or other provisions deemed necessary to enhance Community Rating System credits) to maintain participation in the National Flood Insurance Program and the Community Rating System.	North Charleston Building Inspection Services	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	On Going
PA	Continue to expand the Community Wildfire Protection Plan (CWPP) to include all fire departments/ districts in the County. Support the CWPP by increasing public awareness with the purpose of improving the protection of all structures	Charleston County Building Inspection Services/ Project Impact Partners Countywide Fire Departments/ Districts	General Fund	Minimize Future Wildfire damage, protect the lives of our citizens from natural and man-made hazards, educating citizens regarding steps to take to reduce vulnerabilities, improve hazard resistance of infrastructure, reduce vulnerabilities of our infrastructure to natural and man-made hazards	1	On Going
PA	Continue to provide coordination of County storm water management through development and implementation of a comprehensive program. Enhance efforts at improving water quality through environmental educational activities.	North Charleston Planning Department North Charleston Public Works Department North Charleston Building Inspection Services	General Fund Enterprise Fund Grant Funding	Improve water quality; minimize future flood damage; reduce existing flood damage; 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	- This activity is on-going through the enforcement of development requirements

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA	Continue implementing the storm water master plan for Charleston County and the applicable regulations.	North Charleston Public Works North Charleston Building Inspection Services North Charleston Planning Department	Enterprise Fund Grant Funding	Minimize future flood damage; minimize future hurricane damage; protect the lives of our citizens from natural and man-made hazards	2	- This activity is on-going through the enforcement of development requirements
PA	Continue enforcement of zoning regulations, including the low density zoning provisions of the Zoning and Land Development Regulations.	North Charleston Planning Department	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	On Going
PA	Conduct or co-sponsor training workshops regarding the International Building-related, flood, and Fire Prevention Codes and Regulations, and on sustainable construction / landscaping practices, if there is interest in these workshops	North Charleston Building Inspection Services	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; preserve environmental resources	1	Seminar / Training on "Existing Building Codes"
PA	Continue providing information to citizens regarding propane tank anchoring	North Charleston Building Inspections Department	General Fund Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damages; preserve environmental resources	2	Information provided to property owners when new installations are performed
PA	Continue enforcing regulations requiring new manufactured homes brought into Charleston County to be constructed to wind zone 2 requirements as required per State law.	North Charleston Building Inspections Department	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1	On Going
PA	Continue prohibiting new manufactured homes to be installed in "V" flood zones and requiring manufactured homes installed in "A" flood zones to be on permanent foundations.	North Charleston Building Inspection Services	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	On Going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PP	Continue providing information to citizens regarding hazard safe interior rooms	North Charleston Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2	On Going
PP	Continue demolishing structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	North Charleston Building Inspection Services	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	On Going
PP	Seek funding for retrofitting, demolishing, or relocating repetitively flooded properties, if suitable candidates are identified.	North Charleston Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1	Grant application submitted
PP	Continue distributing a brochure on protecting boats from damages during hurricanes to interested citizens through expos, offices, marinas, and boat dealers.	North Charleston Building Inspection Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; minimize future hurricane damage; encourage recreational activities; preserve environmental resources, improve water quality	3	On Going
PP	Continue distributing a brochure on protecting and preserving historic artifacts to interested citizens through expos, government offices, etc.	North Charleston Building Inspection Services	Grant Funding	Educating citizens regarding steps to take to reduce hazard vulnerability; preserve historic building inventory; minimize future flood damage	2	On Going
PP	Seek funding for retrofitting critical facilities or infrastructure to enhanced hazard resistance in accordance with the County of Charleston Facilities Master Plan Update "Building Utilization and Needs Survey" (2003) or other applicable plans, if funding sources become available.	North Charleston Building Inspection Services	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1	Funding not available
PP	Continue energy conservation retrofitting of County-owned facilities as resources are available.	North Charleston Facilities Management Department	General Fund Grant Funding	Improve air quality	2	On Going
NB	Continue enforcement of the tree protection/landscaping ordinance	North Charleston Planning Department	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; improve water quality; improve air quality	2	This activity is on-going through the enforcement of zoning requirements and site development requirements

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
NB	Continue maintaining permanent open space as parks and encouraging the Greenbelt Advisory Board to acquire green space in the special flood hazard area.	North Charleston Parks and Recreation Department	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2	On Going
NB	Continue encouraging the Greenbelt Advisory Board to acquire greenspace in the special flood hazard area, to the extent feasible.	North Charleston Building Inspection Services North Charleston Department of Parks and Recreation	Special Revenue Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages; improve water quality; improve air quality	2	On Going
NB	Continue participating in "Build-A-Dune" projects as funding permits, and assist other jurisdictions in participating in this initiative upon request	North Charleston Department of Public Works	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage; educating citizens regarding vulnerability to hazard and steps to reduce vulnerability; establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazard events	2	On Going
NB	Continue to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos.	North Charleston Building Inspection Services	Partner donations / Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage; improve water quality; improve air quality	2	On Going
NB	Continue working with scouts on the Project Impact scout patch program	North Charleston Building Inspection Services/ Project Impact partners	Grant Funding General Fund	Educating citizens regarding vulnerability to hazards and steps to take to reduce that vulnerability; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness for hazard events; reducing vulnerability to infrastructure and built-environment to hazard	2	In transition to Program for Public Information On Going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
NB	Develop and implement projects to reduce air and water pollution in Charleston County under the Project Impact partnership.	North Charleston Building Inspection Services Project Impact partners	Grant Funding	Preserve environmental resources; improve water quality; improve air quality	1	In transition to Program for Public Information On Going
NB	Encourage cooperation between county departments, other government entities, interested businesses, and citizens regarding recommended sustainable practices to protect environmental quality	North Charleston Building Inspection Services/ Project Impact committee members/ other County Departments as applicable	Grant Funding General Fund	Preserve environmental resources; improve water quality; improve air quality; promote long term economic prosperity	2	Working with County
ES	Continue hazardous material training	Hazardous Materials Coordinator	Enterprise Fund	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	On Going, however the NCFD participated in several local and regional LEPC meetings and with many industrial partners participated in the Liquid Spillage Control Committee meetings, training, and table-tops.
ES	Continue Terrorist Response Training	Hazardous Materials Coordinator	General Fund	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	On Going, but the NCFD is an active participant with the Regional WMD Team and Dive Teams. Routinely, perform river sweeps, etc. as a preventative measure against terrorism.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
ES	Continue coordinating Emergency Operations Center activities related to a hazard event, including holding drills for EOC personnel.	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	This "activity" is always ongoing: The CONC participated in a State-Wide Drill on March 15 th and 16 th . The overall objective of MEOC and good Comm. All areas of communication was tested with life safety, incident stabilization and property protection was promoted.
ES	Continue responding to hazard emergencies	EMS, Fire Departments, Sheriff Department, Haz. Mat. Coordinator, Emergency Preparedness,	General Fund Enterprise 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	This "activity" is always ongoing: The CONC continues to respond to hazards, while establishing tabletops, town halls and neighborhood president meetings. These functions along with Monthly newsletters are attempt to bring awareness and preparations efforts of likely hazards and what to do when they strike
ES	Continue to require improved 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 earthquake damage; minimize future hurricane damage	1	On Going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
ES	Continue working to attain resources and to provide training for maritime fire fighting through the Maritime Incident Response Team (MIRT).	Hazardous Materials Coordinator	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; promote long-term economic prosperity	1	On Going, the NCFD Marine Division actively participates in MIRT training, exercises, and when preparing for special public events.
ES	Maintain the National Weather Service "StormReady" and "TsunamiReady" Community designations.	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	This "activity" is ongoing; The CONC updated its website with a focus on "StormReady" in attempt to educate our citizens and minimize damage. CONC's key city staff members participate regularly with the NWS training in attempt to stay current with programs like Flood Program Improvement.
ES	Continue coordinating the Anti- Terrorism Task Force (COBRA) of specially trained police, fire and EMS personnel to respond to terrorist acts.	Hazardous Materials Coordinator	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	On Going, the NCFD participates on the Regional WMD Team which superseded COBRA.
ES	Continue sponsoring the Community Emergency Response Training (CERT) program.	Emergency Preparedness	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; minimize future terrorist activity incidents	2	This "activity" is ongoing; The CONC supports several CERT members within the CONC with their continued relationship with emergency preparedness.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
ES	Maintain a web-based Emergency Operations Center capability.	Emergency Preparedness	General Fund	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; preserve environmental resources; promote long-term economic prosperity	1	This "activity" is always ongoing: The CONC participated in a State-Wide Drill on March 15 th and 16 th . The overall objective of MEOC and good Comm. All areas of communication was tested with a focus on web-based capabilities
SP	Continue the drainage maintenance and canal cleaning program	North Charleston Public Works Department	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	On Going
SP	Continue utility right of way permitting, considering emergency vehicle access and flood zone related issues in permitting decisions	North Charleston Public Works Department	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	On Going
SP	Continue the elevation reference mark inspection program	North Charleston Public Works Department	General Fund	Minimize future flood damage; Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazards	1	On Going
SP	Continue to provide design, permitting, and construction services for the drainage improvement projects defined in Attachment VI-C	North Charleston Public Works Department Deputy Administrator (Transportation Sales Tax)	Grant Funding 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	On Going
SP	Continue the road repair/construction program, considering needs during evacuation and soil liquefaction potential in prioritization decisions	North Charleston Public Works Department Deputy Administrator (Transportation Sales Tax)	General Fund Grant Funding Enterprise 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	On Going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
SP	Design/elevate roadways being constructed or reworked through the ½ cent sales tax program to minimize flooding potential to the extent feasible. Identify those roads susceptible to flooding.	Deputy Administrator (Transportation Sales Tax)	Special Revenue 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	On Going
SP	Continue to distribute a generator safety brochure to interested generator retail outlets, utility companies and the general public	North Charleston Building Inspection Services	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	On Going
SP	Continue to provide information about the USGS stream gauge program to the public	North Charleston Building Inspection Services	Partner donations / Grant funding	Protecting the lives of citizens from natural hazards; minimize future flood damage; establishing cooperative relationships between the public, private and non-profit sectors to enhance preparedness and response for hazard events	2	On Going
PI	Provide hazard related information to all residents of Charleston County through the AT&T telephone book	North Charleston Building Inspection Services	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; improve water quality	1	On Going
PI	Continue providing hazard-related literature/information to citizens at City of North Charleston offices	North Charleston Planning Department	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	This activity is on-going, as literature is available within the One-Stop Lobby area and provided by the Building Inspection Services division. On Going
PI	Mail an outreach project to floodplain residents to those property owners whose property is located in the special flood hazard area.	North Charleston Building Inspection Services	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 hurricane damage; improve water quality	1	On Going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PI	Continue providing speakers to civic groups regarding hazard related activities and environmental quality topics. Update the Speaker's Bureau list as needed.	North Charleston Building Inspection Services	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; improve water quality; improve air quality	1	On Going
PI	Continue programs aimed towards providing resources to local schools to enhance their ability to educate students regarding hazard events and hazard event preparation. Provide educational programs at schools on hazards or environmental quality as opportunities arise.	North Charleston Building Inspection Services/ Project Impact partners	Grant 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; improve water quality; improve air quality	1	In transition to Program for Public Information On Going
PI	Continue participating in hazard-related/ product or environmental protection-related expos or public events	North Charleston Building Inspection Services	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; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events; improve water quality; improve air quality	2	On Going
PI	Created a Flood Plain Management page available through the City of North Charleston website.	North Charleston Building Inspection Services	General Fund	Educating citizens regarding the purpose of floodplain management, flood protection/insurance/CRS, flood and storm preparedness	2	Development Stage
PI	Maintain the flood zone frequently asked questions page on the City of North Charleston web site to provide information on protecting against flood hazards to the public.	North Charleston Building Inspection Services	General Fund	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2	Development Stage
PI	Maintain the Project Impact internet page on the Charleston County web site to relay information on Project Impact events and methods to reduce hazard-related losses to the public.	North Charleston Building Inspection Services	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	2	In transition to Program for Public Information On Going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PI	Maintain a web page with information on environmental resource protection /air and water quality pollution-reduction strategies, as well as flood hazard, storm preparedness	North Charleston Building Inspection Services	Grant Funding	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1	Development Stage
PI	Continue educational efforts and initiatives promoting energy conservation.	North Charleston Building Inspection Services	General Fund Grant Funding	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; improve air quality; preserve environmental resources	2	On Going
PI	Continue participating in the Project Impact Outreach Project Strategy for the Community Rating System.	North Charleston Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability;	1	In transition to Program for Public Information On Going
PI	Maintain the Facebook pages for Project Impact	North Charleston Building Inspection Services/ Project Impact committee members		Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability; Preserve environmental resources; improve water quality; improve air quality	1	In transition to Program for Public Information On Going
GIS	Continue inter-departmental efforts to share geographic digital information and property specific construction-related information	North Charleston GIS Department North Charleston Building Inspection Services North Charleston Planning Department Emergency Services	General Fund Grant Funding	Protecting the lives of citizens from natural hazards; establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness and recovery for hazard events	2	This "activity" is ongoing: The CONC GIS Dept. is probably one of the most engaged participants in expanding its role with emergency preparedness. GIS works closely with and in support of all members of Damage Assessment with training and installing new software to the DA team's tablets.

7.14 - Town of Ravenel

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
THE RAVENEL TOWN COUNCIL**

Resolution No. 2013-003

- WHEREAS** the County of Charleston has experienced the effects of natural and man-made hazard events; and
- WHEREAS** the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and
- WHEREAS** the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and
- WHEREAS** the Town of Ravenel originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Ravenel to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Ravenel, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Ravenel Town Council.

Effective this 29th Day of October, 2013

Action Plan for the Town of Ravenel, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full action plan. There are no proposed projects additional to the action plan of Charleston County.

Status Report for the Town of Ravenel, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full status report. There are no proposed projects additional to the status report of Charleston County.

7.15 - Town of Rockville

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
Town of Rockville Mayor and Council**

Resolution No. 111813

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and


WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Rockville originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Rockville, Charleston County, South Carolina to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Rockville, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town of Rockville and its Mayor and Council

Effective this 18 Day of November, 2013


Mayor, Town of Rockville

Action Plan for the Town of Rockville, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full action plan. There are no proposed projects additional to the action plan of Charleston County.

Status Report for the Town of Rockville, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full status report. There are no proposed projects additional to the status report of Charleston County.

7.16 – Town of Seabrook Island

Resolution for Adoption

TOWN OF SEABROOK ISLAND

RESOLUTION 2013-03, A RESOLUTION FOR THE ADOPTION OF THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN

ADOPTED October 22, 2013

WHEREAS, the Town of Seabrook Island has experienced the effects of natural and man-made hazard events; and

WHEREAS, The Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS, the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS, the Town of Seabrook Island originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004 and is required to adopt the amended version of this plan on a five-year cycle for the Town to remain eligible for certain Federal programs in which the Town of Seabrook Island participates; and

NOW, THEREFORE, be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Seabrook Island.
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town Council for the Town of Seabrook Island.

Done this 22nd day of October, 2013.

TOWN OF SEABROOK ISLAND



Mayor

Action Plan for the Town of Seabrook Island, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full action plan. There are no proposed projects additional to the action plan of Charleston County.

Status Report for the Town of Seabrook Island, SC

This jurisdiction is fully serviced by Charleston County. Please refer to Section 7.1 for the full status report. There are no proposed projects additional to the status report of Charleston County.

7.17 - Town of Sullivan's Island

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
The Town Council of the Town of Sullivan's Island**

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Sullivan's Island originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Sullivan's Island to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Sullivan's Island, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town Council of The Town of Sullivan's Island.

Effective this 19th day of November, 2013.



Michael Perkis, Mayor

Attest:



Ellen Miller, Town Clerk

Action Plan for the Town of Sullivan’s Island, SC

Following are the proposed projects to be undertaken/continued in the Town Of Sullivan’s Island for hazard mitigation during 2017-2018

(Abbreviations for “Type” are as follows: “PA” is Preventive Activities, “PP” is Property Protection Activities, “NB” is Natural and Beneficial Functions/Resource Preservation Activities, “ES” is Emergency Services Activities, “SP” is Structural Projects Activities, and “PI” is Public Information Activities, “GIS” is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations.	Building Inspection Services & Zoning Services	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
PA	Continue support for coordination of departments to implement the storm water management regulations as stated in the NPDES permit requirements.	Building Inspection Services & Zoning Services	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
PA	Continue enforcement of zoning regulations; seek assistance with developing regulations to continue the single family character of the island.	Zoning	General Fund	Minimize future flood damage; preserve environmental resources; 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
PA	Continue providing information to citizens regarding propane tank anchoring	Building Inspection Services	General Fund	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage	2
PA	Continue prohibiting manufactured homes to be installed in flood zones.	Building Inspection Services & Zoning Services	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
PP	Promote the use of voluntary standards for single-family residences to exceed minimal Building Inspection Services code requirements for wind and seismic design.	Building Inspection Services & Zoning	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PP	Promote standards for existing homes to be retrofitted to that exceed minimal codes.	Building Inspection Services	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
PP	Seek funding for retrofitting critical facilities on the island to enhanced hazard resistance if funding sources become available.	Administrative	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic Building Inspection Services inventory; promote long-term economic prosperity	1
NB	Continue to enforce the Trimming & Pruning ordinance in the RC-1 and RC-2 areas.	Zoning & Tree Commission	Tree Fund & General Fund	Preserve the natural protective barrier around the island that protects the island from hurricane flood surge, wind and erosion control.	1
NB	Continue enforcement of the tree protection/landscaping ordinance	Zoning & Tree Commission	Tree Fund & General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	2
NB	Continue maintaining permanent open space.	Building Inspection Services, Zoning & Recreation Committee	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2
SP	Replace existing Town water treatment plant	Administrative & Water and Sewer Department	General Fund & Grant Funding	Replace aging Town critical facility; minimize future flood damages and potential of failure	1
NB	Continue participating in the Build-A-Dune projects as funding permits.	Building Inspection Services & Maintenance	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage; educating citizens regarding vulnerability to hazard and steps to reduce vulnerability; establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazard events	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
NB	Continue to morally support Charleston County initiative to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos.	Building Inspection Services	none	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage	2
ES	Continue hazardous material training	Fire Department	General Fund	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
ES	Continue Terrorist Response Training	Fire Department Police Department	General Fund	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
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event	Administrative Fire Department Police Department	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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Continue responding to hazard emergencies	Fire Department, Police Department	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 Inspection Services inventory; promote long-term economic prosperity	1
ES	Continue to require stringent construction practices for new critical facilities that are sensitive to flood zone and seismic considerations.	Administrative & Building	General Fund Grant 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
ES	Evaluate existing Town-owned facilities for hazard resistance and retrofit facilities if needed where feasible.	Building Inspection Services & Fire Department	General Fund/ Grant 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
SP	Continue the drainage maintenance program	Maintenance & Charleston County	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
SP	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
SP	Support Charleston County in maintaining hurricane storm surge signs installed through Project Impact.	Building Inspection Services	Partner donation s/ 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

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PI	Continue providing hazard-related literature/information to citizens visiting Sullivan's Island Town Hall.	Planning	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
PI	Participate in "Hazard Awareness Week".	Building/Zoning	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
PI	Recognize "International Building Inspection Services Safety Week" to promote safety in the built environment	Building Inspection Services	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
PI	Continue providing speakers to civic groups regarding hazard related activities.	Building, Zoning, Fire and Police	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
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services / Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1
PI	Create Sullivan's Island Program for Public Information.	Zoning/ Building Inspection Services / Planning Commission	General Fund	Work with the Town Planning Commission, Town Staff and select members of the community with the goal to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability.	1
PI	Continue working with State Department of Natural Resources and ISO to maximize Community Rating System (CRS) rating.	Zoning / Building Inspection Services	General Fund	Conduct periodic reviews of Permitting procedure and inspections, GIS Data management, public notification efforts, etc.	3

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
P1	Create Floodplain Management and Hazard Mitigation Web Page with regular updates.	Zoning / Building Inspection Services	General Fund	Build on new web page to increase public outreach. Display all applicable GIS maps, emergency service contact information	1
P1	Continue to develop Town GIS.	Zoning / Building Inspection Services	General Fund	Continue to build on Sullivan's Island GIS data. Work with the County to continue to update the Town's Geographic Information System (GIS) to ensure that Town-specific information is incorporated into the system as necessary, conducting more detailed hazard risk assessments and for tracking permitting/land use patterns.	3

Additional Recommended Projects may be added to this project list as the committees consider other projects and recommend these projects for implementation.

Status Report for the Town of Sullivan’s Island, SC

Following are the proposed projects to be undertaken/continued in the Town of Sullivan’s Island for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for “Type” are as follows: “PA” is Preventive Activities, “PP” is Property Protection Activities, “NB” is Natural and Beneficial Functions/Resource Preservation Activities, “ES” is Emergency Services Activities, “SP” is Structural Projects Activities, and “PI” is Public Information Activities, “GIS” is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management regulations.	Building Inspection Services & Zoning Services	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	Ongoing Training 2015 Building Code adopted. In June 2016.
PA	Continue support for coordination of departments to implement the stormwater management regulations as stated in the NPDES permit requirements.	Building Inspection Services & Zoning Services	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	Ongoing Adopted stormwater management zoning ordinance for all single-family residential properties;
PA	Continue enforcement of zoning regulations; seek assistance with developing regulations to continue the single-family character of the island.	Zoning	General Fund	Minimize future flood damage; preserve environmental resources; 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	-Ongoing quarterly meeting with Charleston County and SCDOT
PA	Continue providing information to citizens regarding propane tank anchoring	Building Inspection Services	General Fund	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage	2	-Ongoing -New Flood / CRS website
PA	Continue prohibiting manufactured homes to be installed in flood zones.	Building Inspection Services Inspection & Zoning Services	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	-Ongoing

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PP	Promote the use of voluntary standards for single-family residences to exceed minimal Building Inspection Services code requirements for wind and seismic design.	Building Inspection Services & Zoning	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	2	-Ongoing
PP	Promote standards for existing homes to be retrofitted to that exceed minimal codes.	Building Inspection Services	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	-Ongoing -Adopted one (1) foot freeboard requirement for all new construction and substantial improvements
PP	Seek funding for retrofitting critical facilities on the island to enhanced hazard resistance if funding sources become available.	Administrative	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic Building Inspection Services inventory; promote long-term economic prosperity	1	-Ongoing -FEMA grant for improving wastewater treatment plant; -FEMA grant for emergency backup generator
NB	Continue to enforce the Trimming & Pruning ordinance in the RC-1 and RC-2 areas.	Zoning & Tree Commission	Tree Fund & General Fund	Preserve the natural protective barrier around the island that protects the island from hurricane flood surge, wind and erosion control.	1	-Ongoing
NB	Continue enforcement of the tree protection/landscaping ordinance	Zoning & Tree Commission	Tree Fund & General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	2	-Ongoing
NB	Continue maintaining permanent open space.	Building Inspection Services, Zoning & Recreation Committee	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages	2	-Ongoing
SP	Replace existing Town water treatment plant	Administrative & Water and Sewer Department	General Fund & Grant Funding	Replace aging Town critical facility; minimize future flood damages and potential of failure	1	Town staff is in the process of FEMA review of grant to fund replacement of the treatment facility. Redesign is being done.

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
NB	Continue participating in the Build-A-Dune projects as funding permits.	Building Inspection Services & Maintenance	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve hazard resistance of infrastructure; minimize future hurricane damage; educating citizens regarding vulnerability to hazard and steps to reduce vulnerability; establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness for hazard events	2	-Ongoing
NB	Continue to participate in Charleston County's initiative to distribute literature on riparian buffer zones and hazard resistant landscaping to citizens through government offices and at expos.	Building Inspection Services	none	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage	2	-Ongoing
ES	Continue hazardous material training	Fire Department	General Fund	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	-Ongoing

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
ES	Continue Terrorist Response Training	Fire Department Police Department	General Fund	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	-Ongoing
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event	Administrative Fire Department Police Department	General Fund & Fire Department	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	Constructing new Town Hall, which will serve as a support facility to the current Emergency Operations Center (Town of Sullivan's Island Fire Station). The both facilities will be equipped with a generator for emergency power. 99% complete at this time.
ES	Continue responding to hazard emergencies	Fire Department, Police Department	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 Inspection Services inventory; promote long-term economic prosperity	1	1-Ongoing

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
ES	Continue to require stringent construction practices for new critical facilities that are sensitive to flood zone and seismic considerations.	Administrative & Building	General Fund Grant 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	-New Town Hall EOC facility -Exceeding current Building Codes via participation in the CRS program -TOSI PPI
ES	Evaluate existing Town-owned facilities for hazard resistance and retrofit facilities if needed where feasible.	Building Inspection Services & Fire Department	General Fund/ Grant 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	-Ongoing -Quarterly meetings with Charleston County
SP	Continue the drainage maintenance program	Maintenance & Charleston County	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	1-Ongoing -Engaged SCDOT to manage ditch cleaning on a more regular schedule. Continue quarterly meeting with county.
SP	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	-Ongoing all emergency evacuation routes resurfaced this year.
SP	Support Charleston County in maintaining hurricane storm surge signs installed through Project Impact.	Building Inspection Services	Partner donations/ 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	-Ongoing

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PI	Continue providing hazard-related literature/information to citizens visiting Sullivan's Island Town Hall.	Planning	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	-Ongoing
PI	Participate in "Hazard Awareness Week".	Building/Zoning	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	-Ongoing
PI	Recognize "International Building Inspection Services Safety Week" to promote safety in the built environment	Building Inspection Services	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	-Ongoing
PI	Continue providing speakers to civic groups regarding hazard related activities.	Building, Zoning, Fire and Police	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	-Ongoing
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services / Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	-Ongoing

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PI	Create Sullivan's Island Program for Public Information.	Zoning/ Building Inspection Services / Planning Commission	General Fund	Work with the Town Planning Commission, Town Staff and select members of the community with the goal to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability.	1	-Created the TOSI PPI in 2015 -Drafting the PPI narrative document. Completed and sent for review. Have tabled for now until review completed.
PI	Continue working with State Department of Natural Resources and ISO to maximize Community Rating System (CRS) rating.	Zoning / Building Inspection Services	General Fund	Conduct periodic reviews of Permitting procedure and inspections, GIS Data management, public notification efforts, etc.	3	-Ongoing -Class 5 CRS rating received and in effect in May 2017
P1	Create Floodplain Management and Hazard Mitigation Web Page with regular updates.	Zoning / Building Inspection Services	General Fund	Build on new web page to increase public outreach. Display all applicable GIS maps, emergency service contact information	1	-Ongoing
P1	Continue to develop Town GIS.	Zoning / Building Inspection Services	General Fund	Continue to build on Sullivan's Island GIS data. Work with the County to continue to update the Town's Geographic Information System (GIS) to ensure that Town-specific information is incorporated into the system as necessary, conducting more detailed hazard risk assessments and for tracking permitting/land use patterns.	3	-Ongoing

Additional Recommended Projects may be added to this project list as the committees consider other projects and recommend these projects for implementation.

7.18 – Charleston County Parks & Recreation Commission

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
The Charleston County Park and Recreation Commission**

Resolution No. _____

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

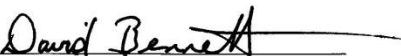
WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the **The Charleston County Park and Recreation Commission** originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the **The Charleston County Park and Recreation Commission** to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the **The Charleston County Park and Recreation Commission**, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the **The Charleston County Park and Recreation Commission**

Effective this 18th Day of Oct., 2013



Action Plan for the Charleston County Park and Recreation Commission

The following are the projects proposed to be undertaken/ continued at Charleston County Park and Recreation Commission (CCPRC) facilities for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1 is highest, 4 is lowest)
PP	Distribute brochures to marina guests on protecting boats from damages during hurricanes.	CCPRC Marina Staff	General Fund; FEMA	Educate boat owners, minimize property damage.	1
NB	Continue to purchase and maintain permanent open space as parks.	CCPRC	Grants; Bond funding	Preserve environmental and recreational resources, minimize flood damage, and improve water quality.	1
NB	Continue preservation of beach access and shoreline ecology.	CCPRC	Grants; General funds	Protect coastline and property from natural hazards, provides quality of life for citizens and protects wildlife habitat	1
PI	Continue involvement in local hazard mitigation initiatives by providing information to the community.	CCPRC	General fund	Educating citizens about their vulnerability to natural hazards, and reasons for protecting the environment.	1
PP	Evaluate CCPRC property and structures to man-made and natural hazards.	CCPRC	General fund	Find, repair, and retrofit structures to reduce damages from natural hazards and improve security from acts of terrorism.	2
NB	Re-establish beach dunes and vegetation	CCPRC	General fund	Protection of marsh land, property, and wildlife habitat.	1
NB	Re-establish riparian buffer zones at all applicable water resources owned by CCPRC	CCPRC	General fund	Protection of environment, water quality, and wildlife habitat	1
PI	Continue providing programs and resources to schools to enhance education of students to hazards and environmental issues.	CCPRC	General fund	Protecting the lives of citizens from natural hazards, increasing civil involvement in critical issues.	2
PI	Continue participating in the Project Impact Outreach Project Strategy for the Community Rating System. Participate in the Program for Public Information (PPI) see Section VI – D for details	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1 is highest, 4 is lowest)
PP	Accelerate agency's Hazard Tree Identification Program. Identify and remove problem trees.	CCPRC	General fund	Protect property from damage due to vulnerable trees during storms and hurricanes.	2
PP	Continue to update and inform employees of hazardous weather conditions as outlined in the Hurricane Plan.	CCPRC	General fund	Protection of property and safety of guest during hazardous weather events or other crisis.	1
NB	Re-forestation of selected zones within developed CCPRC parks, Re-establish natural vegetation.	CCPRC	General fund	Decreased use of pesticides, improved water retention, drainage, improved drought and disease resistance, better hazard survival, and improved wildlife habitats.	2
NB	Purchase energy efficient and hybrid vehicles.	CCPRC	General fund	Lessen use of fossil fuels for high use vehicles	2
PP	Evaluate structure vulnerability to wildfire events at parks. Work with local Fire Departments.	CCPRC	General fund	Protection of buildings in natural settings from wildfires with good landscaping practices.	2
PA	Develop procedures to protect computer equipment and records.	CCPRC	General fund	Maintain employees support (ie: payroll, medical, etc.) and all revenue generating services.	2
NB	Establish riparian buffer zones around facility lakes and water bodies.	CCPRC	General fund	Control erosion and pesticide runoff. Improve water quality.	1
NB	Monitor water bodies near CCPRC dog parks for bacterial levels.	CCPRC	General fund	Prevent bacterial contamination of recreational waters from dog waste.	2
NB	Increase emphasis in re-cycling at all PRC facilities. Install re-cycling containers, drop off locations, etc.	CCPRC	General fund	Reduce waste taken to landfills.	2
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

Status Report for the Charleston County Park and Recreation Commission

The following are the projects proposed to be undertaken/ continued at Charleston County Park and Recreation Commission (CCPRC) facilities for hazard mitigation during 2016 and their status through April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1 is highest, 4 is lowest)	Status
PP	Distribute brochures to marina guests on protecting boats from damages during hurricanes.	CCPRC Marina Staff	General Fund; FEMA	Educate boat owners, minimize property damage.	1	Continuing
NB	Continue to purchase and maintain permanent open space as parks.	CCPRC	Grants; Bond funding	Preserve environmental and recreational resources, minimize flood damage, and improve water quality.	1	Continuing
NB	Continue preservation of beach access and shoreline ecology.	CCPRC	Grants; General funds	Protect coastline and property from natural hazards, provides quality of life for citizens and protects wildlife habitat	1	Continuing
PI	Continue involvement in local hazard mitigation initiatives by providing information to the community.	CCPRC	General fund	Educating citizens about their vulnerability to natural hazards, and reasons for protecting the environment.	1	Continuing
PP	Evaluate CCPRC property and structures to man-made and natural hazards.	CCPRC	General fund	Find, repair, and retrofit structures to reduce damages from natural hazards and improve security from acts of terrorism.	2	Continuing... Annual Assessment
NB	Re-establish beach dunes and vegetation	CCPRC	General fund	Protection of marsh land, property, and wildlife habitat.	1	Continuing
NB	Re-establish riparian buffer zones at all applicable water resources owned by CCPRC	CCPRC	General fund	Protection of environment, water quality, and wildlife habitat	1	Continuing
PI	Continue providing programs and resources to schools to enhance education of students to hazards and environmental issues.	CCPRC	General fund	Protecting the lives of citizens from natural hazards, increasing civil involvement in critical issues.	2	Continuing
PP	Accelerate agency's Hazard Tree Identification Program. Identify and remove problem trees.	CCPRC	General fund	Protect property from damage due to vulnerable trees during storms and hurricanes.	2	Continuing... periodic assessment of property vegetation
	Continue to update and inform employees of hazardous weather conditions as outlined in the Hurricane Plan.	CCPRC	General fund	Protection of property and safety of guest during hazardous weather events or other crisis.	1	Continuing... Annual updates of agency E.A.P.

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1 is highest, 4 is lowest)	Status
NB	Re-forestation of selected zones within developed CCPRC parks, Re-establish natural vegetation.	CCPRC	General fund	Decreased use of pesticides, improved water retention, drainage, improved drought and disease resistance, better hazard survival, and improved wildlife habitats.	2	Continuing
NB	Purchase energy efficient and hybrid vehicles.	CCPRC	General fund	Lessen use of fossil fuels for high use vehicles	2	Continuing
PP	Evaluate structure vulnerability to wildfire events at parks. Work with local Fire Departments.	CCPRC	General fund	Protection of buildings in natural settings from wildfires with good landscaping practices.	2	Continuing
PA	Develop procedures to protect computer equipment and records.	CCPRC	General fund	Maintain employees support (ie: payroll, medical, etc.) and all revenue generating services.	2	Continuing
NB	Establish riparian buffer zones around facility lakes and water bodies.	CCPRC	General fund	Control erosion and pesticide runoff. Improve water quality.	1	Continuing
NB	Monitor water bodies near CCPRC dog parks for bacterial levels.	CCPRC	General fund	Prevent bacterial contamination of recreational waters from dog waste.	2	Continuing...3 rd party testing of pond
NB	Increase emphasis in re-cycling at all PRC facilities. Install re-cycling containers, drop off locations, etc.	CCPRC	General fund	Reduce waste taken to landfills.	2	Continuing

7.19 - Charleston County School District

Resolution for Adoption

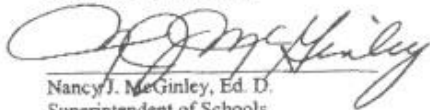
Charleston County School District
75 Calhoun Street
Charleston, SC 29401

TO: Board of Trustees
FROM: William H. Lewis, Chief Operating Officer for Capital Programs
DATE: August 11, 2008
SUBJECT: Hazard Mitigation Plan for Charleston County School District

Recommendation: Charleston County School Board officially agrees to pass the proposed resolution for the adoption of the revised Charleston Regional Hazard Mitigation Plan by the Charleston County School District.

The material submitted is for: Action Information

Respectfully submitted:


Nancy J. McGinley, Ed. D.
Superintendent of Schools


Michael Bobby
Chief of Finance and Operations Officer


William H. Lewis
Chief Operating Officer Capital Programs

APPROVED: Yes No

VOTE 6-0

9.4-1

Action Plan for the Charleston County School District

Following are the proposed projects to be undertaken/continued in the Charleston County School District for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA/ NB	Continue to prepare comprehensive hazard plan	Charleston County School District	Internal/ Grant Funding	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protect the lives of students faculty and staff of the Charleston County School District from natural and man-made hazards	1
PI/ PA	Continued development of Emergency response activities and training for all schools and other occupied structures	Charleston County School District	Internal/ Grant Funding	Public Education and outreach for hazard related activities at the Charleston County School District	1
PI	Continue distributing of information related to hazard preparations and media contacts to educate Charleston County School District staff and the public regarding hazard events	Charleston County School District	Internal/ Grant Funding	Public Education and outreach for hazard related activities at the Charleston County School District	1
PI	Continue participating in the Project Impact Outreach Project Strategy for the Community Rating System. Participate in the Program for Public Information (PPI) see Section VI - D for details	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1
PI	Continue working with local municipalities and Charleston County to enhance hazard event	Charleston County School District	Internal/ Grant Funding	Public Education and outreach for hazard related activities at the Charleston County School District	1

	preparations and response.				
PP/ SP	Seek funding for retrofitting Charleston County School District-owned facilities for enhanced hazard resistance as opportunities become available	Charleston County School District	Internal/ Grant Funding	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protect the lives of students faculty and staff of the Charleston County School District from natural and man-made hazards	2
PA	Continue development of an Emergency Operations Center for Charleston County School District	Charleston County School District	Internal/ Grant Funding	Provide central facility to monitor and coordinate response to natural and man-made hazards	2
PA/ PP/ SP	Continue to develop design specifications that will allow design of facilities to better resist natural and man-made hazards	Charleston County School District	Internal/ Grant Funding	Provide architects with guidelines to design hazardous resistant buildings	1
PA/ PP/ SP	Remove and rebuild schools identified as needing earthquake improvements.	Charleston County School District	Internal	Continue to replace outdated schools with modern, hazard resistant construction.	1

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities or Charleston County School District committees consider other projects and recommend these projects for implementation.

Status Report for the Charleston County School District

Following are the proposed projects to be undertaken/continued in the Charleston County School District for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA/ NB	Continue to prepare comprehensive hazard plan	Charleston County School District	Internal/ Grant Funding	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protect the lives of students faculty and staff of the Charleston County School District from natural and man-made hazards	1	Ongoing
PI/ PA	Continued development of Emergency response activities and training for all schools and other occupied structures	Charleston County School District	Internal/ Grant Funding	Public Education and outreach for hazard related activities at the Charleston County School District	1	Ongoing - New Employee Orientation, SafeSchools - online, FEMA Training classes, school monthly drills, SRO training
PI	Continue distributing of information related to hazard preparations and media contacts to educate Charleston County School District staff and the public regarding hazard events	Charleston County School District	Internal/ Grant Funding	Public Education and outreach for hazard related activities at the Charleston County School District	2	Ongoing - annual hurricane bulletin, great American shake-out drill, participation in severe weather week
PI	Continue participating in the Project Impact Outreach Project Strategy for the Community Rating System. Participate in the Program for Public Information (PPI) see Section VI - D for details	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	Ongoing

PI	Continue working with local municipalities and Charleston County to enhance hazard event preparations and response.	Charleston County School District	Internal/Grant Funding	Public Education and outreach for hazard related activities at the Charleston County School District	1	Ongoing - First Five safety videos, SRO, MOU with other entities, EOC drill exercises
PP/SP	Seek funding for retrofitting Charleston County School District-owned facilities for enhanced hazard resistance as opportunities become available	Charleston County School District	Internal/Grant Funding	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protect the lives of students faculty and staff of the Charleston County School District from natural and man-made hazards	2	Ongoing - 1 cent sales tax, FCO bond money, establishment of annual capital preventative maintenance budget
PA	Continue development of an Emergency Operations Center for Charleston County School District	Charleston County School District	Internal/Grant Funding	Provide central facility to monitor and coordinate response to natural and man-made hazards	2	Ongoing - in design
PA/ PP/ SP	Continue to develop design specifications that will allow design of facilities to better resist natural and man-made hazards	Charleston County School District	Internal/Grant Funding	Provide architects with guidelines to design hazardous resistant buildings	1	Ongoing - design guidelines for new construction
PA/ PP/ SP	Remove and rebuild schools identified as needing earthquake improvements.	Charleston County School District	Internal	Continue to replace outdated schools with modern, hazard resistant construction.	1	Ongoing - seismic evaluation in process

Additional Recommended Projects may be added to this project list as the Project Impact/Disaster Resistant Communities or Charleston County School District committees consider other projects and recommend these projects for implementation.

7.20 – Charleston Water System

Resolution for Adoption

A RESOLUTION FOR THE ADOPTION OF THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY THE CHARLESTON WATER SYSTEM COMMISSION

Resolution No.

WHEREAS the Charleston Water System Commission service area has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Charleston Water System Commission (formerly Commissioners of Public Works) originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, and is required to adopt the amended version of this plan on a five-year cycle for the Commission to remain eligible for certain Federal programs in which Charleston Water System Commission participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Charleston Water System Commission, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Charleston Water System Commission.

Effective this 22nd Day of September, 2008

Attest:

F. J. Hill Jr., C.E.O.

Margaret S. Porter, Witness

Action Plan for the Charleston Water System

(fka Commissioners of Public Works for the City of Charleston)

The Charleston Water System is located in Charleston County, SC.

The following are proposed projects to be undertaken/ continued by the Charleston Water System service area for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, "PI" is Public Information Activities, and "GIS" is Geographic Information System Activities.)

CWS Department Legend (indicates responsibility)

CS - Customer Service; **E&C - Engineering & Construction**; EO - Executive Office; ERD - Environmental Resources (Wastewater Treatment); **IT - Information Technology**; **HR - Human Resources**; **HWTP - Hanahan Water Treatment Plant**; **WWC - Wastewater Collection**; **WDD - Water Distribution**

Type	Activity	Lead Agency	Funding Source	Goal(s) Addressed	Priority (1-highest, 4-lowest)
Customer Service					
PA	Continue to install/maintain automated meter reading operations for the water system	CS, Meter Services	Major and Recurring Capital	Increase accuracy of readings; reduces fuel consumption; reduces exposure of readers to hazardous elements, such as dog bites, insect stings, etc.	3
Engineering & Construction					
SP	Continue to maintain 25-year master plans for water supply, distribution, collection, and treatment. Updates on-going.	E&C	O&M	Maintain up-to-date master plans to proactively replace aging infrastructure, ensure hydraulic efficiencies, and prepare for area growth.	1 (Update min. of every 10 years)
ES	Continue to replace aging sections of the wastewater tunnel	E&C	Major Capital	Will accommodate area growth and ensure that major overflows do not occur	1
PA	Continue to discuss Environmental Management System, Safety, and Security at preconstruction conferences	E&C; HR; Facilities; Purchasing	O&M; Major and Recurring Capital	Educate contractors on understanding safe work practices; protection of environment and security issues	1
ES	Continue to install emergency generators or stand-by power connections at pump stations	E&C	Major and Recurring Capital	Ensure continuous operations during power outages to protect the environment	2
PA	Continue to require design, engineering, and construction which meets code requirements for flood, hurricane, and seismic considerations	E&C; HWTP; ERD;WWC; WDD	Major and Recurring Capital	Minimizes the impacts from natural disasters to help ensure continual operations	2
GIS	Continue to maintain upgrades to GIS; continue to improve accuracy	E&C; WDD; WWC; CS	Major and Recurring Capital; O&M	GIS provides a powerful tool for analysis: to minimize disruption of water distribution and wastewater services, for work planning, and for emergency response location accuracy	1
SP	Continue implementation of water main replacement / rehabilitation	E&C; WDD	Major and Recurring Capital	Ensures reliable water infrastructure for providing safe and abundant water, reducing leaks, etc.	1
PA	Continue Cross Connection Control Program	E&C	O&M	Protects CWS's water system from contaminants; hence, public health protection	1

Type	Activity	Lead Agency	Funding Source	Goal(s) Addressed	Priority (1-highest, 4-lowest)
SP	Continue the optimization of plant and distribution pumping utilizing hydraulic modeling software	E&C; WDD; HWTP	O&M	Ensures adequate pressures are available to monitor age of water and maintain distribution system pressures	1
SP	Continue to expand/improve Supervisory Control and Data Acquisition (SCADA) infrastructure and system	EO	Major and recurring capital; O&M	Increase ability to monitor water and wastewater systems throughout plants and service area	2
SP	Continue rehabilitation of treatment plant unit processes	E&C	Major and Recurring Capital	Assures reliability and robustness of mechanical equipment and system infrastructure	1
SP	Continue implementation of water main replacement/rehabilitation	E&C; WDD	Major and Recurring Capital	Helps ensure reliable water infrastructure for providing safe and abundant water, reducing leaks, etc.	1
SP	Continue implementation of wastewater main replacement and rehabilitation	E&C; WWC	Major Capital	Ensures reliable wastewater infrastructure, reducing blockages, I&I, etc.	1
Executive Office					
PA	Continue to conform with ISO 14001 Standards for maintaining an Environmental Management System (EMS)	EO and other depts.	O&M	Serves to minimize risk of activities adversely impacting the environment and public health	1
NB	Continue support of the SC Water Quality Association	EO	O&M	Protect the environment while preserving valuable natural resources	2
NB	Continue support of the Cooper River Water Users Association	EO	O&M	Protect the environment while preserving valuable natural resources	3
NB	Continue general water quality monitoring program for area rivers	EO; Laboratory	O&M	Helps ensure that the water environment is being protected	2
PI	Continue Speakers' Bureau Program for water/wastewater education to schools, civic clubs, and public meetings	EO	O&M	Helps disseminate critical information to CWS's customers; improves understanding and solicits help	2
PI	Continue participation in Earth Day	EO and other depts.	O&M	Opportunity to inform general public about critical environmental issues and what the public can do to help minimize their impacts to environment	3
NB	Continue/expand recycling program	EO and other departments	O&M	Reduces impacts on the environment; landfill use; air quality; water quality, etc.	3
PA	Continue membership in American Water Works Association (AWWA) & Water Research Foundation (WEF)	EO; HWTP; WDD; E&C	O&M	Supporting research efforts and staying top of latest technology helps to optimize operations and minimize risk	1
PA	Continue membership in Water Research Foundation (WRF) & Water Environment Research Foundation (WERF)	EO; ERD; WWC; E&C	O&M	Supporting research efforts and staying on top of latest technology helps to optimize operations and minimize risk	1

Type	Activity	Lead Agency	Funding Source	Goal(s) Addressed	Priority (1-highest, 4-lowest)
PA	Continue participation in Water Manager's Coalition	EO	O&M	Collaboration, emergency preparation & response, & cooperative efforts w/ other utilities in S.C.	3
NB	Continue to evaluate/implement portions of the City of Charleston's Green Plan	EO	Major and Recurring Capital; O&M	Reduces use of natural resources and impact of our operations on the environment	3
NB	Continue maintaining & expanding recycling program	EO and other departments	O&M	Reduces impacts on the environment; landfill use; air quality; water quality, etc.	3
NB	Continue Bio-solids (Bio-mass) Recycling Program	EO; ERD	O&M	Reduces impacts on the environment; landfill use; air quality; water quality, etc.	2
PA	Continue to improve corporate-level emergency plans; improve consistency across all depts.	EO and all departments	O&M	Corporate-level emergency plans aids in consistent preparation & response to emergency situations.	1
ES	Continue to maintain emergency preparedness plans for various emergencies	All departments	O&M	Comprehensive emergency preparedness plans are used to direct operations before, during, and after a disaster to minimize adverse impacts	1
ES	Continue training associates annually on emergency preparedness & response (EMS requirement)	All departments	O&M	Associate awareness is critical to ensure proper response prior to, during, and after a disaster event	1
ES	Continue risk management scoring of critical assets	ERD; HWTP; WWC; WDD	O&M	Prioritize critical assets; initiate efforts to reduce risk	1
ES	Continue participation in the S.C. mutual aid Water/wastewater Agency Response Network (SC WARN)	All departments	O&M	Mutual aid agreements for member S.C. utilities to share resources prior to, during, or after an emergency event.	1
Environmental Resources					
PA	Continue using sodium hypo-chlorite at the wastewater plant for disinfection purposes	ERD	O&M	Greatly reduces risks associated with gaseous chlorine storage	1
PA	Continue optimizing process control at wastewater treatment plant(s)	ERD	O&M	Promotes efficiency, and protects public health and the water environment	1
PA	Continue to enforce and maintain the industrial pre-treatment program	ERD; WWC	O&M	Enforcement minimizes risk of toxicity to the WWTPs	2
SP	Continue to institute statistical process control at plant	ERD	O&M	Improves operational efficiencies, and will aid in protecting the environment	2
Information Technology					
GIS	Continue linking work orders to GIS maps	IT; WWC; WDD; CS	O&M	Enables real-time changes to be made to GIS and asset condition description; this ensures faster emergency response	2
PA	Continue utilizing ruggedized laptops for use with field crews	IT; WDD; WWC	O&M	Enables sending of work-orders and other documents and records to crews in real-time. This ensures faster response time in emergencies	2
PA	Continue maintaining & expanding OPS SQL statistical analysis program	HWTP	O&M	Improves statistical analysis for faster response to changes in the water treatment process	1

Type	Activity	Lead Agency	Funding Source	Goal(s) Addressed	Priority (1-highest, 4-lowest)
PA	Continue monitoring and evaluation of cyber-security	IT / SCADA	O&M	Evaluate potential cyber risks associated with information technology services and data management	1
Human Resources					
ES	Continue training on emergency preparedness, emergency response, safety, first aid, CPR, defensive driving, etc.	HR	O&M	Train CWS associates to provide first aid response to protect health	2
PA	Continue Employee Wellness Program	HR	O&M	Reduce health risks to CWS associates	3
PA	Continue to improve Safety Program	HR	O&M	Help ensure safe working conditions for CWS associates, contractors, and CWS customers and visitors	1
Hanahan Water Treatment Plant					
ES	Continue Risk Management Plan and Process Management Plan	HWTP	O&M	Protects public and worker health from chemical releases	1
ES	Continue Hazwoper Training	HWTP	O&M	Minimize impact of chemical release	1 (Increased to 12-member team)
ES	Continue maintaining & training on Spill Prevention, Control, and Countermeasure (SPCC) plan	HWTP	O&M	Plan updates and mitigation for chemical spills	1
ES	Continue training on caustic scrubber for chlorine leak mitigation	HWTP	O&M	Minimize impact of chemical release	1
ES	Continue training with local area fire and police departments	HWTP	O&M	Ensure that chemical releases are dealt with quickly with minimum of property damage and risk to public	1
PA	Continue monitoring of raw water supplies	HWTP	O&M	Ensures safety and treatability of source water supplies	1
PA	Continue optimizing process control at treatment plants	HWTP; ERD	O&M	Protects public health and water environment	1
PA	Continue membership in AWWA's Partnership for Safe Drinking Water	HWTP	O&M	Ensures excellence in water treatment to protect water quality and public health due to protozoan contaminants	1
SP	Continue/expand the use of statistical process control at plant	HWTP	O&M	Improves operational efficiencies and finished water quality, and will protect public health	1
ES	Continue to maintain on-line, real-time monitoring system for raw water, finished water and water distribution system	HWTP; WDD; EO	Grant and O&M	Will help protect public health by monitoring in real-time any abnormalities in the potable water	1
ES	Continue preferential treatment from chemical vendors regarding chemical deliveries after emergency events.	HWTP	O&M	Ensures drinking water quality is a priority for the community after an emergency event.	1
Wastewater Collection					
PA	Continue to enforce wastewater rules and regulations	WWC; ERD; E&C; Customer Service	O&M	Minimize problems with wastewater collection and treatment to protect public health and environment	1

Type	Activity	Lead Agency	Funding Source	Goal(s) Addressed	Priority (1-highest, 4-lowest)
PI	Continue informing citizens about need for proper grease disposal and flushables	WWC; EO	O&M	Educating the public will help CWS to minimize problems with its wastewater collection	3
PA	Continue enforcing grease trap ordinance program	WWC	O&M	Minimizes clogs in wastewater mains	3
PA	Continue CCTV monitoring and cleaning of wastewater mains	WWC	O&M; Recurring Capital	Ensures proper operations of wastewater system; identifies deficient wastewater mains for rehab	1
PA	Continue Sewer System Evaluation Surveys (SSES)	WWC	O&M	Identifies deficiencies to be corrected for proper system operations and to minimize hydraulic overloads	1
PA	Continue Smoke Testing Program	WWC	O&M	Identifies deficiencies to be corrected for proper system operations and to minimize hydraulic overloads	2
SP	Continue rehabilitation of wastewater mains and service laterals	WWC; E&C	Major and Recurring Capital	Improvements to wastewater infrastructure allows better control of I/I, fewer main collapses, and fewer wastewater back-ups	2
GIS	Continue asset register population	WWC	O&M	Populate GIS with missing data and Improve the integrity of asset data as needed	1
ES	Continue to update Spill Prevention, Control, and Countermeasure (SPCC) plan as needed	HWTP; ERD; WWC; Fleet	O&M	Minimize the impacts of a petroleum or chemical spill	2
Water Distribution					
PA	Continue to enforce water rules and regulations	WDD; Cross Connection Control; Customer Service	O&M	Minimize problems with water distribution and water quality	2
ES	Continue fire hydrant installations, replacements, and improvements	WDD; E&C	Major and Recurring Capital	Helps ensure proper levels of water quantity for fighting emergency fires	1
PA	Continue working with area fire departments on proper flushing techniques	WDD	O&M	Educating 14 different fire districts on proper operation of fire hydrants to minimize damage and to help protect water quality	2
PA	Continue leak detection program	WDD	O&M	Ensures water main integrity and minimizes water losses	2
PA	Continue Water Main Flushing Program	WDD	O&M	Helps protect water quality and public health	1
PA	Continue with program to communicate more effectively with CWS's large water customers	WDD; EO	O&M	Improvements in communication to large customers is essential prior to, during, & after a crisis. Communicate important regulatory changes & solicit feedback.	2
ES	Continue to maintain and increase the capacity of potable water supply tanks	WDD	O&M; Recurring Capital	During an emergency water loss, potable water service is critical for certain facilities; potable water tanks provide that service	1
GIS	Continue asset register population	WDD	O&M	Populate GIS with missing data and Improve the integrity of asset data as needed	1

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>
SP	Continue water main rehabilitation / replacement program	WDD	Major & Recurring Capital	Reduces the number of water main breaks, increases fire flows, improves service to critical customers, and lowers the potential of disturbances to the environment.	1

Status Report for the Charleston Water System

(fka Commissioners of Public Works for the City of Charleston)

The Charleston Water System is located in Charleston County, SC.

The following are proposed projects to be undertaken/ continued by the Charleston Water System service area for hazard mitigation during 2016-2017 and their status through April 2017.

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, "PI" is Public Information Activities, and "GIS" is Geographic Information System Activities.)

CWS Department Legend (indicates responsibility)

CS - Customer Service; **E&C - Engineering & Construction**; EO - Executive Office; ERD - Environmental Resources (Wastewater Treatment); **IT - Information Technology**; **HR - Human Resources**; **HWTP - Hanahan Water Treatment Plant**; **WWC - Wastewater Collection**; **WDD - Water Distribution**

Type	Activity	Lead Agency	Funding Source	Goal(s) Addressed	Priority (1-highest, 4-lowest)	Status
Customer Service						
PA	Continue to install/maintain automated meter reading operations for the water system	CS, Meter Services	Major and Recurring Capital	Increase accuracy of readings; reduces fuel consumption; reduces exposure of readers to hazardous elements, such as dog bites, insect stings, etc.	3	We are currently replacing 6000 meters this year with a plan to continue for the next 4 years or upon completion of the entire system
Engineering & Construction						
SP	Continue to maintain 25-year master plans for water supply, distribution, collection, and treatment. Updates on-going.	E&C	O&M	Maintain up-to-date master plans to proactively replace aging infrastructure, ensure hydraulic efficiencies, and prepare for area growth.	1	<u>On-going</u> (Update min. of every 10 years)
ES	Continue to replace aging sections of the wastewater tunnel	E&C	Major Capital	Will accommodate area growth and ensure that major overflows do not occur	1	<u>On-going</u>
PA	Continue to discuss Environmental Management System, Safety, and Security at preconstruction conferences	E&C; HR; Facilities; Purchasing	O&M; Major and Recurring Capital	Educate contractors on understanding safe work practices; protection of environment and security issues	1	<u>On-going</u>
ES	Continue to install emergency generators or stand-by power connections at pump stations	E&C	Major and Recurring Capital	Ensure continuous operations during power outages to protect the environment	2	<u>On-going</u>
PA	Continue to require design, engineering, and construction which meets code requirements for flood, hurricane, and seismic considerations	E&C; HWTP; ERD; WWC; WDD	Major and Recurring Capital	Minimizes the impacts from natural disasters to help ensure continual operations	2	<u>On-going</u>
GIS	Continue to maintain upgrades to GIS; continue to improve accuracy	E&C; WDD; WWC; CS	Major and Recurring Capital; O&M	GIS provides a powerful tool for analysis: to minimize disruption of water distribution and wastewater services, for work planning, and for emergency response location accuracy	1	<u>On-going</u>
SP	Continue implementation of water main replacement / rehabilitation	E&C; WDD	Major and Recurring Capital	Ensures reliable water infrastructure for providing safe and abundant water, reducing leaks, etc.	1	<u>On-going</u>
PA	Continue Cross Connection Control Program	E&C	O&M	Protects CWS's water system from contaminants; hence, public health protection	1	<u>On-going</u>

SP	Continue the optimization of plant and distribution pumping utilizing hydraulic modeling software	E&C; WDD; HWTP	O&M	Ensures adequate pressures are available to monitor age of water and maintain distribution system pressures	1	<u>On-going</u>
SP	Continue to expand/improve Supervisory Control and Data Acquisition (SCADA) infrastructure and system	EO	Major and recurring capital; O&M	Increase ability to monitor water and wastewater systems throughout plants and service area	2	<u>On-going</u>
SP	Continue rehabilitation of treatment plant unit processes	E&C	Major and Recurring Capital	Assures reliability and robustness of mechanical equipment and system infrastructure	1	<u>On-going</u>
SP	Continue implementation of water main replacement/rehabilitation	E&C; WDD	Major and Recurring Capital	Helps ensure reliable water infrastructure for providing safe and abundant water, reducing leaks, etc.	1	<u>On-going</u>
SP	Continue implementation of wastewater main replacement and rehabilitation	E&C; WWC	Major Capital	Ensures reliable wastewater infrastructure, reducing blockages, I&I, etc.	1	<u>On-going</u>
Executive Office						
PA	Continue to conform with ISO 14001 Standards for maintaining an Environmental Management System (EMS)	EO and other depts.	O&M	Serves to minimize risk of activities adversely impacting the environment and public health	1	On-going
NB	Continue support of the SC Water Quality Association	EO	O&M	Protect the environment while preserving valuable natural resources	2	On-going
NB	Continue support of the Cooper River Water Users Association	EO	O&M	Protect the environment while preserving valuable natural resources	3	On-going
NB	Continue general water quality monitoring program for area rivers	EO; Laboratory	O&M	Helps ensure that the water environment is being protected	2	On-going In conjunction with COG
PI	Continue Speakers' Bureau Program for water/wastewater education to schools, civic clubs, and public meetings	EO	O&M	Helps disseminate critical information to CWS's customers; improves understanding and solicits help	2	On-going
PI	Continue participation in Earth Day	EO and other depts.	O&M	Opportunity to inform general public about critical environmental issues and what the public can do to help minimize their impacts to environment	3	On-going
NB	Continue/expand recycling program	EO and other departments	O&M	Reduces impacts on the environment; landfill use; air quality; water quality, etc.	3	On-going
PA	Continue membership in American Water Works Association (AWWA) & Water Research Foundation (WEF)	EO; HWTP; WDD; E&C	O&M	Supporting research efforts and staying top of latest technology helps to optimize operations and minimize risk	1	On-going
PA	Continue membership in Water Research Foundation (WRF) & Water Environment Research Foundation (WERF)	EO; ERD; WWC; E&C	O&M	Supporting research efforts and staying on top of latest technology helps to optimize operations and minimize risk	1	On-going

PA	Continue participation in Water Manager's Coalition	EO	O&M	Collaboration, emergency preparation & response, & cooperative efforts w/ other utilities in S.C.	3	On-going
NB	Continue to evaluate/implement portions of the City of Charleston's Green Plan	EO	Major and Recurring Capital; O&M	Reduces use of natural resources and impact of our operations on the environment	3	On-going
ES	Continue to maintain/improve counter-terrorism program.	EO; HWTP; E&C; Facilities	O&M	Minimize potential for water and wastewater contamination in order to protect public health and the environment	1	On-going
NB	Continue maintaining & expanding recycling program	EO and other departments	O&M	Reduces impacts on the environment; landfill use; air quality; water quality, etc.	3	On-going
NB	Continue Bio-solids (Bio-mass) Recycling Program	EO; ERD	O&M	Reduces impacts on the environment; landfill use; air quality; water quality, etc.	2	On-going
PA	Continue to improve corporate-level emergency plans; improve consistency across all depts.	EO and all departments	O&M	Corporate-level emergency plans aids in consistent preparation & response to emergency situations.	1	On-going
ES	Continue to maintain emergency preparedness plans for various emergencies	All departments	O&M	Comprehensive emergency preparedness plans are used to direct operations before, during, and after a disaster to minimize adverse impacts	1	On-going
ES	Continue training associates annually on emergency preparedness & response (EMS requirement)	All departments	O&M	Associate awareness is critical to ensure proper response prior to, during, and after a disaster event	1	On-going
ES	Continue risk management scoring of critical assets	ERD; HWTP; WWC; WDD	O&M	Prioritize critical assets; initiate efforts to reduce risk	1	On-going
ES	Continue participation in the S.C. mutual aid Water/wastewater Agency Response Network (SC WARN)	All departments	O&M	Mutual aid agreements for member S.C. utilities to share resources prior to, during, or after an emergency event.	1	On-going
Environmental Resources						
PA	Continue using sodium hypo-chlorite at the wastewater plant for disinfection purposes	ERD	O&M	Greatly reduces risks associated with gaseous chlorine storage	1	On-going
PA	Continue optimizing process control at wastewater treatment plant(s)	ERD	O&M	Promotes efficiency, and protects public health and the water environment	1	On-going
PA	Continue to enforce and maintain the industrial pre-treatment program	ERD; WWC	O&M	Enforcement minimizes risk of toxicity to the WWTPs	2	On-going
SP	Continue to institute statistical process control at plant	ERD	O&M	Improves operational efficiencies, and will aid in protecting the environment	2	On-going
Information Technology						
GIS	Continue linking work orders to GIS maps	IT; WWC; WDD; CS	O&M	Enables real-time changes to be made to GIS and asset condition description; this ensures faster emergency response	2	Continuing with the asset management project under Connie Banegas
PA	Continue utilizing ruggedized laptops for use with field crews	IT; WDD; WWC	O&M	Enables sending of work-orders and other documents and records to crews in real-time. This ensures faster response time in emergencies	2	Completed but CWS is upgrading system with new hardware and software to be more responsive

PA	Continue maintaining & expanding OPS SQL statistical analysis program	HWTP	O&M	Improves statistical analysis for faster response to changes in the water treatment process	1	Complete
PA	Continue monitoring and evaluation of cyber-security	IT / SCADA	O&M	Evaluate potential cyber risks associated with information technology services and data management	1	Always a continuing process; CWS has performed evaluation and review in 2015
Human Resources						
ES	Continue training on emergency preparedness, emergency response, safety, first aid, CPR, defensive driving, etc.	HR	O&M	Train CWS associates to provide first aid response to protect health	2	Ongoing
PA	Continue Employee Wellness Program	HR	O&M	Reduce health risks to CWS associates	3	Ongoing
PA	Continue to improve Safety Program	HR	O&M	Help ensure safe working conditions for CWS associates, contractors, and CWS customers and visitors	1	Ongoing
Hanahan Water Treatment Plant						
ES	Continue Risk Management Plan and Process Management Plan	HWTP	O&M	Protects public and worker health from chemical releases	1	Current
ES	Continue Hazwoper Training	HWTP	O&M	Minimize impact of chemical release	1 (Increased to 12-member team)	Current, Incident command course scheduled Feb 2016
ES	Continue maintaining & training on Spill Prevention, Control, and Countermeasure (SPCC) plan	HWTP	O&M	Plan updates and mitigation for chemical spills	1	Current
ES	Continue training on caustic scrubber for chlorine leak mitigation	HWTP	O&M	Minimize impact of chemical release. Note: replacement scrubber engineering design in process	1	Ongoing
ES	Continue training with local area fire and police departments	HWTP	O&M	Ensure that chemical releases are dealt with quickly with minimum of property damage and risk to public	1	Toured plant with new Hanahan fire chief, N. CHS hazmat coordinator
PA	Continue monitoring of raw water supplies	HWTP	O&M	Ensures safety and treatability of source water supplies	1	Current
PA	Continue optimizing process control at treatment plants	HWTP; ERD	O&M	Protects public health and water environment	1	Current – initiating program for partnership IV
PA	Continue membership in AWWA's Partnership for Safe Drinking Water	HWTP	O&M	Ensures excellence in water treatment to protect water quality and public health due to protozoan contaminants	1	Current
SP	Continue/expand the use of statistical process control at plant	HWTP	O&M	Improves operational efficiencies and finished water quality, and will protect public health	1	Current
ES	Continue to maintain on-line, real-time monitoring system for raw water, finished water and water distribution system	HWTP; WDD; EO	Grant and O&M	Will help protect public health by monitoring in real-time any abnormalities in the potable water	1	Current
PA	Continue Bushy Park Tunnel Air Vent Protection Program	HWTP; E&C	O&M	Protect raw water source from contamination	1	Complete

ES	Continue preferential treatment from chemical vendors regarding chemical deliveries after emergency events.	HWTP	O&M	Ensures drinking water quality is a priority for the community after an emergency event.	1	Current
Wastewater Collection						
PA	Continue to enforce wastewater rules and regulations	WWC; ERD; E&C; Customer Service	O&M	Minimize problems with wastewater collection and treatment to protect public health and environment	1	Ongoing
PI	Continue informing citizens about need for proper grease disposal and flushables	WWC; EO	O&M	Educating the public will help CWS to minimize problems with its wastewater collection	3	Ongoing - Participating in Regional Campaign
PA	Continue enforcing grease trap ordinance program	WWC	O&M	Minimizes clogs in wastewater mains	3	Ongoing
PA	Continue CCTV monitoring and cleaning of wastewater mains	WWC	O&M; Recurring Capital	Ensures proper operations of wastewater system; identifies deficient wastewater mains for rehab	1	Ongoing
PA	Continue Sewer System Evaluation Surveys (SSES)	WWC	O&M	Identifies deficiencies to be corrected for proper system operations and to minimize hydraulic overloads	1	Ongoing within basins with the highest normalized I/I flows
PA	Continue Smoke Testing Program	WWC	O&M	Identifies deficiencies to be corrected for proper system operations and to minimize hydraulic overloads	2	Ongoing
SP	Continue rehabilitation of wastewater mains and service laterals	WWC; E&C	Major and Recurring Capital	Improvements to wastewater infrastructure allows better control of I/I, fewer main collapses, and fewer wastewater back-ups	2	Ongoing - CIP and recurring capital programs
GIS	Continue asset register population	WWC	O&M	Populate GIS with missing data and Improve the integrity of asset data as needed	1 (1% remaining)	Completed Asset Register. AM program deployment ongoing.
ES	Continue to update Spill Prevention, Control, and Countermeasure (SPCC) plan as needed	HWTP; ERD; WWC; Fleet	O&M	Minimize the impacts of a petroleum or chemical spill	2	Ongoing
Water Distribution						
PA	Continue to enforce water rules and regulations	WDD; Cross Connection Control; Customer Service	O&M	Minimize problems with water distribution and water quality	2	Ongoing
PA	Continue expanding corrosion control prevention program of water distribution system	WDD	Recurring Capital; O&M	Minimize potential corrosion of water mains to extend life and lower leakage rate	2	Ongoing
ES	Continue fire hydrant installations, replacements, and improvements	WDD; E&C	Major and Recurring Capital	Helps ensure proper levels of water quantity for fighting emergency fires	1	Ongoing
PA	Continue working with area fire departments on proper flushing techniques	WDD	O&M	Educating 14 different fire districts on proper operation of fire hydrants to minimize damage and to help protect water quality	2	Ongoing
PA	Continue leak detection program	WDD	O&M	Ensures water main integrity and minimizes water losses	2	Ongoing
PA	Continue Water Main Flushing Program	WDD	O&M	Helps protect water quality and public health	1	Ongoing

PA	Continue with program to communicate more effectively with CWS's large water customers	WDD; EO	O&M	Improvements in communication to large customers is essential prior to, during, & after a crisis. Communicate important regulatory changes & solicit feedback.	2	Ongoing
ES	Continue to maintain and increase the capacity of potable water supply tanks	WDD	O&M; Recurring Capital	During an emergency water loss, potable water service is critical for certain facilities; potable water tanks provide that service	1	Water main rehabilitation and replacement ongoing
GIS	Continue asset register population	WDD	O&M	Populate GIS with missing data and Improve the integrity of asset data as needed	1	96-97% complete
SP	Continue water main rehabilitation / replacement program	WDD	Major & Recurring Capital	Reduces the number of water main breaks, increases fire flows, improves service to critical customers, and lowers the potential of disturbances to the environment.	1	Ongoing

7.21 - College of Charleston

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
College of Charleston, Charleston, SC**

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

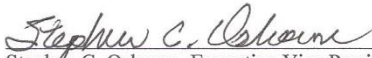
WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the College of Charleston originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the College of Charleston to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the College of Charleston, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Executive Vice President for Business Affairs at the College of Charleston.

Effective this 21st Day of October, 2013



Stephen C. Osborne, Executive Vice President for Business Affairs

Action Plan for the College of Charleston

Following are the proposed projects to be undertaken/continued in the College of Charleston for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA PP ES PI	Continued training and coordination activities with the campus- emergency operations team.	Emergency Management Director	General Fund	Campus wide coordination and preparation for all emergency management activities; protect the lives of our employees and students from natural and man-made hazards	1
PA / PP / ES/ PI	Continued development and refinement of campus-wide emergency management protocols.	Emergency Management Director	General Fund	Preparation for all emergency management activities; protect the lives of our employees and students from natural and man-made hazards	2
PA / PP	Continue enforcement of the International series Building, environmental safety and Fire codes	Physical Plant / Environmental Health and Safety/Fire	General Fund	Minimize potential flood damage; minimize future earthquake damage; minimize future hurricane damage; protect the lives of our employees and students from natural and man-made hazards	1
PA	Participation in Project Impact with the purpose of improving education on Hazards to the college and community	Emergency Management / Project Impact partners	General Fund	Protect the lives of our citizens from natural and man-made hazards; 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	2
NB	Continued support of the new campus sustainability program at the College of Charleston	CofC Office of Sustainability	General Fund Grant Funding	Environmental, resiliency, outreach and education programs	3
PP	Continue energy conservation retrofitting of college-owned facilities as resources are available.	Facilities Management	General Fund Grant Funding	Improve air quality	4

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Continue hazardous material training	Environmental Health and Safety Director	General fund	Protecting lives employees and students from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; improve hazard resistance of infrastructure; assessing vulnerability to man-made hazards	1
ES	Continue coordinating Emergency Operations Center activities related to a hazard event, including holding drills for EOC personnel.	Emergency Management	General Fund	Protecting lives of employees and students from natural and man-made hazards; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; preserve environmental resources; promote long-term resiliency of the college	1
ES	Continue responding to hazard emergencies	EMS, Fire and Public Safety Department, EHS, Emergency Management	General Fund	Protecting lives of employees and students natural and man-made hazards; employees and students campus community regarding vulnerability to hazards and steps to reduce vulnerability; preserve environmental resources; preserve historic building inventory; promote long-term resiliency of the college	1
ES	Continue working to attain resources and to provide training for campus community on hurricane, earthquake and other natural hazards in the Region	Emergency Management Director	General Fund	Protecting the lives of employees and students from natural and man-made hazards; Minimize future hazardous materials incidents; promote long-term resiliency of the college	1
PI	Development of campus web pages and email blasts for natural and man-made hazards on Campus	Emergency Management Director	General Fund	Protecting the lives of employees and students from natural and man-made hazards; Minimize future hazardous materials incidents; promote long-term resiliency of the college	1
PI	Continued use of Cougar Alerts system	Emergency Management Director	General Fund	Protecting the lives of employees and students from natural and man-made hazards; Minimize future hazardous materials incidents; promote long-term resiliency of the college	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
GIS	Continued development of campus map including referenced blue prints	EMS, Fire and Public Safety Department, EHS, Emergency Preparedness, Physical Plant, SCGIS lab	General Fund	Protecting the lives of employees and students from natural and man-made hazards; promote long-term resiliency of the college	2
GIS/ ES/ PI	Continued development of campus EOC / GIS computing / Web-EOC center	Emergency Management, Physical Plant, SCGIS lab	General fund, Grant funding	Protecting the lives of employees and students from natural and man-made hazards; promote long-term resiliency of the college	2
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

Status Report for the College of Charleston

Following are the proposed projects to be undertaken/continued in the College of Charleston for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA / PP / ES/ PI	Continued training and coordination activities with the campus- emergency operations team.	Emergency Management Director	General Fund	Campus wide coordination and preparation for all emergency management activities; protect the lives of our employees and students from natural and man-made hazards	1	ONGOING
PA / PP / ES/ PI	Continued development and refinement of campus-wide emergency management protocols.	Emergency Management Director	General Fund	Preparation for all emergency management activities; protect the lives of our employees and students from natural and man-made hazards	2	ONGOING
PA / PP	Continue enforcement of the International series Building, environmental safety and Fire codes	Physical Plant / Environmental Health and Safety/Fire	General Fund	Minimize potential flood damage; minimize future earthquake damage; minimize future hurricane damage; protect the lives of our employees and students from natural and man-made hazards	1	ONGOING
PA	Participation in Project Impact with the purpose of improving education on Hazards to the college and community	Emergency Management / Project Impact partners	General Fund	Protect the lives of our citizens from natural and man-made hazards; 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	2	ONGOING
NB	Continued support of the new campus sustainability program at the College of Charleston	CofC Office of Sustainability	General Fund Grant Funding	Environmental, resiliency, outreach and education programs	3	ONGOING
PP	Continue energy conservation retrofitting of college-owned facilities as resources are available.	Facilities Management	General Fund Grant Funding	Improve air quality	4	ONGOING

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
ES	Continue hazardous material training	Environmental Health and Safety Director	General fund	Protecting lives employees and students from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; improve hazard resistance of infrastructure; assessing vulnerability to man-made hazards	1	ONGOING
ES	Continue coordinating Emergency Operations Center activities related to a hazard event, including holding drills for EOC personnel.	Emergency Management	General Fund	Protecting lives of employees and students from natural and man-made hazards; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; preserve environmental resources; promote long-term resiliency of the college	1	ONGOING
ES	Continue responding to hazard emergencies	EMS, Fire and Public Safety Department, EHS, Emergency Management	General Fund	Protecting lives of employees and students natural and man-made hazards; employees and students campus community regarding vulnerability to hazards and steps to reduce vulnerability; preserve environmental resources; preserve historic building inventory; promote long-term resiliency of the college	1	ONGOING
ES	Continue working to attain resources and to provide training for campus community on hurricane, earthquake and other natural hazards in the Region	Emergency Management Director	General Fund	Protecting the lives of employees and students from natural and man-made hazards; Minimize future hazardous materials incidents; promote long-term resiliency of the college	1	ONGOING
PI	Development of campus web pages and email blasts for natural and man-made hazards on Campus	Emergency Management Director	General Fund	Protecting the lives of employees and students from natural and man-made hazards; Minimize future hazardous materials incidents; promote long-term resiliency of the college	1	ONGOING
PI	Continued use of Cougar Alerts system	Emergency Management Director	General Fund	Protecting the lives of employees and students from natural and man-made hazards; Minimize future hazardous materials incidents; promote long-term resiliency of the college	1	ONGOING

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
GIS	Continued development of campus map including referenced blue prints	EMS, Fire and Public Safety Department, EHS, Emergency Preparedness, Physical Plant, SCGIS lab	General Fund	Protecting the lives of employees and students from natural and man-made hazards; promote long-term resiliency of the college	2	ONGOING
GIS/ES/PI	Continued development of campus EOC / GIS computing / Web-EOC center	Emergency Management, Physical Plant, SCGIS lab	General fund, Grant funding	Protecting the lives of employees and students from natural and man-made hazards; promote long-term resiliency of the college	2	ONGOING
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	ONGOING

7.22 - Cooper River Parks & Playground Commission

Resolution for Adoption

A RESOLUTION FOR THE ADOPTION OF THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY COOPER RIVER PARKS AND PLAYGROUND COMMISSION

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Cooper River Parks and Playground Commission originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Cooper River Parks and Playground Commission to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Cooper River Parks and Playground Commission, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Cooper River Parks and Playground Commission.

Effective this 18th Day of November, 2013

Attest: 

Action Plan for the Cooper River Parks and Playground Commission

Following are the proposed projects to be undertaken/ continued in the Cooper River Parks and Playground Commission service area for hazard mitigation during 2017-2018

(Abbreviations: PP- Property Protection; NB- Natural Benefits; PI- Public Information, PA – Preventive Activities)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PP	Continue to update and inform employees of hazardous weather conditions as outlined in the Hurricane Plan.	City of North Charleston Parks and Recreation	General Fund	Protecting the lives of staff and citizens from natural hazards	1
NB	Continue maintaining permanent open space as parks.	City of North Charleston Parks and Recreation	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1
PA	Continue to update and inform employees of hazardous weather conditions	City of North Charleston Parks and Recreation	General fund	Protection of property and safety of guest during hazardous weather events or other crisis.	1
PP	Evaluate Cooper River Parks and Playground Commission property and structures to man-made and natural hazards.	City of North Charleston Parks and Recreation	General fund	Find, repair, and retrofit structures to reduce damages from natural hazards and improve security from acts of terrorism.	2
PI	Continue involvement in local hazard mitigation initiatives providing information to the Cooper River Parks and Playground Commission/City of North Charleston Parks and Recreation Department Staff	City of North Charleston Parks and Recreation	General Funding	Protect the lives of agency staff.	2
PI	Continue participating in the Project Impact Outreach Project Strategy for the Community Rating System. Participate in the Program for Public Information (PPI) see Section VI - D for details	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1
PP	Accelerate agency's Hazard Tree identification program. Identify and remove problem trees	City of North Charleston Parks and Recreation	General Fund	Preserve environmental resources; minimize future hurricane damage	2
PP	Seek funding to retrofit facilities for enhanced hazard resistance, if funding becomes available and suitable projects are identified.	City of North Charleston Parks and Recreation	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1
NB	Increase emphasis in re-cycling at all CRPPC facilities. Install re-cycling containers, drop off locations, etc.	City of North Charleston Parks and Recreation	General fund	Reduce waste taken to landfills.	2

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA	Develop procedures to protect computer equipment and records.	City of North Charleston Parks and Recreation	General fund	Maintain employees support (ie: payroll, medical, etc.) and all revenue generating services.	2
NB	Maintain and/or re-establish natural vegetation in selected zones within park areas.	City of North Charleston Parks and Recreation	General fund	Decreased use of pesticides, improved water retention, drainage, improved drought and disease resistance, better hazard survival, and improved wildlife habitats.	2
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

Status Report for the Cooper River Parks and Playground Commission

Following are the proposed projects to be undertaken/continued in the Cooper River Parks and Playground Commission service area for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations: PP- Property Protection; NB- Natural Benefits; PI- Public Information, PA – Preventive Activities)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PP	Continue to update and inform employees of hazardous weather conditions as outlined in the Hurricane Plan.	City of North Charleston Parks and Recreation	General Fund	Protecting the lives of staff and citizens from natural hazards	1	On-going
NB	Continue maintaining permanent open space as parks.	City of North Charleston Parks and Recreation	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1	On-going
PA	Continue to update and inform employees of hazardous weather conditions	City of North Charleston Parks and Recreation	General fund	Protection of property and safety of guest during hazardous weather events or other crisis.	1	On-going
PP	Evaluate Cooper River Parks and Playground Commission property and structures to man-made and natural hazards.	City of North Charleston Parks and Recreation	General fund	Find, repair, and retrofit structures to reduce damages from natural hazards and improve security from acts of terrorism.	2	On-going
PI	Continue involvement in local hazard mitigation initiatives providing information to the Cooper River Parks and Playground Commission/City of North Charleston Parks and Recreation Department Staff	City of North Charleston Parks and Recreation	General Funding	Protect the lives of agency staff.	2	On-going
PI	Continue participating in the Project Impact Outreach Project Strategy for the Community Rating System. Participate in the Program for Public Information (PPI) see Section VI – D for details	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	On-going
PP	Accelerate agency's Hazard Tree identification program. Identify and remove problem tress	City of North Charleston Parks and Recreation	General Fund	Preserve environmental resources; minimize future hurricane damage	2	On-going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PP	Seek funding to retrofit facilities for enhanced hazard resistance, if funding becomes available and suitable projects are identified.	City of North Charleston Parks and Recreation	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1	On-going
NB	Increase emphasis in re-cycling at all CRPPC facilities. Install re-cycling containers, drop off locations, etc.	City of North Charleston Parks and Recreation	General fund	Reduce waste taken to landfills.	2	On-going
PA	Develop procedures to protect computer equipment and records.	City of North Charleston Parks and Recreation	General fund	Maintain employees support (ie: payroll, medical, etc.) and all revenue generating services.	2	On-going
NB	Maintain and/or re-establish natural vegetation in selected zones within park areas.	City of North Charleston Parks and Recreation	General fund	Decreased use of pesticides, improved water retention, drainage, improved drought and disease resistance, better hazard survival, and improved wildlife habitats.	2	On-going
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	On-going

7.23 – James Island Public Service District Commission

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
JAMES ISLAND PUBLIC SERVICE DISTRICT**

Resolution No. 13-02

WHEREAS the James Island Public Service District (District) has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

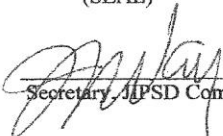
WHEREAS the District originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the District to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the District, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Commission of the District.

Effective this 28th, Day of October, 2013

(SEAL)



Secretary, JIPSD Commission



Vice Chair, JIPSD Commission

Action Plan for James Island Public Service District

Following are the proposed projects to be undertaken in the James Island Public Service District for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management (including the one-foot freeboard, cumulative substantial improvement clause, and/or other provisions deemed necessary to enhance Community Rating System credits).	Charleston County Building Inspection Services	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
PA	Continue to provide coordination of County stormwater management regulations	Charleston County Planning Public Works	General Fund	Improve water quality; 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
PA	Continue enforcement of zoning regulations, including the low density zoning provisions of the Zoning and Land Development Regulations.	Charleston County 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
PA	Continue providing information to citizens regarding the propane tank anchoring	Charleston County Building Inspection Services	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
PA	Continue enforcing regulations requiring new manufactured homes brought into Charleston County to be	Chas. County Building	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1

	constructed to wind zone 2 requirements as required per State law.	Inspection Services			
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.	Chas. County Building Inspection Services	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
PP	Promote the use of voluntary standards for single-family residences to exceed minimal building code requirements for wind and seismic design.	Chas. County Building Inspection Services	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	2
PP	Promote standards for existing homes to be retrofitted to that exceed minimal codes.	Chas. County Building Inspection Services	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
PP	Support providing information to citizens regarding hazard safe interior rooms	Chas. County Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2
PP	Support demolition of structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	Grants Admin.	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
PP	Give support to seek funding for retrofitting, demolishing or relocating repetitively flooded properties if suitable candidates can be identified.	Chas. County Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1
ES	Continue hazardous material training	James Island Public Service District Office of Safety Director and Fire Department	General and Proprietary Fund	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	1

				between public, private and non-profit sectors to enhance response for hazard events.	
ES	Continue Terrorist Response Training	Charleston County Hazardous Materials Coordinator; James Island Public Service District Fire Department	General Fund	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
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event	Chas. County Emergency Preparedness ; James Island Public Service District	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
ES	Continue responding to hazard emergencies	EMS, Fire Departments , Sheriff Department, Haz. Mat. Coordinator, Emergency Preparedness	General Fund Enterprise 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
ES	Support requirement for construction practices for new James Island PSD-owned critical facilities that are sensitive to flood zone (e.g. avoiding "A" and "V" flood zones where feasible) and seismic considerations.	Capital Projects James Island Public Service District	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 earthquake damage; minimize future hurricane damage	1
ES	Evaluate existing James Island PSD-owned facilities for hazard resistance and retrofit facilities if needed where feasible.	James Island Public Service District	General Fund/ Grant Funding	Protecting lives of citizens from natural and man-made hazards; reducing vulnerability of infrastructure and built-environment to	2

			/ Bond Funding	hazards; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage	
ES	Sponsor training programs for medical providers on topics of interest such as decontamination procedures, etc. if there is interest in these programs.	Chas. County Hazardous Materials Coordinator; James Island Public Service District Fire Department	General Fund	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
ES	Maintain the National Weather Service "Storm Ready Community" designation	Emergency Preparedness ; James Island Public Service District	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
ES	Continue coordinating the Anti- Terrorism Task Force of specially trained police, fire and EMS personnel to respond to terrorist acts.	Chas. County Hazardous Materials Coordinator; James Island Public Service District Fire Department	Grant Funding / General Fund	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
SP	Support distribution of a generator safety brochure to interested generator retail outlets, utility companies and the general public	Chas. County Building Services	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
PI	Continue providing hazard-related literature/information to citizens at James Island Public Service District Office.	James Island Public Service District	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	2

				<p>earthquake damage; minimize future tornado-related loss of life; minimize future hurricane damage; minimize future terrorist activity incidents</p>	
PI	<p>Sponsor a Fire Prevention Week, including information on Hazard Awareness, and assist other communities in participating in this activity.</p>	<p>James Island Public Service District Fire Department</p>	<p>General Fund</p>	<p>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</p>	<p>2</p>
PI	<p>Assist with outreach initiatives to the small business community to encourage businesses to prepare for hazard events.</p>	<p>Chas. County Building Inspection Services/ Project Impact Partners</p>	<p>Project Impact resources</p>	<p>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</p>	<p>2</p>
PI	<p>Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.</p>	<p>Building Inspection Services/ Project Impact committee members</p>	<p>General Fund</p>	<p>Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability</p>	<p>1</p>

Additional Recommended Projects may be added to this project list as the Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

Status Report for James Island Public Service District

Following are the proposed projects to be undertaken in the James Island Public Service District for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA	Continue enforcement of the International series Building-related and Fire codes and the floodplain management (including the one foot freeboard, cumulative substantial improvement clause, and/or other provisions deemed necessary to enhance Community Rating System credits).	Charleston County Building Inspection Services	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	Continuing
PA	Continue to provide coordination of County stormwater management regulations	Charleston County Planning Public Works	General Fund	Improve water quality; 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	Continuing
PA	Continue enforcement of zoning regulations, including the low density zoning provisions of the Zoning and Land Development Regulations.	Charleston County 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	Continuing
PA	Continue providing information to citizens regarding the propane tank anchoring	Charleston County Building Inspection Services	General Fund/ Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage;	2	Continuing

				minimize future earthquake damage		
PA	Continue enforcing regulations requiring new manufactured homes brought into Charleston County to be constructed to wind zone 2 requirements as required per State law.	Chas. County Building Inspection Services	General Fund	Minimize future hurricane damages; protecting lives of citizens from natural and man-made hazards	1	Continuing
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.	Chas. County Building Inspection Services	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	Continuing
PP	Promote the use of voluntary standards for single-family residences to exceed minimal building code requirements for wind and seismic design.	Chas. County Building Inspection Services	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; preserve environmental resources; educating citizens regarding vulnerability to hazards and steps to reduce vulnerability	2	Continuing
PP	Promote standards for existing homes to be retrofitted to that exceed minimal codes.	Chas. County Building Inspection Services	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	Continuing
PP	Support providing information to citizens regarding hazard safe interior rooms	Chas. County Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability	2	Continuing
PP	Support demolition of structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	Grants Admin.	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	Continuing

PP	Give support to seek funding for retrofitting, demolishing or relocating repetitively flooded properties if suitable candidates can be identified.	Chas. County Building Inspection Services	Grant Funding	Reduce existing flood damage; minimize future flood damage; preserve historic building inventory; reducing vulnerability of built-environment to hazards	1	Continuing
ES	Continue hazardous material training	James Island Public Service District Office of Safety Director and Fire Department	General and Proprietary Fund	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	Continuing Annual Training of all personnel
ES	Continue Terrorist Response Training	Charleston County Hazardous Materials Coordinator; James Island Public Service District Fire Department	General Fund	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	Continuing Annual training of all personnel
ES	Continue coordinating Emergency Operations Center activities in the event of a hazard event	Chas. County Emergency Preparedness ; James Island Public Service District	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	Continuing

ES	Continue responding to hazard emergencies	EMS, Fire Departments, Sheriff Department, Haz. Mat. Coordinator, Emergency Preparedness	General Fund Enterprise 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	Continuing
ES	Support requirement for construction practices for new James Island PSD-owned critical facilities that are sensitive to flood zone (e.g. avoiding "A" and "V" flood zones where feasible) and seismic considerations.	Capital Projects James Island Public Service District	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 earthquake damage; minimize future hurricane damage	1	Continuing
ES	Evaluate existing James Island PSD-owned facilities for hazard resistance and retrofit facilities if needed where feasible.	James Island Public Service District	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	2	Continuing Annual Inspections of all facilities for safety and hazard awareness
ES	Sponsor training programs for medical providers on topics of interest such as decontamination procedures, etc. if there is interest in these programs.	Chas. County Hazardous Materials Coordinator; James Island Public Service District Fire Department	General Fund	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	Continuing
ES	Continue working to attain resources and to provide training for maritime fire fighting through the Marine Assistance Pact.	Chas. County Hazardous Materials Coordinator; James Island Public	Grant Funding / General Fund	Protecting the lives of citizens from man-made hazards; Establishing cooperative relationships between the public, private, and non-profit sectors to enhance preparedness	1	<u>Discontinued</u>

		Service District Fire Department		and response for hazard events; Minimize future hazardous materials incidents; minimize future terrorist activity incidents; promote long-term economic prosperity		
ES	Maintain the National Weather Service "Storm Ready Community" designation	Emergency Preparedness ; James Island Public Service District	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	Continuing
ES	Continue coordinating the Anti- Terrorism Task Force of specially trained police, fire and EMS personnel to respond to terrorist acts.	Chas. County Hazardous Materials Coordinator; James Island Public Service District Fire Department	Grant Funding / General Fund	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	Continuing
SP	Support distribution of a generator safety brochure to interested generator retail outlets, utility companies and the general public	Chas. County Building Services	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	Continuing
PI	Continue providing hazard-related literature/information to citizens at James Island Public Service District Office.	James Island Public Service District	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce	2	Continuing Public Contact at various public education events

				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		throughout the year. New equipment procured to train the public in fire extinguisher use
PI	Sponsor a Fire Prevention Week, including information on Hazard Awareness, and assist other communities in participating in this activity.	James Island Public Service District Fire Department	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	Continuing Annual public event in October
PI	Assist with outreach initiatives to the small business community to encourage businesses to prepare for hazard events.	Chas. County Building Inspection Services/ Project Impact Partners	Project Impact resources	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	Continuing
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	Continuing

Additional Recommended Projects may be added to this project list as the Disaster Resistant Communities committees consider other projects and recommend these projects for implementation.

7.24 - Mt. Pleasant Water Works Commission

Resolution for Adoption

STATE OF SOUTH CAROLINA)
)
COUNTY OF CHARLESTON)

RESOLUTION NO. 09-2013

A RESOLUTION TO RE-ADOPT THE CHARLESTON REGIONAL HAZARD MITIGATION PLAN.

WHEREAS, the Commissioners of Public Works of the Town of Mount Pleasant, South Carolina (the "Commission") have experienced the effects of natural and man-made hazard events; and

WHEREAS, the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended Charleston Regional Hazard Mitigation Plan; and

WHEREAS, the recommended Charleston Regional Hazard Mitigation Plan has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and


WHEREAS, the Commission originally adopted the Charleston Regional Hazard Mitigation Plan in 2004 and readopted it in 2008, and are required to adopt the amended version of this plan on a five-year cycle for the Commission to remain eligible for certain Federal programs in which Charleston County participates; and

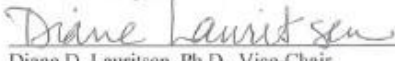
NOW, THEREFORE, BE IT RESOLVED, that

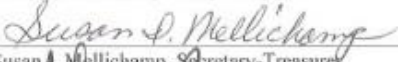
1. The Charleston Regional Hazard Mitigation Plan is hereby adopted as an official plan of the Commission; and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Charleston County Council.

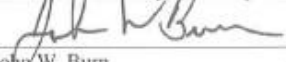
DONE AND RATIFIED THIS 18th day of November, 2013.

MOUNT PLEASANT WATERWORKS



Rick M. Crosby, Chair


Diane D. Lauritsen, Ph.D., Vice-Chair


Susan A. Mellichamp, Secretary-Treasurer


John W. Burn


H. Mac Jenkinson



Linda Page, Mayor, Town of Mount Pleasant



Mark Smith, Chair, Town of Mount Pleasant Water
Supply Committee

ATTEST:



Clay Duffie, General Manager

Date: November 18, 2013

Action Plan for Mount Pleasant Waterworks

(Commissioners of Public Works for the Town of Mount Pleasant)

Following are the proposed projects to be undertaken/ continued within the Mount Pleasant Waterworks (MPW) service area for hazard mitigation during 2017-2018

(Abbreviations for “Type” are as follows: “PA” is Preventive Activities, “PP” is Property Protection Activities, “NB” is Natural and Beneficial Functions/Resource Preservation Activities, “ES” is Emergency Services Activities, “SP” is Structural Projects Activities, and “PI” is Public Information Activities, “GIS” is Geographic Information Systems Activities.)

Type	Activity	Lead Dept.	Funding Source	Goal(s) Addressed	Priority (1 highest, 4 lowest)
PA PP ES	Continue to maintain and expand SCADA capabilities throughout critical areas of our water and wastewater systems.	Instrumentation & Electrical	Operating Funds	Improve detection and rapid notification of abnormal conditions	2
PA PP ES	Continue installing pressure sensors and water quality sensors & transmitters, linked to SCADA, throughout the water system as needed.	Instrumentation & Electrical	Capital Funds	Improve detection and rapid notification of abnormal conditions	3
ES	Continue installing emergency generators at critical locations as needed.	Instrumentation & Electrical	Capital Funds	Improve ability to respond to natural and man-made emergencies	3
PP ES	Continue installing new Fire Hydrants in locations determined to be deficient by the Fire Department and/or in new areas of our Distribution System.	Engineering	Capital Funds	Protect the lives and property of our citizens	3
GIS	Continue physically locating, exercising, and GPS locating all isolation valves in the water distribution system.	Engineering, Water Quality	Capital Funds	Improve ability to respond to natural and man-made emergencies	2
ES	Continue Emergency Management training, drills, and exercises for all departments within the organization.	Technical Services	Operating Funds	Improve ability to prepare for and respond to natural and man-made emergencies	2
PP	Continue assessing the potential risks to MPW facilities from both natural and man-made disasters; mitigate probability and severity where possible and feasible.	Technical Services	Operating Funds	Reduce the likelihood and/or severity of disaster effects on MPW	3
PI	Maintain and utilize a “Reverse 911” style outbound notification system to enable rapid notification of our customers and surrounding community.	Technical Services, Communications	Operating Funds	Improve ability to make rapid mass public notifications	3
PI	Continue participating in the Project Impact Outreach Program for Public Information (PPI) to achieve maximum public outreach.	Technical Services, Communications	Operating Funds	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

Additional projects may be added to this project list as the MPW Emergency Management Specialist considers other projects and recommends them for implementation.

Status Report for Mount Pleasant Waterworks

(COMMISSIONERS OF PUBLIC WORKS FOR THE TOWN OF MOUNT PLEASANT)

FOLLOWING ARE THE PROPOSED PROJECTS TO BE UNDERTAKEN/CONTINUED WITHIN THE MOUNT PLEASANT WATERWORKS (MPW) SERVICE AREA FOR HAZARD MITIGATION DURING 2016-2017 AND THEIR STATUS THROUGH APRIL OF 2017.

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Dept.	Funding Source	Goal(s) Addressed	Priority (1 highest, 4 lowest)	Status
PA PP ES	Continue to maintain and expand SCADA capabilities throughout critical areas of our water and wastewater systems.	Process Control Systems	Operating Funds	Improve detection and rapid notification of abnormal conditions	2	Ongoing
PA PP ES	Continue installing pressure sensors and water quality sensors & transmitters, linked to SCADA, throughout the water system as needed.	Process Control Systems	Capital Funds	Improve detection and rapid notification of abnormal conditions	3	Ongoing
ES	Continue installing emergency generators at critical locations as needed.	Electrical	Capital Funds	Improve ability to respond to natural and man-made emergencies	3	Ongoing
PP ES	Continue installing new Fire Hydrants in locations determined to be deficient by the Fire Department and/or in new areas of our Distribution System.	Engineering	Capital Funds	Protect the lives and property of our citizens	3	Ongoing
GIS	Continue physically locating, exercising, and GPS locating all isolation valves in the water distribution system.	Engineering, Water Quality	Capital Funds	Improve ability to respond to natural and man-made emergencies	2	Ongoing
ES	Continue Emergency Management training, drills, and exercises for all departments within the organization.	Safety, Security & Emergency Management	Operating Funds	Improve ability to prepare for and respond to natural and man-made emergencies	2	Ongoing
PP	Continue assessing the potential risks to MPW facilities from both natural and man-made disasters; mitigate probability and severity where possible and feasible.	Safety, Security & Emergency Management	Operating Funds	Reduce the likelihood and/or severity of disaster effects on MPW	3	Ongoing
PI	Maintain and utilize a "Reverse 911" style outbound notification system to enable rapid notification of our customers and surrounding community.	Public Information	Operating Funds	Improve ability to make rapid mass public notifications	3	Ongoing
PI	Continue participating in the Project Impact Outreach Program for Public Information (PPI) to achieve maximum public outreach.	Building Services/ Project Impact committee members	Operating Funds	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	Basic emergency preparedness messages were communicated via our On-Hold Messages, Customer Newsletters, and our public Website throughout the period.

Additional projects may be added to this project list as the MPW Emergency Management Specialist considers other projects and recommends them for implementation.

7.25 – North Charleston District

Resolution for Adoption

RESOLUTION 2013-17

A RESOLUTION FOR THE ADOPTION OF THE REVISED *CHARLESTON REGIONAL HAZARD MITIGATION PLAN* BY THE NORTH CHARLESTON DISTRICT

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the North Charleston District originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the District to remain eligible for certain Federal programs in which Charleston County participates, and


NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the North Charleston District, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the North Charleston District and its Commission.

The Chairman declared this Resolution duly adopted this 14th day of October, 2013.


Gary C. McJunkin, Chairman

Attest:


Sylderrial T. Pryor, Secretary

Action Plan for the North Charleston District

The North Charleston District is a public service district located in Charleston County, SC. Due to the small population, we contract with the City of North Charleston to perform many of our services. The North Charleston Sewer District also provides building services for the District owned facilities on an as needed basis.

The following are proposed projects to be undertaken/ continued in the North Charleston District for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, "PI" is Public Information Activities, and "GIS" is Geographic Information System Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>
PA	Support adoption of voluntary standards for single family residences to exceed minimal building code requirements for wind and seismic design.	Administration	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protecting lives of citizens from natural and man-made hazards.	2
PA	Support the City of North Charleston Stormwater utility program.	Administration	Self Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve water quality.	1
PP	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties.	Administration	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve historic buildings inventory; reducing vulnerability of built-environment to hazard.	1
PP	Support demolition of structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	Administration	Grant Funding	Reduce existing flood damage; promote long-term economic prosperity; encourage recreational activities; minimize future hurricane damage; minimize future flood damage; reducing vulnerability of infrastructure to hazards	3
PP	Seek funding for retrofitting critical facilities to enhanced hazard resistance if funding sources become available.	Administration	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; promote long term economic prosperity.	1
NB	Continue support for maintaining permanent open space as parks.	Administration	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages.	2
NB	Continue support of Charleston County and City of North Charleston tree protection/landscaping ordinance.	Administration	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages.	2

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority</i> (1-highest, 4-lowest)
ES	Continue membership in the Local Emergency Planning Commission which supports the Charleston County Emergency Plan.	Commission Chairman	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 take to reduce vulnerability; preserve environmental resources; promote long-term economic prosperity.	1
ES	Work with local jurisdictions to form an Anti-Terrorism Task Force of specially trained police, fire and EMS personnel to respond to terrorist acts.	Administration	General Fund	Protecting lives of citizens from natural 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
SP	Include construction practices that are sensitive to flood, seismic and hurricane considerations on all new or upgraded facilities.	Administration	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	2
SP	Participate in the Drainage Awareness Campaign developed by Project Impact.	Administration	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage.	2
PI	Support "Building Safety Week".	Administration	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps 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

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority</i> (1-highest, 4-lowest)
PI	Provide speakers to civic groups regarding District operations.	Administration	General Fund	Protecting the lives of citizens from man-made hazards; educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	3
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

The North Charleston District shall, through Project Impact, provide support to the many activities and projects that will benefit the residents of the NCD. Additional recommended projects may be added to this project list as other projects are recommended to North Charleston District Commission. Some Projects that are being undertaken by other jurisdictions may not necessarily be listed here but may affect the North Charleston District.

Status Report for the North Charleston District

The North Charleston District is a public service district located in Charleston County, SC. Due to the small population, we contract with the City of North Charleston to perform many of our services. The North Charleston Sewer District also provides building services for the District owned facilities on an as needed basis.

The following are proposed projects to be undertaken/ continued in the North Charleston District for hazard mitigation during 2016-2017 and their status through May 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, "PI" is Public Information Activities, and "GIS" is Geographic Information System Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>	<i>Status</i>
PA	Support adoption of voluntary standards for single family residences to exceed minimal building code requirements for wind and seismic design.	Administration	General Fund	Minimize future flood damage; minimize future earthquake damage; minimize future hurricane damage; protecting lives of citizens from natural and man-made hazards.	2	On-going
PA	Support the City of North Charleston Stormwater utility program.	Administration	Self Funding	Minimize future flood damage; reduce existing flood damage; preserve environmental resources; improve water quality.	1	On-going
PP	Seek funding for retrofitting, demolishing or relocating repetitively flooded properties.	Administration	Grant Funding	Minimize future flood damage; reduce existing flood damage; preserve historic buildings inventory; reducing vulnerability of built-environment to hazard.	1	On-going
PP	Support demolition of structures posing a threat to public safety, considering location within the special flood hazard area as a prioritization factor.	Administration	Grant Funding	Reduce existing flood damage; promote long-term economic prosperity; encourage recreational activities; minimize future hurricane damage; minimize future flood damage; reducing vulnerability of infrastructure to hazards	3	On-going
PP	Seek funding for retrofitting critical facilities to enhanced hazard resistance if funding sources become available.	Administration	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; promote long term economic prosperity.	1	On-going
NB	Continue support for maintaining permanent open space as parks.	Administration	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages.	2	On-going

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>	<i>Status</i>
NB	Continue support of Charleston County and City of North Charleston tree protection/landscaping ordinance.	Administration	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities; minimize future flood damages.	2	On-going
ES	Continue membership in the Local Emergency Planning Commission which supports the Charleston County Emergency Plan.	Commission Chairman	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 take to reduce vulnerability; preserve environmental resources; promote long-term economic prosperity.	1	On-going
ES	Work with local jurisdictions to form an Anti-Terrorism Task Force of specially trained police, fire and EMS personnel to respond to terrorist acts.	Administration	General Fund	Protecting lives of citizens from natural 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	On-going
SP	Include construction practices that are sensitive to flood, seismic and hurricane considerations on all new or upgraded facilities.	Administration	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	2	On-going
SP	Participate in the Drainage Awareness Campaign developed by Project Impact.	Administration	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage.	2	On-going

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>	<i>Status</i>
PI	Support “Building Safety Week”.	Administration	General Fund	Protecting the lives of citizens from natural hazards; educating citizens regarding their vulnerability to natural hazards and steps 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	On-going
PI	Provide speakers to civic groups regarding District operations.	Administration	General Fund	Protecting the lives of citizens from man-made hazards; educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	3	On-going
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	On-going

The North Charleston District shall, through Project Impact, provide support to the many activities and projects that will benefit the residents of the NCD. Additional recommended projects may be added to this project list as other projects are recommended to North Charleston District Commission. Some Projects that are being undertaken by other jurisdictions may not necessarily be listed here but may affect the North Charleston District.

7.26 – North Charleston Sewer District

Resolution for Adoption

RESOLUTION 2013-16

A RESOLUTION FOR THE ADOPTION OF THE REVISED *CHARLESTON REGIONAL HAZARD MITIGATION PLAN* BY THE NORTH CHARLESTON SEWER DISTRICT

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the North Charleston Sewer District originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Sewer District to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the North Charleston Sewer District, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the North Charleston Sewer District and its Commission.

The Chairman declared this Resolution duly adopted this 14th day of October, 2013.


Gary C. McJurkin, Chairman

Attest:

Sylderrial T. Pryor, Secretary

Action Plan for the North Charleston Sewer District

**The North Charleston Sewer District is located in Charleston County, SC.
The following are proposed projects to be undertaken/continued in the North
Charleston Sewer District for hazard mitigation during 2017-2018**

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, "PI" is Public Information Activities, and "GIS" is Geographic Information System Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>
PA	Continue enforcement of the Sewer Disposal Use Resolution.	Administrative Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards.	1
PA	Continue enforcing regulation requiring new manholes to be elevated above the 50 year flood elevation.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards.	1
PA	Implement cMOM	Systems Division	General Fund	Minimize the potential for sanitary sewer system overflows	1
PA	Continue reduction of Inflow and Infiltration (I&I) into the treatment system.	Capital Projects	General Fund	Minimize the potential for sanitary sewer overflows (SSOs), maximize WWTP treatment capacity.	1
PP	Continue to discourage connection to the sewer system of buildings where the lowest floor of the building is at an elevation lower than one (1) foot above the top of the next upstream manhole.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards.	1
PP	Seek funding for retrofitting critical facilities to enhance hazard resistance if funding sources become available.	Systems Division	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; promote long term economic prosperity.	1
PP	Continue providing information to citizens about hazard of improper grease disposal.	Industrial Pretreatment	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards.	2
NB	Continue support of the SC Water Quality Association.	Administrative Division	General Fund	Preserve environmental resources; promote long term economic prosperity; encourage recreational activities.	2
NB	Continue support of the Cooper River Water Users Association.	Systems Division	General Fund	Preserve environmental resources; promote long term economic prosperity; encourage recreational activities.	2

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority</i> <i>(1-highest, 4-lowest)</i>
ES	Continue to provide hazard communication, anti-terrorism, and emergency preparedness training to employees.	Systems Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	1
ES	Continue to provide Designated First Aid Response Team and associated supplies at the Stall Road and Herbert Street facilities.	Systems Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	2
ES	Continue the Process Safety Management and Risk Management Programs.	Plant Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	1
ES	Continue to provide visitors and contractors hazard materials orientation at the Herbert Street facility.	Plant Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	1
ES	Continue to include contractor and visitor safety program as part of our construction contracts.	System Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	1
ES	Continue to attend LEPC meetings and emergency response exercises.	System Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	2
ES	Continue to host LEPC sponsored emergency response exercises.	Plant Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	2

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>
SP	Include construction practices that are sensitive to flood, seismic and hurricane considerations on all facility upgrade projects.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	2
SP	Continue to use manhole inserts in flood prone areas.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	3
SP	Continue to use submersible or dry pit submersible pumps for new or upgraded pump stations.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	2
PI	Continue fats, oils, and grease (FOG) public education program.	Industrial Pretreatment	General Fund	Educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	2
PI	Continue providing annual report to citizens.	Administrative Division	General Fund	Educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	2
PI	Continue to provide speakers to civic groups regarding sewer district operations.	Administrative Division	General Fund	Protecting the lives of citizens from man-made hazards; educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	3
PI	Continue to maintain NCSD web page.	Administrative Division	General Fund	Educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	3
GIS	Continue to update the GIS System	Capital Projects	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	3
GIS	Integrate GIS System with other NCSD engineering and business systems	Capital Projects	General Fund	Improve efficiency between departments and decrease response time to hazards.	3

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority</i> <i>(1-highest, 4-lowest)</i>
PI	Educate citizens about proper disposal of unwanted medicine	Industrial Pretreatment	General Fund	Unwanted and expired medicine may be a risk to human health and the Environment if disposed of improperly	2
PI	Educate citizens about improper disposal of garbage into sewer system	Industrial Pretreatment	General Fund	Educate citizens regarding their vulnerability to man-made hazards and take steps to reduce vulnerability.	2
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1
PI	Continue to implement fats, oils, and grease initiative.	Industrial Pretreatment	General Fund	Educate citizens and food service establishments regarding the proper disposal of fats, oils, and grease	2

The North Charleston Sewer District shall, through Project Impact, provide support to the many activities and projects that will benefit the residents of the NCSD. Additional recommended projects may be added to this project list as other projects are recommended to the North Charleston Sewer District Commission. Some Projects that are being undertaken by other jurisdictions may not necessarily be listed here but may affect the North Charleston Sewer District.

Status Report for the North Charleston Sewer District

**The North Charleston Sewer District is located in Charleston County, SC.
The following are proposed projects to be undertaken/ continued in the North
Charleston Sewer District for hazard mitigation during 2016-2017 and their status
through May2017**

(Abbreviations for “Type” are as follows: “PA” is Preventive Activities, “PP” is Property Protection Activities, “NB” is Natural and Beneficial Functions/Resource Preservation Activities, “ES” is Emergency Services Activities, “SP” is Structural Projects Activities, “PI” is Public Information Activities, and “GIS” is Geographic Information System Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>	<i>Status</i>
PA	Continue enforcement of the Sewer Disposal Use Resolution.	Administrative Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards.	1	On-going
PA	Continue enforcing regulation requiring new manholes to be elevated above the 50 year flood elevation.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards.	1	On-going
PA	Implement cMOM	Systems Division	General Fund	Minimize the potential for sanitary sewer system overflows	1	On-going
PA	Continue reduction of Inflow and Infiltration (I&I) into the treatment system.	Capital Projects	General Fund	Minimize the potential for sanitary sewer overflows (SSOs), maximize WWTP treatment capacity.	1	On-going
PP	Continue to discourage connection to the sewer system of buildings where the lowest floor of the building is at an elevation lower than one (1) foot above the top of the next upstream manhole.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards.	1	On-going
PP	Seek funding for retrofitting critical facilities to enhance hazard resistance if funding sources become available.	Systems Division	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; promote long term economic prosperity.	1	On-going
PP	Continue providing information to citizens about hazard of improper grease disposal.	Industrial Pretreatment	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards.	2	On-going
NB	Continue support of the SC Water Quality Association.	Administrative Division	General Fund	Preserve environmental resources; promote long term economic prosperity; encourage recreational activities.	2	On-going
NB	Continue support of the Cooper River Water Users Association.	Systems Division	General Fund	Preserve environmental resources; promote long term economic prosperity; encourage recreational activities.	2	On-going

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority</i> <i>(1-highest, 4-lowest)</i>	<i>Status</i>
ES	Continue to provide hazard communication, anti-terrorism, and emergency preparedness training to employees.	Systems Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	1	On-going
ES	Continue to provide Designated First Aid Response Team and associated supplies at the Stall Road and Herbert Street facilities.	Systems Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	2	On-going
ES	Continue the Process Safety Management and Risk Management Programs.	Plant Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	1	On-going
ES	Continue to provide visitors and contractors hazard materials orientation at the Herbert Street facility.	Plant Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	1	On-going
ES	Continue to include contractor and visitor safety program as part of our construction contracts.	System Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	1	On-going
ES	Continue to attend LEPC meetings and emergency response exercises.	System Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	2	On-going
ES	Continue to host LEPC sponsored emergency response exercises.	Plant Division	General Fund	Protecting lives of our citizens from man-made hazards; minimize future hazardous materials incidents; preserve environmental resources; assessing vulnerability to man-made hazards.	2	On-going

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority (1-highest, 4-lowest)</i>	<i>Status</i>
SP	Include construction practices that are sensitive to flood, seismic and hurricane considerations on all facility upgrade projects.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	2	On-going
SP	Continue to use manhole inserts in flood prone areas.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	3	On-going
SP	Continue to use submersible or dry pit submersible pumps for new or upgraded pump stations.	Systems Division	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	2	On-going
PI	Continue fats, oils, and grease (FOG) public education program.	Industrial Pretreatment	General Fund	Educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	2	On-going
PI	Continue providing annual report to citizens.	Administrative Division	General Fund	Educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	2	On-going
PI	Continue to provide speakers to civic groups regarding sewer district operations.	Administrative Division	General Fund	Protecting the lives of citizens from man-made hazards; educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	3	On-going
PI	Continue to maintain NCSD web page.	Administrative Division	General Fund	Educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	3	On-going
GIS	Continue to update the GIS System	Capital Projects	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long term economic growth.	3	On-going
GIS	Integrate GIS System with other NCSD engineering and business systems	Capital Projects	General Fund	Improve efficiency between departments and decrease response time to hazards.	3	On-going

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) Addressed</i>	<i>Priority</i> <i>(1-highest, 4-lowest)</i>	<i>Status</i>
PI	Educate citizens about proper disposal of unwanted medicine	Industrial Pretreatment	General Fund	Unwanted and expired medicine may be a risk to human health and the Environment if disposed of improperly	2	On-going
PI	Educate citizens about improper disposal of garbage into sewer system	Industrial Pretreatment	General Fund	Educate citizens regarding their vulnerability to man-made hazards and take steps to reduce vulnerability.	2	On-going
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	On-going
PI	Continue to implement fats, oils, and grease initiative.	Industrial Pretreatment	General Fund	Educate citizens and food service establishments regarding the proper disposal of fats, oils, and grease	2	On-going

The North Charleston Sewer District shall, through Project Impact, provide support to the many activities and projects that will benefit the residents of the NCSD. Additional recommended projects may be added to this project list as other projects are recommended to the North Charleston Sewer District Commission. Some Projects that are being undertaken by other jurisdictions may not necessarily be listed here but may affect the North Charleston Sewer District.

7.27 – Roper St. Francis

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
Roper St. Francis Healthcare, Charleston, SC**

WHEREAS Roper St. Francis Healthcare (also known as Roper St. Francis), a not-for-profit healthcare system consisting of three acute care critical facilities (Roper Hospital, St. Francis Hospital, and Mount Pleasant Hospital) located in Charleston County, has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *PI Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal regional and local government agencies, with support being given by those reviewers; and

WHEREAS Roper St. Francis originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, and again in 2008, and is required to adopt the amended version of the *Charleston Regional Hazard Mitigation Plan* on a five-year cycle for Roper St. Francis to remain eligible for certain Federal programs in which Roper St. Francis participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan as part of hazard mitigation planning of Roper St. Francis Healthcare system; and
2. The *Charleston Regional Hazard Mitigation Project Committee* is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and with periodically reporting on progress towards and revisions to the plan to the Emergency Management Committee of Roper St. Francis, led by the Roper St. Francis Emergency Planning Manager under the direction of Vice President of Medical Affairs.

Effective this 17th Day of August, 2015



Steven Shapiro, MS, DMD, MD
Vice President of Medical Affairs and Chief Medical Officer

Action Plan for Roper St. Francis

Following are the proposed projects to be undertaken/continued within Roper St. Francis, this plan is guided annually by the Hazard Vulnerability Assessment, with intentions to guide hazard mitigation(s) planning for 2016-2017.

(Abbreviations for “Type” are as follows: “PA” is Preventive Activities, “PP” is Property Protection Activities, “NB” is Natural and Beneficial Functions/Resource Preservation Activities, “ES” is Emergency Services Activities, “SP” is Structural Projects Activities, “PI” is Public Information Activities, and “GIS” is Geographic Information System Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source(s)</i>	<i>Goal(s) Addressed</i>	<i>Priority (1=highest, 4=lowest)</i>
Property Protection Activities	Obtain funding for retrofitting existing utilities to meet the shelter in place criteria, as mandated by SC DHEC.	Grant Services, Engineering, Emergency Management	Grant, Capital Investment	Maintain essential services during austere events. Protect lives of our patients from natural and man-made disasters.	1
Preventive Activities	Continuation of educational trainings in relation to disaster preparedness in healthcare facilities, for staff/community members.	Emergency Management	Emergency Management Budget	Educational Training, Preparedness Initiatives, Business Continuity of Operations	2
Emergency Services Activities, Preventive Activities	Potable water equipment for water outages / boil water advisories	Emergency Management, Engineering	Emergency Management Budget, Engineering Budget, Capital Investment	Allow for continuation of vital services during austere events. Protect patients and staff, during austere events.	1
Public Information Activities	Mass Notification Alert Systems	Emergency Management, Corporate Communications	Emergency Management Budget, General Fund	Allow for simultaneous notification of all staff/visitors of austere events, or life safety events.	1
Preventive Activities, Property Protection Activities	Future Building Planning	Engineering, Information Services, Leadership, Emergency Management	General Fund, Capital Investment	Continuations of building review/planning to minimize impact from naturally occurring and man-made austere events.	2
Preventive Activities, Emergency Service Activities	Disaster Planning / Preparedness	Emergency Management, All Departments	Emergency Management Fund, General Fund	Continuous identification, prevention, mitigation, preparedness, response and recovery efforts for austere events that may affect our patients.	1
Emergency Services Activities	Emergency Preparedness Coordination with External Agencies	Emergency Management	General Fund, Emergency Management Fund	Continually coordinate with external agencies for planning, exercise,	1

				and preparedness initiatives.	
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Status Report for Roper St. Francis

The following are proposed projects to be undertaken/ continued by Roper St. Francis for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, "PI" is Public Information Activities, and "GIS" is Geographic Information System Activities.)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source(s)</i>	<i>Goal(s) Addressed</i>	<i>Priority (1=highest, 4=lowest)</i>	<i>Status</i>
Property Protection Activities	Obtain funding for retrofitting existing utilities to meet the shelter in place criteria, as mandated by SC DHEC.	Grant Services, Engineering, Emergency Management	Grant, Capital Investment	Maintain essential services during austere events. Protect lives of our patients from natural and man-made disasters.	1	Phase 1 of grant received. Solicitation for design services imminent.
Preventive Activities	Continuation of educational trainings in relation to disaster preparedness in healthcare facilities, for staff/community members.	Emergency Management	Emergency Management Budget	Educational Training, Preparedness Initiatives, Business Continuity of Operations	2	Multiple trainings held, training is on-going. Community and internal exercises continually being conducted
Emergency Services Activities, Preventive Activities	Potable water equipment for water outages / boil water advisories	Emergency Management, Engineering	Emergency Management Budget, Engineering Budget, Capital Investment	Allow for continuation of vital services during austere events. Protect patients and staff, during austere events.	1	Water loss plan and mitigation measures approved. Fixed external water connections in place at all three hospitals. Plan expansion and additions completed
Public Information Activities	Mass Notification Alert Systems	Emergency Management, Corporate Communications	Emergency Management Budget, General Fund	Allow for simultaneous notification of all staff/visitors of austere events, or life safety events.	1	Everbridge mass notification system was implemented for RSF. System includes internal and external communication templates for immediate notification of needed parties in austere events. System tested monthly
Preventive Activities,	Future Building Planning	Engineering, Information Services, Leadership,	General Fund, Capital Investment	Continuations of building review/planning to minimize	2	On-going, committee review.

Property Protection Activities		Emergency Management		impact from naturally occurring and man-made austere events.		
Preventive Activities, Emergency Service Activities	Disaster Planning / Preparedness	Emergency Management, All Departments	Emergency Management Fund, General Fund	Continuous identification, prevention, mitigation, preparedness, response and recovery efforts for austere events that may affect our patients.	1	On-going, 2017 HVA completed for facility. Regional healthcare HVA completed in conjunction with SC DHEC.
Emergency Services Activities	Emergency Preparedness Coordination with External Agencies	Emergency Management	General Fund, Emergency Management Fund	Continually coordinate with external agencies for planning, exercise, and preparedness initiatives.	1	Regularly attend county, regional, and state meetings.

7.28 – St. Andrews Parish Park & Recreation Commission

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
St. Andrew's Parish Parks & Playground Commission
Resolution No. 2013-1**

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the St. Andrew's Parish Parks & Playground Commission originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the St. Andrew's Parish Parks & Playground Commission to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the **St. Andrew's Parish Parks & Playground Commission** and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the **St. Andrew's Parish Parks & Playground Commission**

Effective this 24th Day of October, 2013

Attest:

 24 oct 2013
 24 October 2013

Action Plan for St. Andrew's Parish Parks and Playground Commission

The following are proposed hazard mitigation projects to be undertaken or continued by the St. Andrew's Parish Parks and Playground Commission for during 2016-2017

(Abbreviations: PP- Property Protection; NB- Natural Benefits; PI- Public Information, PA – Preventive Activities)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority (1 highest, 4 lowest)</i>
PP	Continue to update and inform employees of hazardous weather conditions as outlined in the Hurricane Plan.	St. Andrew's	General Fund	Protecting the lives of St. Andrew's staff from natural hazards	1
NB	Continue maintaining permanent open space as parks.	St. Andrew's	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1
PA	Continue to distribute and provide a Safety and Security Manual that deals with severe weather conditions and hazardous materials.	St. Andrew's	General Fund	Education of employees on safe practices	2
PI	Prepare and provide park facilities that may be used for tent cities for those who have lost their homes due to extreme weather conditions.	St. Andrew's	General Fund	To provide park facilities	2
PI	Continue involvement in local hazard mitigation initiatives providing information to St. Andrew's Parks and Playground Staff	St. Andrew's	General Funding	Protect the lives of agency staff.	2
PP	Accelerate agency's Hazard Tree identification program. Identify and remove problem trees	CCPRC	General Fund	Preserve environmental resources; minimize future hurricane damage	2
PP	Seek funding to retrofit facilities for enhanced hazard resistance, if funding becomes available and suitable projects are identified.	St. Andrew's	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1
PI	Continue participating in the Project Impact Program for Public Information (PIP) to achieve maximum public outreach.	Building Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

Status Report for St. Andrew's Parish Parks and Playground Commission

The following are proposed hazard mitigation projects to be undertaken or continued by the St. Andrew's Parish Parks and Playground Commission for during 2015-2016 and their status through April 2016

(Abbreviations: PP- Property Protection; NB- Natural Benefits; PI- Public Information, PA – Preventive Activities)

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goal(s) addressed</i>	<i>Priority</i> <i>(1 highest, 4 lowest)</i>	<i>Status</i>
PP	Continue to update and inform employees of hazardous weather conditions as outlined in the Hurricane Plan.	St. Andrew's	General Fund	Protecting the lives of St. Andrew's staff from natural hazards	1	On going
NB	Continue maintaining permanent open space as parks.	St. Andrew's	General Fund	Preserve environmental resources; promote long-term economic prosperity; encourage recreational activities	1	On going
PA	Continue to distribute and provide a Safety and Security Manual that deals with severe weather conditions and hazardous materials.	St. Andrew's	General Fund	Education of employees on safe practices	2	On going
PI	Prepare and provide park facilities that may be used for tent cities for those who have lost their homes due to extreme weather conditions.	St. Andrew's	General Fund	To provide park facilities	2	On going
PI	Continue involvement in local hazard mitigation initiatives providing information to St. Andrew's Parks and Playground Staff	ST. Andrew's	General Funding	Protect the lives of agency staff.	2	On going
PP	Accelerate agency's Hazard Tree identification program. Identify and remove problem trees	CCPRC	General Fund	Preserve environmental resources; minimize future hurricane damage	2	On going
PP	Seek funding to retrofit facilities for enhanced hazard resistance, if funding becomes available and suitable projects are identified.	St. Andrew's	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1	On going

7.29 – St. Andrews Public Service District

Resolution for Adoption

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
ST. ANDREWS PUBLIC SERVICE DISTRICT COMMISSION**

Resolution No. 13.10

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the **ST. ANDREWS PUBLIC SERVICE DISTRICT COMMISSION** originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the **ST. ANDREWS PUBLIC SERVICE DISTRICT COMMISSION** to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the **ST. ANDREWS PUBLIC SERVICE DISTRICT COMMISSION** and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the **ST. ANDREWS PUBLIC SERVICE DISTRICT COMMISSION**.

Effective this 4 Day of November, 2013.

Attest: Charlie Ledford
Charlie Ledford, Commission Chairperson

Action Plan for the St. Andrews Public Service District

Following are the proposed projects to be undertaken in the St. Andrews Public Service District for hazard mitigation during 2017-2018

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "AE" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
PA	Continue training courses in regard to Fire Prevention.	Fire Prevention and Training	General Budget	Educating the public regarding natural fire hazards, minimizing fire damage	1
PA	Provide information to citizens regarding the propane tank anchoring	Fire Prevention	General Budget	Educating the public regarding vulnerability to hazards and steps to reduce vulnerability; minimize danger and hazard	4
PP	Promote voluntary program of all Fire Prevention codes and fire hazards	Fire Prevention and Training	General Budget	Educating the public regarding vulnerability to hazards and steps to reduce vulnerability	1
ES	Continue hazardous material training	Training Division	General Budget	Protecting lives and the environment from man-made hazards; minimize future hazardous materials incidents	1
ES	Continue Terrorist Response Training	Training Division	General Budget	Protecting lives and the environment from man-made hazards; minimize future terrorist activity incidents	1
ES	Continue to staff the Emergency Operations Center in the event of an emergency	Administrative Staff	General Budget	Protecting lives; establishing cooperative relations between the public and private sectors; keeping PSD officials abreast of on-going activity	1
ES	Continue responding to hazard emergencies	Fire Suppression	General Budget	Protecting lives and property; enhancing response for hazard events; educating citizens regarding vulnerability to hazards	1
ES	Continue working to attain resources and to provide training for maritime fire fighting through the Maritime Incident Response Team (MIRT).	Training Division MAP Team Members	General Budget	Enhancing preparedness and response for hazard events and incidents	1

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)
ES	Continue training programs for the Anti-Terrorism Task Force	Training Division	General Budget	Protecting lives and property from man-made hazards; preparedness, awareness, and response of terrorist attacks	1
PI	Participate in "Hazard Awareness Week"	Training Division	General Budget	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1
PI	Continue with Public Relations Programs	Administrative Staff	General Budget	Educating the public by addressing civic clubs, groups, and organizations	1
PI	Continue programs aimed towards providing resources to local schools to enhance their ability to educate students regarding hazard events and hazard event preparation.	Administrative Staff	General Budget	Educating all regarding their vulnerability to hazard events	1
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1

Status Report for the St. Andrews Public Service District

Following are the proposed projects to be undertaken in the St. Andrews Public Service District for hazard mitigation during 2016-2017 and their status through April 2017

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "AE" is Emergency Services Activities, "SP" is Structural Projects Activities, and "PI" is Public Information Activities, "GIS" is Geographic Information Systems Activities.)

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
PA	Continue training courses in regard to Fire Prevention.	Fire Prevention and Training	General Budget	Educating the public regarding natural fire hazards, minimizing fire damage	1	On-going
PA	Provide information to citizens regarding the propane tank anchoring	Fire Prevention	General Budget	Educating the public regarding vulnerability to hazards and steps to reduce vulnerability; minimize danger and hazard	4	<u>Not funded</u>
PP	Promote voluntary program of all Fire Prevention codes and fire hazards	Fire Prevention and Training	General Budget	Educating the public regarding vulnerability to hazards and steps to reduce vulnerability	1	On-going
ES	Continue hazardous material training	Training Division	General Budget	Protecting lives and the environment from man-made hazards; minimize future hazardous materials incidents	1	On-going
ES	Continue Terrorist Response Training	Training Division	General Budget	Protecting lives and the environment from man-made hazards; minimize future terrorist activity incidents	1	On-going
ES	Continue to staff the Emergency Operations Center in the event of an emergency	Administrative Staff	General Budget	Protecting lives; establishing cooperative relations between the public and private sectors; keeping PSD officials abreast of on-going activity	1	On-going
ES	Continue responding to hazard emergencies	Fire Suppression	General Budget	Protecting lives and property; enhancing response for hazard events; educating citizens regarding vulnerability to hazards	1	On-going
ES	Continue working to attain resources and to provide training for maritime fire fighting through the Maritime Incident Response Team (MIRT).	Training Division MAP Team Members	General Budget	Enhancing preparedness and response for hazard events and incidents	1	On-going

Type	Activity	Lead Agency	Funding Source	Goal(s) addressed	Priority (1 highest, 4 lowest)	Status
ES	Continue training programs for the Anti-Terrorism Task Force	Training Division	General Budget	Protecting lives and property from man-made hazards; preparedness, awareness, and response of terrorist attacks	1	On-going
PI	Participate in "Hazard Awareness Week"	Training Division	General Budget	Educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	On-going
PI	Continue with Public Relations Programs	Administrative Staff	General Budget	Educating the public by addressing civic clubs, groups, and organizations	1	On-going
PI	Continue programs aimed towards providing resources to local schools to enhance their ability to educate students regarding hazard events and hazard event preparation.	Administrative Staff	General Budget	Educating all regarding their vulnerability to hazard events	1	On-going
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	On-going

7.30 – St. John’s Fire District Commission

Resolution for Adoption

ST. JOHN’S FIRE DISTRICT

COMMISSIONERS:

J. BARRY HART, Chairman
ERIC P. BRITTON, Vice-Chairman
SAMUEL BROWNLEE
WANDA FORD
SUSANNE HOLLOMAN
THOMAS KULICK
GENEVA SMITH

P.O. BOX 56
3327 Maybank Hwy.
JOHNS ISLAND, S.C. 29455
PHONE: (843) 559-9194
FAX: (843) 559-3687



KARL E. RISTOW, Fire Chief

A RESOLUTION FOR THE ADOPTION OF THE REVISED *CHARLESTON REGIONAL HAZARD MITIGATION PLAN* BY THE ST JOHN’S FIRE DISTRICT COMMISSION

WHEREAS the St John’s Fire District has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the St John’s Fire District Commission originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, and is required to adopt the amended version of this plan on a five year cycle for the District to remain eligible for certain Federal programs in which the St John’s Fire District participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the St John’s Fire District, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the St John’s Fire District Commission.

Effective this 8th Day of September, 2008

Attest:


J. Barry Hart, Commission Chairman
St John’s Fire District

Action Plan for the St. John's Fire District

The St. John's Fire District is a special purpose district located in Charleston County, SC. The St. John's Fire District is a full service fire department providing fire suppression, EMS fire response (non-transport), HAZMAT, marine rescue, confined space, prevention, and inspection services. As we are a specialized service, all other functions of government are accomplished by Charleston County and three municipalities (Kiawah, Seabrook, and Rockville) within our jurisdiction.

The following are proposed projects to be undertaken/ continued in the St. John's Fire District for hazard mitigation during 2017-2018

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority</i>
ES	Continue hazardous material training	Training Division	General Fund Grants	We have disbanded our technical response team for these incidents. We will respond at an operations level in support of other technical teams in the Region.	2
ES	Continue Terrorist Response Training	CC HAZMAT Coordinator, Training Division, CCSO	General Fund Grants	Continue development of Regional response team through training opportunities identified by the CC HAZMAT office	2
ES/PI	Include construction practices that are sensitive to flood, seismic and hurricane considerations on all new or upgraded facilities.	Administration Fire Prevention	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long-term economic growth.	1
ES	Continue training confined space rescue	Training Division	General Fund	We have disbanded our technical response team for these incidents. We will respond at an operations level in support of other technical teams in the Region.	2

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, "PI" is Public Information Activities, and "GIS" is Geographic Information System Activities.)

Status Report for the St. John's Fire District

The St. John's Fire District is a special purpose district located in Charleston County, SC. The St. John's Fire District is a full service fire department providing fire suppression, EMS fire response (non-transport), HAZMAT, marine rescue, confined space, prevention, and inspection services. As we are a specialized service, all other functions of government are accomplished by Charleston County and three municipalities (Kiawah, Seabrook, and Rockville) within our jurisdiction.

The following are proposed projects to be undertaken/ continued in the St. John's Fire District for hazard mitigation during 2016-2017 and their status through April 2017

<i>Type</i>	<i>Activity</i>	<i>Lead Agency</i>	<i>Funding Source</i>	<i>Goals Addressed</i>	<i>Priority</i>	<i>Status</i>
ES	Continue hazardous material training	Training Division	General Fund Grants	We have disbanded our technical response team for these incidents. We will respond at an operations level in support of other technical teams in the Region.	2	Continuing
ES	Continue Terrorist Response Training	CC HAZMAT Coordinator, Training Division, CCSO	General Fund Grants	Continue development of regional response team through training opportunities identified by the CC HAZMAT office	2	Continuing
ES/PI	Include construction practices that are sensitive to flood, seismic and hurricane considerations on all new or upgraded facilities.	Administration Fire Prevention	General Fund	Minimize future flood damage; protect the lives of our citizens from man-made hazards; improve water quality; improve hazard resistance of infrastructure; promote long-term economic growth.	1	Continuing
ES	Continue training confined space rescue	Training Division	General Fund	We have disbanded our technical response team for these incidents. We will respond at an operations level in support of other technical teams in the Region.	2	Auto Aid

(Abbreviations for "Type" are as follows: "PA" is Preventive Activities, "PP" is Property Protection Activities, "NB" is Natural and Beneficial Functions/Resource Preservation Activities, "ES" is Emergency Services Activities, "SP" is Structural Projects Activities, "PI" is Public Information Activities, and "GIS" is Geographic Information System Activities.)

7.31 – St. Paul’s Fire District Commission

Resolution for Adoption

A RESOLUTION FOR THE ADOPTION OF THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY ST. PAUL’S FIRE DISTRICT

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the St. Paul’s Fire District originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the St. Paul’s Fire District to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the St. Paul’s Fire District, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the St. Paul’s Fire District Commission.

Effective this 18th Day of November, 2013

Attest:



Action Plan for the St. Paul's Fire District

The following are proposed projects to be continued in the St. Paul's Fire District for hazard mitigation during 2017-2018

The St. Paul's Fire District is a Special Purpose Tax District located in Charleston, SC. The District was established as an emergency service District for the purposes of fire protection and suppression, first responder medical response, hazardous materials response, and response to man-made and natural disasters.

The District has no ordinance adopting authority and is a rural agriculture area of low to moderate-income levels, and low population (12,707 per 2000 Census). Due to these factors, the District is very limited in its resources and authority regarding Hazard Mitigation Planning. The District's role would be mostly supportive in regards to Non-Emergency Services Activities. The District would be proactive and reactive regarding Emergency Services, with utilizing additional resources through Charleston County Emergency Action Plans.

(Abbreviations for "type" are as follows: "PA" is Preventive Activities, "ES" is for Emergency Services Activities, and "PI" is Public Information Activities)

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1-high, 4-low)
PA	Support Adoption of any Charleston County or Incorporated Town (within SPFD) standards, regulations, codes, or programs regarding Hazard Mitigation Activities	Administration <i>SPFD Fire Inspectors</i>	General Fund	To prevent or minimize damage, injuries or economic loss due to natural or man-made disasters.	2 On Going
ES	Continue membership in the Emergency Council, which supports the Charleston County Emergency Plan.	Commission Chairman / Fire Chief	General Fund	Protecting lives of citizens from natural and man-made hazards; establishing cooperative relationships between public, private and nonprofit sectors to enhance the response to hazard events; educating citizens regarding vulnerability to hazards and steps to take to reduce vulnerability; preserve environmental resources; promote long-term economic prosperity.	1 On Going
ES	Work with local jurisdictions to form multi-disciplined task forces of specially trained police, fire and EMS personnel to respond to any natural or man-made disasters.	Administration / Fire Chief	General Fund	Protecting lives of citizens from natural or man-made hazards; minimize future incidents of natural or man-made disasters; assessing vulnerability to man-made or natural disasters by establishing cooperative relationships between public, private and non-profit sectors to enhance response to hazard events; promote long term economic prosperity.	1 On Going
PI	Provide speakers to civic groups regarding District operations, and the many supporting programs through Charleston County Government.	Administration <i>SPFD Fire Inspectors</i>	General Fund	Educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	3-2 On Going

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1-high, 4-low)
PP PA	Seek funding for retrofitting Commission-owned facilities for enhanced hazard-resistance, if funding becomes available	Administration / SPFD Commission	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1 On Going
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1 On Going

The St. Paul's Fire District shall provide support to the many activities and projects that will benefit the residents of the District. Additional recommended projects may be added to this action plan as they are made available and recommended to the St. Paul's Fire District Commission. Some projects that are being undertaken by other jurisdictions may not necessarily be listed here but may affect the St. Paul's Fire District.

Status Report for the St. Paul's Fire District

The following are proposed projects to be continued in the St. Paul's Fire District for hazard mitigation during 2016-2017 and their status through April 2017

The St. Paul's Fire District is a Special Purpose Tax District located in Charleston, SC. The District was established as an emergency service District for the purposes of fire protection and suppression, first responder medical response, hazardous materials response, and response to man-made and natural disasters.

The District has no ordinance adopting authority and is a rural agriculture area of low to moderate-income levels, and low population (12,707 per 2000 Census). Due to these factors, the District is very limited in its resources and authority regarding Hazard Mitigation Planning. The District's role would be mostly supportive in regards to Non-Emergency Services Activities. The District would be proactive and reactive regarding Emergency Services, with utilizing additional resources through Charleston County Emergency Action Plans.

(Abbreviations for "type" are as follows: "PA" is Preventive Activities, "ES" is for Emergency Services Activities, and "PI" is Public Information Activities)

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1-high, 4-low)	Status
PA	Support Adoption of any Charleston County or Incorporated Town (within SPFD) standards, regulations, codes, or programs regarding Hazard Mitigation Activities	Administration / Department <i>Fire Inspectors</i>	General Fund	To prevent or minimize damage, injuries or economic loss due to natural or man-made disasters.	2	On Going
ES	Continue membership in the Emergency Council, which supports the Charleston County Emergency Plan.	Commission Chairman / <i>Fire Chief</i>	General Fund	Protecting lives of citizens from natural and man-made hazards; establishing cooperative relationships between public, private and nonprofit sectors to enhance the response to hazard events; educating citizens regarding vulnerability to hazards and steps to take to reduce vulnerability; preserve environmental resources; promote long-term economic prosperity.	1	On Going
ES	Work with local jurisdictions to form multi-disciplined task forces of specially trained police, fire and EMS personnel to respond to any natural or man-made disasters.	Administration / <i>Fire Chief</i>	General Fund	Protecting lives of citizens from natural or man-made hazards; minimize future incidents of natural or man-made disasters; assessing vulnerability to man-made or natural disasters by establishing cooperative relationships between public, private and non-profit sectors to enhance response to hazard events; promote long term economic prosperity.	1	On Going

Type	Activity	Lead Agency	Funding Source	Goals Addressed	Priority (1-high, 4-low)	Status
PI	Provide speakers to civic groups regarding District operations, and the many supporting programs through Charleston County Government.	Administration Department <i>Fire Inspectors</i>	General Fund	Educating citizens regarding their vulnerability to man-made hazards and steps to take to reduce vulnerability.	3	On Going
PP PA	Seek funding for retrofitting Commission-owned facilities for enhanced hazard-resistance, if funding becomes available	Administration <i>/ Commission</i>	Grant Funding	Reduce vulnerability of infrastructure to natural and man-made hazards; minimize future hurricane damage; minimize future earthquake damage; reduce existing flood damage; preserve historic building inventory; promote long-term economic prosperity	1	On Going
PI	Continue participating in the Project Impact Program for Public Information (PPI) to achieve maximum public outreach.	Building Inspection Services/ Project Impact committee members	General Fund	Establishing cooperative relationships between public, private and non-profit sectors to enhance preparedness and recovery for hazard events; educating citizens regarding their vulnerability to natural hazards and steps to take to reduce vulnerability	1	On Going

The St. Paul's Fire District shall provide support to the many activities and projects that will benefit the residents of the District. Additional recommended projects may be added to this action plan as they are made available and recommended to the St. Paul's Fire District Commission. Some projects that are being undertaken by other jurisdictions may not necessarily be listed here but may affect the St. Paul's Fire District.

Section 8 Appendices

This section provides additional documentation to the *Charleston Regional Hazard Mitigation Plan*. It includes the following subsections:

- A.1 Overview of the Public Information Plan (PIP)
- A.2 Overview of the Community Rating System
- A.3 Overview of Project Impact
- A.4 Public Meeting Notices
- A.5 Previous Yearly Meeting Minutes 2013-2017
- A.6 Summary of Changes 2013-2017

A.1 – Overview of the Public Information Plan (PIP)

The Public Information Plan is a dynamic document with its purpose to act as a guidebook for appropriate Committees pertaining to the *Charleston Regional Hazard Mitigation Plan* and Project Impact to be able to update both efficiently and accurately the guidelines, procedures, and projects on educating the public and broadcasting and sharing new information critical to the area. To achieve this, the Plan outlines criteria necessary for the Committee to make these decisions such as the community needs assessment, the flood hazard and insurance assessment, and the repetitive loss assessment. With this Plan, the Committees can create outcomes and opportunities for public education, including but not limited to, expos, access to information electronically, brochures, and community wide access and education through the participation of sixteen (16) jurisdictions within Charleston County.

Below is the Public Information Plan in full:

Public Information Plan

**2017-
2018**

Appendix A.1 to the Charleston Regional Hazard Mitigation Plan



Charleston County
Building Inspection Services
4045 Bridge View Drive STE A311
North Charleston, SC 29405
843-202-6940

Table of Contents

<i>Purpose</i>	460
<i>Background</i>	460
<i>Hazard Mitigation & Public Information Plan Committee</i>	462
Table 1: Designated Members of the Committee	462
Table 2: Stakeholder Members of the Committee	463
Table 3: Other Participating Partners of the Committee	464
<i>Community Needs Assessment</i>	465
<i>Flood Hazards</i>	467
<i>Flood Insurance Assessment</i>	467
Table 4: Site-Built Structures Valuation Per Jurisdiction	468
Table 5: Percentages of Homes within SFHA's per Jurisdiction	468
Table 6: Flood Insurance Coverage Assessment	469
<i>Repetitive Loss Properties</i>	470
Map 1: Repetitive Loss Map.....	471
Map 2: Repetitive Loss Property “Heat Map”	471
<i>Target Audiences</i>	471
<i>Outreach Methods</i>	472
<i>Existing Public Information Efforts</i>	472
Table 7: On-Going Public Information Activities	473
<i>Topics and Messages</i>	473
<i>Outreach Projects</i>	477
Table 8: Outreach Projects.....	478
Attachment: OP#26 “Just Let the Rain Go Down... The Drain”	481
Attachment: OP#12 “Flooding: It Is Real. Are you at Risk?”	482
<i>Flood Protection Assistance (Activity 360) and Flood Insurance Promotion (Activity 370)</i>	483
Table 9: Coverage Improvement Plan (CPI) Projects.....	484
Table 10: Direct Contact Offering Flood Protection Assistance and Promoting Flood Insurance	485
Attachment: Round Table Discussion Promoting Flood Insurance	485
Table 11: Technical Assistance Related to Flood Insurance Promotion.....	487
<i>Hazard Disclosure (CRS Activity 340)</i>	488

Attachment: OP#33 “Shopping for Your Dream Home? Know & Prepare for Flood Risk Before You Buy”	489
<i>Flood Protection Information (CRS Activity 350)</i>	489
Attachment: Charleston County Website.....	491
<i>Floodplain Management Planning (CRS Activity 510)</i>	492
<i>Flood Response Preparations</i>	493
Table 12: Flood Response Preparation Activities (FRP)	494
<i>Annual Evaluation</i>	494
Attachment: Charleston County Council Acceptance of Updated Plan.....	495
Attachments (16): Each Jurisdiction’s Adopting Resolution.....	496
Attachment 1: FRP Instructions for Distribution	513
Attachment 2: Media Information Post Flood	514

Link to the Charleston Regional Hazard Mitigation Plan:

<http://www.charlestoncounty.org/departments/building-inspection-services/files/Hazard-Mitigation-Plan.pdf>



Charleston County, South Carolina

2017-2018 Public Information Plan

Purpose

The Public Information Plan is a dynamic document with its purpose to act as a guidebook for appropriate Committees pertaining to the *Charleston Regional Hazard Mitigation Plan* and Project Impact to be able to update both efficiently and accurately the guidelines, procedures, and projects on educating the public and broadcasting and sharing new information critical to the area. To achieve this, the Plan outlines criteria necessary for the Committee to make these decisions such as the community needs assessment, the flood hazard and insurance assessment, and the repetitive loss assessment. With this Plan, the committees can create outcomes and opportunities for public education, including but not limited to, expos, access to information electronically, brochures, and community wide access and education through the participation of sixteen (16) jurisdictions within Charleston County.

Background

The Charleston County area has historically survived numerous natural and man-made disasters with resilience and an urgent need to prevent or minimize the impact of future events. The community resistance to prevent problems made it very easy to create a community-wide program to educate residents and reduce the impact of future events. In 1987, the creation of a hazard mitigation plan was developed to support an application to participate in the FEMA Project Impact Program. Charleston County was selected as a Project Impact community in December of 1988. As originally created, the program required the establishment of a hazard mitigation plan. The frame work of implementing the program was an advisory committee including both a Hazard Mitigation Plan Committee and a Public Information Committee which continues on today as one joint committee.

The **goals** of this plan include but are not limited to:

1. Protecting the lives of our citizens to the best of our abilities from natural and man-made environmental hazards.

2. Assessing the extent of our vulnerability to natural and man-made environmental hazards.
3. Establishing cooperative relationships between the public, private and non-profit sectors to enhance our preparedness, response, recovery, and mitigation for hazard events.
4. Educating our citizens regarding their vulnerability to natural hazards and steps which may be taken to reduce that vulnerability.
5. Reducing vulnerability of our infrastructure and built environment to natural and man-made environmental hazards through specific mitigation projects that will also consider the historic and environmental resources of our area.

The *Charleston Regional Hazard Mitigation Plan* has been a multi-jurisdictional plan since the Project Impact program was utilized to promote the outreach program and assist with implementing the Action Plans of the *Charleston Regional Hazard Mitigation Plan*. In 2012, the Hazard Mitigation & Public Information Plan Committees, which were once separate, were combined and became the Hazard Mitigation & Public Information Plan Committee. In 2013, the *Charleston Regional Hazard Mitigation Plan* refined the roles of the overall Committee to comply with the Program for Public Information requirements of the 2013 Community Rating System. For the 2016-2017 update of the *Charleston Regional Hazard Mitigation Plan*, the Committee voted to change the name from Program for Public Information to Public Information Plan. Because the Public Information Plan is included as an appendix of the the *Charleston Regional Hazard Mitigation Plan*, it is voted on and adopted by all jurisdictions' Councils and will be updated yearly. The *Charleston Regional Hazard Mitigation Plan* is formally adopted by all jurisdictions on a 5- year cycle and Charleston County Council is notified of the annual updates between formal adoptions. The most recent formal adoptions took place in 2013 and the next is set to occur later in 2017. Please see the attachments (pages 496-512) following this document for each jurisdiction's adopting resolution.

Charleston County has participated in the Community Rating System (CRS) since 1994. The Community Rating System is a part of the National Flood Insurance Program (NFIP). Currently, Charleston County is a CRS Class 4, providing residents of Charleston County up to a 30% discount on flood insurance premiums. In an effort to increase public awareness and education, the County has implemented a Public Information Plan based on the past four years of work created and implemented by the Committee and the County. The final draft of the Public Information Plan was submitted to the insurance liaison of FEMA Region V requesting any comments on the draft document. The document will be formally adopted by the Hazard Mitigation & Public Information Plan Committee during the next adoption of the *Charleston Regional Hazard Mitigation Plan* later in 2017 or a special meeting will be held to formally adopt the Public Information Plan portion of the *Charleston Regional Hazard Mitigation Plan*.

Hazard Mitigation & Public Information Plan Committee

The Hazard Mitigation & Public Information Plan Committee is a large group of individuals working to ensure that the Public Information Plan maintains an effective system of providing the public with valuable information in regards to local hazards and mitigation efforts. The Public Information Plan is a program to provide information to target audiences and the public in general, about local hazards; how to prepare for, what to do in the event of, and how to recover from, potentially dangerous events that could affect our area. The Committee has been in place since the inception of the Project Impact program resulting in the Committee building on their experiences and their knowledgebase of the best methods for informing the public. The following tables identify current members of the Charleston Regional Hazard Mitigation & Public Information Plan Committee. This Committee is responsible for amending the *Charleston Regional Hazard Mitigation Plan* which includes the duties of amending the Public Information Plan. These members provide perspectives from different jurisdictions, areas of study or interests, government and non-government agencies, real estate and insurance agencies, in addition to stakeholders and concerned citizens from flood-prone areas. In order to be included in the *Charleston Regional Hazard Mitigation Plan*, each jurisdiction has designated members assigned to the Committee to represent different areas concerned within Charleston County. The *Charleston Regional Hazard Mitigation Plan* encompasses sixteen (16) jurisdictions, all of which participate in the CRS Program. Table 1 lists the jurisdictional designated members of the Committee, what jurisdiction they represent and their associated CEO.

Table 1: Designated Members of the Committee

Jurisdiction	CEO	Designated Member
Town of Awendaw	Miriam Green, Mayor	D. William Wallace, Town Administrator
Town of Hollywood	Jackie Heyward, Mayor	Edward Holton, Zoning Administrator
Town of James Island	Bill Woolsey, Mayor	Ashley Kellahan, Town Administrator
Town of Lincolnville	Charles Duberry, Mayor	Charles B. Duberry, Mayor
Town of McClellanville	Rutledge B. Leland, III, Mayor	Michelle McClellan, Town Clerk
Town of Meggett	Harry V. Herrington, Mayor	Stephanie Smith, Town Administrator
Town of Ravenel	Opal N. Baldwin, Mayor	Mark Bloomer, Planning Administrator
Town of Rockville	Riley A. Bradham, Mayor	Carl H. Simmons, Director, Building Inspection Services
Town of Seabrook Island	Ronald Ciancio, Mayor	Randy Pierce, Town & Zoning Administrator
City of Charleston	John Tecklenberg, Mayor	Laura Cabiness, Director, Public Service Dept.
City of Folly Beach	Tim Goodwin, Mayor	Eric Lutz, Building Official
Town of Kiawah Island	Craig Weaver, Mayor	Stephanie Tillerson, Town Administrator
City of Isle of Palms	Dick Cronin, Mayor	Douglas Kerr, Director, Building, Planning, & Zoning
Town of Mt. Pleasant	Linda Page, Mayor	Hillary Repik, Stormwater Manager
City of North Charleston	R. Keith Summey, Mayor	James Whittaker
Town of Sullivan's Island	Patrick O'Neal, Mayor	Randy Robinson, Building Official
Unincorporated Charleston County	Jennifer Miller, Administrator	Carl H. Simmons, Director, Building Inspection Services

With such a diverse group of Committee members, the Charleston Regional Hazard Mitigation & Public Information Plan Committee aspires to evaluate public information needs from all areas of interest. Stakeholders involved in the Charleston Regional Hazard Mitigation & Public Information Plan Committee come from various businesses, organizations and other government

agencies outside the community that hold special interest in the hazard mitigation process of Charleston County. Also, other stakeholders involved in the Committee represent floodplain residents, emergency responders, utility companies, business organizations, trade associations, environmental organizations, insurance agencies and lenders as well as major employers of the area. The Charleston Regional Hazard Mitigation & Public Information Plan Committee includes forty (40) stakeholder members, which makes up more than half of the voting Committee of fifty-six (56). Table 2 lists individual non-government stakeholder members of the Charleston Regional Hazard Mitigation & Public Information Plan Committee.

Table 2: Stakeholder Members of the Committee

Name	Representing
Shawn Engelman, Deputy Chief of Administration	James Island PSD
Chris Seabolt, Fire Chief	James Island PSD
Gary Alford, Assistant District Manager of Operations	North Charleston District and Sewer District
Ken Fischer, Manager	St. Andrews PSD
Christie Holderness, District Manager	St. Andrews PSD
Gavin Gilcrease, Administrative Assistant Chief	St. John's Fire District
Mike Rakoske, Assistant Chief of Administration	St. Paul's Fire District
Kent Scarborough, Safety Director	Charleston Water System
Ronnie Freeman, Safety Director	Mt. Pleasant Water Works
Ryan Henderson, Safety Compliance Director	Charleston Co Parks & Recreation Commission
Susan Klugman, CFO	St. Andrews Park & Playground Commission
Gary McJunkin, Director	Cooper River Parks & Playground Commission
Angela McJunkin, Director Code Enforcement	Cooper River Parks & Playground Commission
Michael Reidenbach, Security & Emergency Management	Charleston County School District
Sean Hughes, Facility Director	Charleston County School District
Woody Doossche, Safety Manager	Charleston County School District
Dana Henderson, Director of Risk Management	Charleston County School District
Randy Beaver, Dir. Envir Health & Safety	College of Charleston
Jordan Bradway, Emergency Manager	Roper St. Francis
Anne Sass, Grants Director	Roper St. Francis
Peter DiNicola, Director of Plant Operations	Roper St. Francis
Scott Cave, Certified Business Continuity Consultant	Atlantic Business Continuity Services
Mike Horton	Davis and Floyd
Robert George, Director of Conservation	SC Aquarium
Justin Healy, Owner	Shutter Services & Sales
William Salters, Coastal Services Project Manager, Planning	SC DHEC - OCRM
Amanda Ritsema, Hospital Preparedness Program Coordinator	SC DHEC
Aleta Riesberg, Real Estate Agent	Anchorline Properties
Chris Silcox, Insurance Agent	C.T. Lowndes & Co.
Debbie Eckard, District Manager, Education Coordinator	Charleston Soil & Water Conservation District
Cedric Green, Vice President	SCANA
Tim Mobley, VP, Engineering and Operations	Berkeley Electric Cooperative
Stewart Weinberg	Floodplain Resident
Bill West	Floodplain Resident
Thomas Payne	Floodplain Resident
Aleen Kinter	Floodplain Resident
Julie Hensley	Floodplain Resident
Nicole Elko	Floodplain Resident
Robert Cochran	Floodplain Resident
Henry Dingle	Floodplain Resident

Table 3 is a listing of other participating partners involved in the Charleston Regional Hazard Mitigation & Public Information Plan Committee. Though these are not Stakeholder members of the Committee, they still have a significant place in reaching the goals of the Committee. Also included in this category are Charleston County staff members, including the Public Information Officer, that provide assistance to the Committee and other jurisdictional government members and special district officials that have a special interest in flood and hazard related issues (i.e., public service district officials, parks and recreation commission members, sewer districts, etc.).

Table 3: Other Participating Partners of the Committee

Name	Representing
*Jody Muldrow, Planning Administrator	Town of Awendaw
*John Porcelli, Building Official	Town of James Island
Mark Johnson, Public Works	Town of James Island
James Hackett, Code and Safety Officer	Town of James Island
*Larry Brown, Town Council	Town of Lincolnville
Charles Gannt, Fire Chief	Town of Lincolnville
*Henry Holst, Town Council	Town of Rockville
*John Gregg, Mayor Pro-Tem	Town of Seabrook Island
John Turner, Town Council	Town of Seabrook Island
Tom O'Brien, Deput Director Public Service	City of Charleston
*Mark Wilbert, Emergency Management	City of Charleston
*Aaron Pope, Zoning Administrator	City of Folly Beach
Bob Maibach, (Fire) Training Officer	City of Isle of Palms
*Linda Tucker, Town Administrator	City of Isle of Palms
Desiree Fragoso, Assistant Administrator	City of Isle of Palms
*Bruce Spicher, Building Official	Town of Kiawah Island
Katherine Hendricks, Assistant Town Administrator	Town of Mt. Pleasant
*Rob Rogerson, Floodplain Manager	Town of Mt. Pleasant
Emily Raby, Stormwater	Town of Mt. Pleasant
Michael Hardy, Staff Engineer	City of North Charleston
Eyda Arroyave, Planning and Zoning Assistant	City of North Charleston
*Darbis Briggman, Chief Building Official	City of North Charleston
Benjamin Brown, Inspector	City of North Charleston
*William Barfield, Emergency Preparedness Coordinator	City of North Charleston
*Joe Henderson, Zoning Administrator	Town of Sullivan's Island
*William Horne	Charleston County Building Inspection Services
Cindy Cahill	Charleston County Building Inspection Services
Niki Grimball	Charleston County Building Inspection Services
Eric Adams	Charleston County Transportation
Taylor Hall	Charleston County Transportation
*Brock Clary	Charleston County EMD
Chris Wannamaker	Charleston County Public Works
Shawn Smetana	Charleston County Public Informaiton Officer
<i>* Denotes other participating partners that are considered alternative voting members in the absence of the designated member.</i>	

Participation in the Charleston Regional Hazard Plan and Public Information Committee requires attendance of at least one voting member and associated stakeholders. Because of the diverse nature of the Committee, at least two representatives from each jurisdiction are included in the Committee and more than half of the Committee's members are non-government stakeholder members. This diversity allows the Committee to take into account all perspectives of different areas, groups and interests affected by local hazards. Participation from every Committee member is essential in creating and maintaining an effective Public Information Plan because all of the

members have an interest and knowledge of hazard mitigation and the importance of public outreach to produce a better outcome after an event.

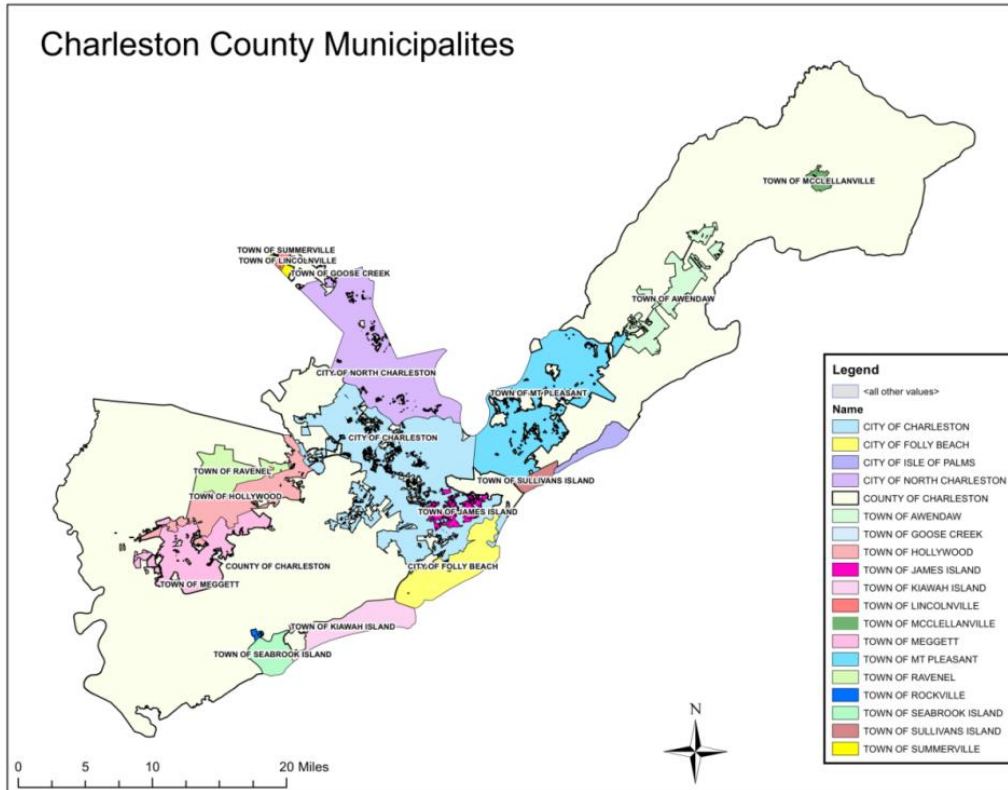
The Committee has met at least twice a year since the creation of the Public Information Plan in 2012. At these meetings, outreach topics are discussed and modified if necessary, target audiences and areas are addressed and outreach projects are reviewed. These messages and topics have been adjusted over the years to suit the area's current informational needs and are listed in a later section of this document. This year's meetings were held on June 13, July 18 and August 22, 2017.

Community Needs Assessment

Charleston County is located along the southeast coast of South Carolina and is subject to many different hazards, from localized flooding to major hurricanes and earthquakes. It encompasses approximately 916 square miles of land, marshes, rivers, and wetlands with a coastline that stretches nearly 100 miles along the Atlantic Ocean.

The Charleston region's population is growing 3 times faster than the U.S. at a rate of 13.2 percent since 2010 to an estimated 2016 population of 396,484, with a median age of 37 and a median household income of approximately \$53,437. The labor force consists of around 40,742 companies. Around 89.7 percent of Charleston County residents have a high school degree or higher level of education, and 17.2 percent of the population below poverty level.

Charleston County consists of the unincorporated areas and the municipalities of the Town of Awendaw; Town of Hollywood; Town of James Island; Town of Lincolnton; Town of McClellanville; Town of Meggett; Town of Ravenel; Town of Rockville; Town of Seabrook Island; the City of Charleston; City of Folly Beach; City of Isle of Palms; Town of Kiawah Island; Town of Mount Pleasant, City of North Charleston; and Town of Sullivan's Island.



The *Charleston Regional Hazard Mitigation Plan* and this Public Information Plan also address the vulnerabilities of the Region to each of the major types of hazards facing the region. Each of the major hazard types are discussed in terms of:

- Types of buildings that are most vulnerable to particular hazards
- Estimation of the total number of buildings vulnerable to flood/hurricane damage
 - 78,355 buildings in the region are vulnerable to such damage based on their location in *Special Flood Hazard Area*
 - 47,169 buildings of the total number listed above are also vulnerable due to their date of construction
- Estimated potential building/property losses due to earthquakes and tornadoes
- The types of hazards that pose a threat and in what manner
- Known flood damages
- Past flood impacts
- Emergency warning needs
- Critical facilities
- Natural and beneficial functions of floodplains
- Development and population trends
- Economic impact of hazard events

The overall determination from this section is that the Charleston Region is potentially vulnerable to loss as a result of a hazard event to a relatively high degree, particularly considering the increasing number of residents not necessarily familiar with the types of hazards facing the region and how best to prepare and protect themselves from these hazards. Since tourism plays such a predominant role in the local economy and is often negatively affected by large-scale hazard events with national media coverage, the potential economic losses associated with a hazard event are potentially high.

Flood Hazards

Flood hazards are of particular importance to the Charleston County area because flooding is caused by many different environmental factors in this area. For example, a heavy rainstorm along with a particularly high tide can easily shut down roads in certain areas. Additional exposure to flooding comes from hurricanes, the fact that much of the area is considered below sea level, seasonally high rainfall amounts and construction of new developments which decreases the wooded areas all create the potential for flooding issues. Many drainage projects have occurred over the past few years to reduce the effect that the drainage system has on flood potential.

Flood Insurance Assessment

A flood insurance assessment has been performed for Charleston County to evaluate the participation in current flood insurance coverage, determine new avenues for public outreach to inform residents of the importance of flood insurance coverage and assess where increased coverage is essential. The Charleston area community sits near the coast, experiences heavy rains at times, and is below sea level making the area very susceptible to flooding in some areas more than others. Since 2012, the Charleston area has suffered an estimated \$19,237,750 in damages from flooding. The purpose of performing a flood insurance assessment in the Charleston area is aimed at hazard mitigation while reducing repetitive loss, increasing awareness and preparation, and continuing to evaluate ways to protect the lives of citizens from natural and man-made environmental disasters.

The process to assess flood insurance coverage started with an evaluation of each jurisdiction's total valuation of site-built structures, determining what flood zone structures were in (for both residential and commercial) and preparing a total number of structures located within the Special Flood Hazard Areas as documented in Table 4 below.

Table 4: Site-Built Structures Valuation Per Jurisdiction

Jurisdiction	Total Value "A" Zones Site-Built Structures (mil\$)	Total Value "V" Zones Site-Built Structures(mil\$)	Total Value Site-Built Structures Not in the SFHA (mil\$)	Total Value of Site-Built Structures Not Flood-Zone Coded** (mil\$)
City of Charleston	5,777,921,273	750,627,390	3,801,446,549	3,473,368,792
City of North Charleston	690,481,090	19,600,400	4,258,804,696	4,017,936,428
Folly Beach	163,347,899	248,011,799	15,877,700	0
Hollywood	157,939,002	0	200,490,924	188,179,624
Isle of Palms	1,052,711,587	399,688,099	8,672,200	6,216,400
James Island	506,022,901	41,931,600	330,248,700	327,591,300
Kiawah Island	1,631,621,801	97,644,200	89,768,300	0
Lincolnton	19,268,100	0	7,526,800	6,266,600
McClellanville	68,063,993	9,266,899	3,345,200	785,100
Meggett	116,305,400	345,400	20,585,600	14,424,500
Ravenel	17,022,300	0	99,536,501	94,945,001
Rockville	7,344,600	9,521,100	3,552,000	3,552,000
Seabrook Island	641,314,800	59,571,700	12,919,700	0
Sullivans Island	190,601,414	246,197,000	2,784,200	0
Summerville	26,357,000	0	79,418,500	57,263,800
Town of Awendaw	34,256,493	13,677,800	38,118,000	35,788,800
Town of Mt Pleasant	4,432,269,912	472,292,400	3,784,325,856	3,454,453,256
Unincorporated Chas County	1,967,776,836	314,573,404	1,471,134,243	1,381,493,543
Total Region	17,500,626,401	2,682,949,191	14,228,555,669	13,062,265,144

Of these totals, another table was prepared to determine the total number of structures that were site-built prior to 1985 within each jurisdiction to evaluate the percentages of structures located within a Special Flood Hazard Area and constructed prior to 1985. Table 5 below represents pre-1985 structures located within Special Flood Hazard Areas.

Table 5: Percentages of Homes within SFHA's per Jurisdiction

Jurisdiction	Pre-1985 Site-Built Residential Buildings in SFHA	Pre-1985 Commercial Buildings in SFHA	Total Pre-1985 Site-Built Buildings in SFHA	% of All Site-Built Buildings In Jurisdiction Constructed Pre-1985 and in SFHA	Pre-1985 Mobile Homes in SFHA	Total Site-Built Buildings Pre-1985 & Mobile Homes in SFHA
City of Charleston	12,946	1,896	14,842	61.4	44	14,886
City of North Charleston	1,693	527	2,220	13.21	278	2,498
Folly Beach	923	50	973	99.18	0	973
Hollywood	93	10	103	12.13	11	114
Isle of Palms	2,129	14	2,143	99.72	0	2,143
James Island	2,444	34	2,478	59.11	9	2,487
Kiawah Island	1,629	25	1,654	100	0	1,654
Lincolnton	92	7	99	63.46	27	126
McClellanville	163	23	186	98.41	0	186
Meggett	199	18	217	88.93	18	235
Ravenel	34	5	39	11.11	19	58
Rockville	58	2	60	85.71	1	61
Seabrook Island	1,150	7	1,157	99.57	0	1,157
Sullivans Isle	636	15	651	100	0	651
Summerville	0	0	0	0	0	0
Town of Awendaw	79	7	86	32.58	6	92
Town of Mt Pleasant	2,362	260	2,622	33.54	3	2,625
Unincorporated Charleston County	6,046	279	6,325	44.68	333	6,658
All Regions	32,676	3,179	35,855	avg 61.26%	749	36,604

An analysis was performed to determine the average amount of coverage in each jurisdiction, and includes data on the number of policies in force and the number of structures in the Special Flood Hazard Areas. Table 6 is a chart representing this information. Overall, the average amount of

coverage is around \$266,000 though the number of policies for each jurisdiction ranges from 19 policies to 23,908. The population of each of these jurisdictions ranges drastically explaining the wide range of differences in the number of policies in force.

Table 6: Flood Insurance Coverage Assessment

Jurisdiction	Residential structures in the SFHA (site built)		Commercial Structures in the SFHA (site built)		Total Structures in the SFHA (including site-built and mobile homes)		# Policies in Force	Premium	Total Insurance in Force Pre/Post FIRM	Average Coverage
	A/AE Zone	V/VE Zone	A/AE Zone	V/VE Zone	A/AW Zone*	V/VE Zone				
Town of Awendaw	223	34	17	3	296	38	65	\$36,943	\$18,857,000	\$290,107.69
Unincorporated Charleston County	10,771	1,149	560	80	12,445	1,276	19814	\$13,249,722	\$5,446,787,400	\$274,895.90
City of Charleston	21,421	1,373	2,950	270	24,465	1,646	23908	\$22,398,374	\$6,313,609,000	\$264,079.35
City of Folly Beach	971	1,143	41	37	1,012	1,180	1664	\$2,774,574	\$419,436,600	\$252,065.26
Town of Hollywood	446	0	26	0	506	0	312	\$139,026	\$44,095,000	\$141,330.13
City of Isle of Palms	3,345	1,030	230	82	3,575	1,112	4019	\$4,544,008	\$1,127,285,200	\$280,488.98
Town of Kiawah Island	3,453	68	56	7	3,509	75	2212	\$1,135,098	\$636,363,800	\$287,687.07
Town of McClellanville	298	22	56	1	355	23	222	\$279,905	\$59,043,600	\$265,962.16
Town of Meggett	552	2	34	1	642	3	262	\$159,855	\$72,081,500	\$275,120.23
Town of Mount Pleasant	13,852	1,216	701	220	14,569	1,437	14898	\$8,067,500	\$4,306,565,100	\$289,070.02
City of North Charleston	2,128	1	834	18	3,789	19	1751	\$1,448,891	\$415,501,500	\$237,293.83
Town of Ravenel	92	0	19	0	192	0	31	\$19,302	\$8,816,900	\$284,416.13
Town of Rockville	37	37	1	1	39	38	19	\$41,655	\$5,286,500	\$278,236.84
Town of Seabrook Island	2,149	89	34	3	2,183	92	1063	\$645,897	\$300,248,000	\$282,453.43
Town of Sullivan's Island	493	535	17	12	510	547	879	\$1,819,441	\$266,405,500	\$303,077.93
Town of Summerville	200	0	1	0	201	0	167	\$76,603	\$43,947,800	\$263,160.48
Town of Lincolnville	165	0	24	0	255	0	n/a	n/a	n/a	n/a
Town of James Island	2,885	190	68	1	2,972	191	n/a	n/a	n/a	n/a
Totals	63,481	6,889	5,669	736	71,515	7,677	71286	\$56,836,794	\$19,484,330,400	\$266840.34 average

Because the Charleston area includes roughly 72,000 existing policies, it is important to keep the public aware of the importance of flood insurance because this area is still growing drastically. Thousands of new homes are constructed or added on to every year and new residents are moving to the area every day. Keeping new and existing residents informed about flood hazards and flood insurance is an essential part of public information activities due to the vast nature of the hazards in our area.

In conclusion, the Committee along with assistance from Charleston County employees, have determined some items that are necessary to improve flood insurance coverage after evaluating the flood insurance assessment. This plan includes:

1. Have a home evaluation:
 - a. Review existing elevation certificate
 - b. Most Pre-FIRM homes do not have elevation certificate
 - i. Get an elevation certificate

2. Areas that may lower the lowest floor elevation:
 - a. Enclosures below BFE without flood vents
 - i. crawl space
 - ii. garage
 - iii. storage
 - iv. areas under stairs
 - v. elevator shaft
 - b. Unpermitted living area below BFE

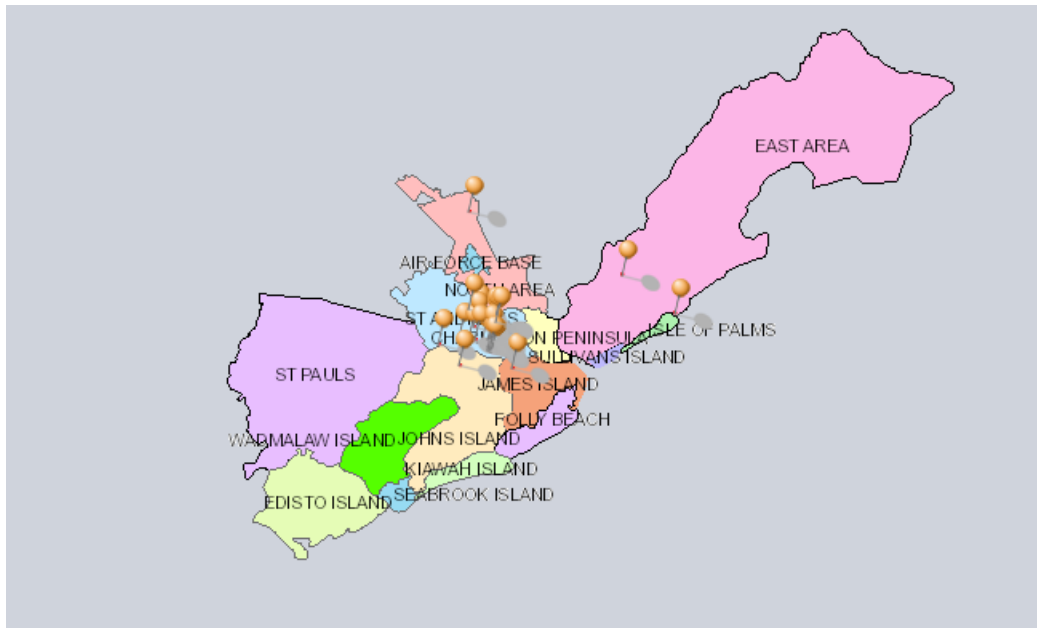
3. After evaluation and elevation certificate review, areas that may need retrofitted:

- a. Elevate Finished floor or lowest horizontal structural member
 - i. Homes built Pre-Firm
 - ii. BFE changed with map updates
 - b. Additional flood vents in enclosure to equal 1 square inch per 1 square foot
 - c. Remove unpermitted living space below BFE
 - d. Raise mechanical equipment/ductwork
 - e. Install flood vents in elevator shaft
4. After retrofit:
- a. Get new elevation certificate
 - b. Get new rate on insurance

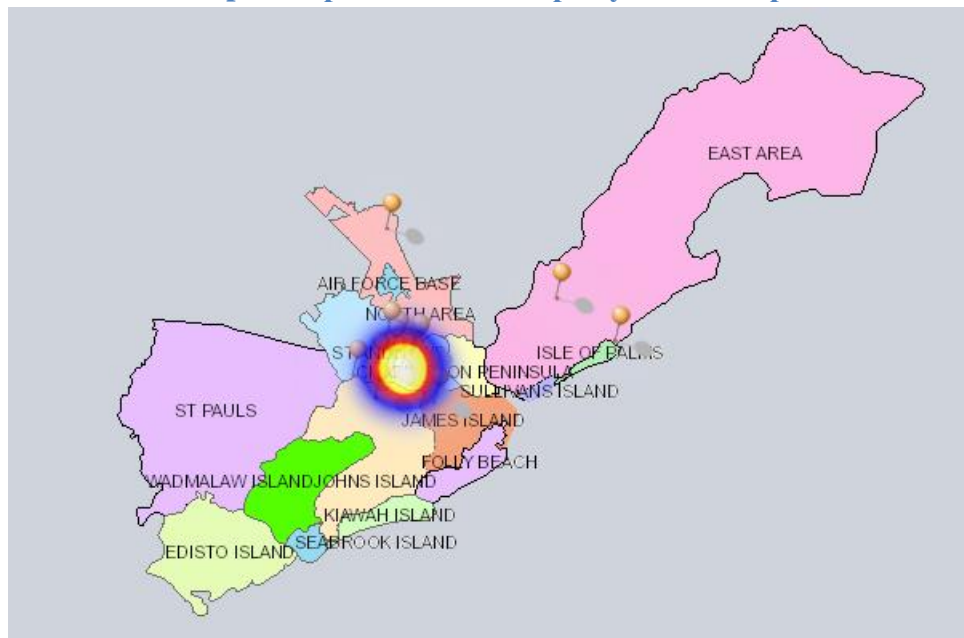
Repetitive Loss Properties

Repetitive loss properties are a serious issue in communities across the United States. Repetitive loss properties drain funds that are needed for preparation of possible catastrophic events, initial rise in the National Flood Insurance's annual revenue losses, and subsequently cause a burden on the National Flood Insurance Program. According to 2017 Repetitive loss data, Unincorporated Charleston County has 27 repetitive loss properties. A thorough review of the specific underlying causes of the repetitive loss properties has been completed, indicating that the majority of properties all had a similar issue- they were equipped with a very poor drainage system surrounding each property. In an effort to increase awareness and work towards reducing this issue, drainage improvement plans have been included in the 2017-2018 *Charleston Regional Hazard Mitigation Plan*. In addition to the drainage improvement projects, individualized outreach continues to take place for these properties to inform residents, affected citizens and/or businesses of the improvement plans in effect to reduce the drainage issues affecting their properties. Maps 1 below identify the locations of repetitive loss properties and Map 2 is a heat map identifying the concentration areas where repetitive loss occurs.

Map 1: Repetitive Loss Map



Map 2: Repetitive Loss Property “Heat Map”



Target Audiences

Based on discussion and agreement from the members of the Hazard Mitigation & Public Information Plan Committee the target audiences and outreach methods are based on providing the most effective means in disseminating the topics and messages established by the Committee with the goal of reaching and informing the public to the greatest extent possible. The target audiences established by the Committee include the following:

- General Public
- Residences and businesses in the Special Flood Hazard Areas (SFHA)
- Newcomers to the area/ tourists
- Real Estate and Insurance Agents/ Real Estate Buyers & Sellers
- Repetitive Loss Area Residents
- Non-English speaking community
- Design Professionals/ Contractors
- Others as determined by the Committee

Outreach Methods

The Committee also established outreach methods that they found to be most effective. The methods include the involvement of local government but other outreach methods will be completed by non-government stakeholders of the Committee. The established outreach methods include the following:

- Mailers and/ or email
- Expos
- Presentations to specific groups (homeowners' associations, construction associations, school programs)
- Printed Materials (brochures, flyers, booklets, etc.) in public places, expos and presentations
- Social media (Facebook, Twitter, YouTube, Web)
- Charleston County Website
- Newspaper, radio, TV, phonebook ads
- Billboards
- School fairs, conferences and/or demonstration projects
- Training for general public (i.e., CERT and Neighborhood Association Officers)

Existing Public Information Efforts

The Public Information Plan within the *Charleston Regional Hazard Mitigation Plan* has become a roadmap for all community information systems for Project Impact programs. Charleston County became a Project Impact community in 1988 and has set the stage for establishing effective public information methods. Table 7 below describes existing public information activities occurring within Charleston County by different departments, jurisdictions, agencies and businesses.

Table 7: On-Going Public Information Activities

Activity	Type of Organization	Funding Mechanism
Mailing hazard brochures to all residents	Local Jurisdictions, FEMA, SC DNR, US ACOE	General Fund Grant Funding
Providing literature to citizens at offices/places of business	Local Jurisdictions, FEMA, SC DNR, US ACOE, USGS, American Red Cross, S. C. Sea Grant Consortium, DHEC OCRM, media providers	General Fund Grant Funding Donations
Television Advertisements	FEMA, media providers, Corporate sponsors	General Fund Grant Funding Donations
Participating in Hazard Awareness Weeks	Local Jurisdictions, American Red Cross, Corporate sponsors, US ACOE; National Weather Service	General Fund
Newspaper advertisements	Local Jurisdictions, FEMA, American Red Cross, SC DOT, DHEC OCRM	General Fund
Providing speakers for schools/groups	Local Jurisdictions, US ACOE, SC DNR, DHEC OCRM, FEMA, American Red Cross, SC DOT, S.C. Sea Grant Consortium, USGS; National Weather Service	General Fund Grant Funding
Mailing hazard brochures to floodplain residents	Local Jurisdictions	General Fund
Participating in hazard-related/product expos	Local Jurisdictions, American Red Cross, media providers, National Weather Service	General Fund Grant Funding
Providing courses for school children re: hazard preparedness	FEMA, Earthquake Education Center, State Fire Marshal, SC EPD, Local Jurisdictions,	General Fund
Providing hazard-related information on internet web pages	Local Jurisdictions, FEMA, NOAA NWS, SC DNR, US ACOE, USGS, American Red Cross, SC DOT, Sea Grant Consortium, media providers	General Fund
Providing post-disaster educational services, such as but not limited to, literature distribution, media announcements, speaking to groups of residents, etc.	American Red Cross, Local Jurisdictions, FEMA, ACOE, SC DOT, media providers	General Fund Grant Funding

Topics and Messages

The Hazard Mitigation & Public Information Plan Committee has established ten topics with ten or more messages each. These topics and messages were chosen and formulated based on the region’s vulnerabilities to hurricanes, tropical storms and associated flooding. Below is a listing of each topic and associated messages:

1. Know Your Flood Hazard

1. Determine if your property is in the Special Flood Hazard Area (SFHA) Zone “A” “AE” or “VE”. Contact your local government for a flood zone determination.
2. Check for historical flooding records in your area with your local government or media outlets.
3. Check for existing elevation certificates with your local government or insurance agent.

4. If you need an elevation certificate contact a local land surveyor.
5. Check the depth of the Base Flood Elevation (BFE) above or below building's first floor or above existing grade on a vacant parcel.
6. Get a FIRMette of your location (www.msc.fema.gov) or look at a flood map at your local government offices to determine proximity to a flood hazard area.
7. Check to see if your property is in an area subject to wave action ("V" Zone) or coastal erosion. Contact your local government for assistance.
8. Know the proximity of property to evacuation routes.
9. Determine if property is protected by man-made structures such as levees or dams.
10. Check for localized drainage issues that could result in flooding in your neighborhood.

2. Insure Property For Your Flood Hazard

1. Flood insurance is available through the National Flood Insurance Program; contact your insurance agent for details.
2. All developed properties within the designated flood hazard area should have flood insurance for buildings and contents. Federally backed mortgages must have flood insurance.
3. Most homeowner's insurance policies do not cover flood damage so you will likely need a separate policy.
4. Renters contents are not covered by the building owner's insurance and renters should purchase contents only flood insurance.
5. Property owners should inquire about any discounts that may apply in purchasing flood insurance.
6. If your flood insurance premium increases significantly, make sure your agent is using the correct information to rate your policy.
7. Know when building(s) were constructed, as 'grandfathering' may apply in reducing flood insurance costs.
8. Do not procrastinate; a 30-day waiting is typically required for flood insurance to take effect.
9. Ask questions from insurance agents concerning specific policy information.
10. Research building permit records for history of property improvements.

3. Protect People from the Hazard

1. Be aware of roadways susceptible to flooding during heavy rainfall events, do not drive through flooded areas, flowing or standing water.
2. Pay attention to media (TV, radio, internet) for emergency warnings and instructions.
3. Select an out-of-town contact for family members' in the event local telephone service is disrupted.
4. Designate a location/place where family or people you are responsible for can rendezvous once an evacuation order is issued.
5. Get an evacuation route map for each vehicle and evacuate early if a flood threat is pending.
6. Avoid contact with downed power lines.
7. Check government web sites (fema.gov, charlestoncounty.org) for flood safety information.
8. Stay away from areas subject to flooding during heavy rainfall events – do not wade through standing water.
9. Avoid contact of flood waters as this water may contain toxic materials or venomous animals or insects.
10. Get a weather radio to obtain flood-related weather reports at all times.

4. Protect Your Property from the Hazard

1. Shut off gas service to a building if a flood is imminent.
2. Disconnect electricity at the main disconnect if a flood is imminent.
3. Replace utility machinery above the required flood elevation.
4. Elevate the lowest habitable floor area above the required flood elevation.
5. Landscape in a hazard resistant manner.
6. Make plans for evacuating pets in the event of a flood, as most shelters do not accept pets.
7. Install backflow prevention on plumbing systems susceptible to flooding.
8. Sandbag areas subject to flooding.
9. Provide hurricane protection against wind borne debris for windows and doors.
10. Move valuables to the highest level of a building or evacuate with these when a flood is imminent.
11. Use flood resistant materials in areas below the expected flood elevation to minimize damages.

5. Build Smart

1. Hire design professionals who are familiar with local hazards in preparing construction plans.
2. Consult with your local building department concerning permit requirements.
3. Place buildings in areas with lower flood potential.
4. Obtain permits before you build – permits are required even if the property owner does the work himself/herself.
5. Only hire licensed contractors.
6. Ensure that building inspections are properly arranged and completed.
7. If you are renovating a building, determine if you are performing a substantial improvement ($\geq 50\%$).
8. Check the local flood ordinance for construction requirements.
9. Minimize the use of structural fill in constructing buildings.
10. Obtain a firm written quote from the contractor detailing exact work to be performed; the exact cost and schedule of start and completion of project.

6. Protect Natural Floodplain Functions

1. Protect wildlife habitat areas.
2. Protect dunes as these moderate flooding and erosion.
3. Preserve wetlands – they clean the water, protect us from flooding and provide wildlife habitat.
4. Do not dump anything into the storm drainage system as these discharge into our coastal waters.
5. Every property should plant only native plants, particularly along water bodies.
6. Obtain permission from the SC DHEC before doing any work near a wetland or dune area.
7. Minimize clearing near wetlands and/or water bodies.
8. Establish buffers and set buildings back from wetlands and/or water bodies.
9. Maintain on-site wastewater treatment systems, such as pumping out of septic tanks, every 3 to 5 years.
10. Don't dump boat sewage into waterways. Use pump-out stations to protect water quality and wildlife habitats.

7. Hurricane Preparedness/Safety

1. Know your evacuation route; obtain published maps.
2. Attach plywood or install commercially manufactured hurricane shutters over windows and patio doors.

3. Evacuate early and follow established evacuation routes when there is a potential hurricane threat.
4. Move valuables and furniture to higher areas of the dwelling.
5. Avoid low lying areas. Seek shelter in the highest areas.
6. Avoid driving if dangerous flooding conditions are imminent.
7. Stay alert to weather advisories and local media broadcast updates.
8. Monitor the track of all hurricanes.
9. Download a copy of the Charleston County Hurricane Guide at www.charlestoncounty.org
10. Make sure you have an emergency kit on-hand and that it is properly supplied.
11. Do not leave anything outside that is not property anchored. Store items in a garage or shed on an elevated area if possible.

8. General Hazard Preparedness

1. Inventory and photograph your home and business contents and put important papers and insurance policies in a safe place.
2. Have an emergency kit on hand. Check government web sites (fema.gov, American Red Cross, charlestoncounty.org) for items to include.
3. Listen to emergency broadcasts from local media outlets as to when it is safe to return or contact local government authorities prior to returning to property after the storm has passed.
4. Have an emergency generator. Make certain it is properly installed.
5. Have contact information available to properly reconnect utility services (electrical and gas) and licensed contractors you may need if you have damages.
6. Have property inspected determine the extent of damages.
7. Have insurance agent contact information readily available to file a claim. Understand how to file a claim.
8. If you smell gas upon your return immediately contact your utility company or emergency personnel. If your property has been flooded or otherwise damaged, do not turn on any electrical switches and/or appliances and do not occupy the dwelling until you are told it is safe to do so.
9. Annually inspect home or business for ordinary objects that may pose a hazard during a flood event and have these objects properly secured.
10. Post a note telling others when you left and your destination.
11. Consider volunteering to help flood victims.
12. Develop a disaster plan.

9. Flood Education

1. Include flooding topics as part of school curriculum in science or social studies classes.
2. Gather information on preparing for floods at expos and other public events.
3. Schedule presentations for your neighborhood association or organization to which you belong on hazard event preparations.
4. Attend business community planning workshops to learn how to protect your business from hazard events.
5. Educate youth on hazard events and environmental issues.
6. Listen to the media regarding hurricane season and proper preparation.
7. Attend training seminars for personnel concerning regulatory changes, construction methods, construction materials, etc.
8. Encourage youth to research on hazard related topics and share what they learn with others.
9. Look at social media sites (Facebook, You Tube) for information on hazard preparations and environmental protection.
10. Search the internet for hazard related information.

10. Site Drainage

1. Remove standing water with portable sump pump once flood waters have receded.
2. Remove wet insulation and drywall.
3. Allow crawl space to dry and then check for mold, mildew and rot.
4. If crawl space is damaged make needed repairs but obtain permits first.
5. Check for damage to electrical components and utility lines (gas and electric) and contact licensed trade person to complete repairs - obtain permits first.
6. Maintain floor level of crawl space above adjacent grade to reduce water getting into the crawl space.
7. Use flood resistant materials in crawl space areas.
8. Do not store valuables in crawl space areas.
9. Make sure your crawl space is properly vented or engineered to reduce moisture related damage.
10. Grade site to provide runoff from crawl space and building.

Outreach Projects

Table 8 below represents proposed and continuing outreach projects established by the Hazard Mitigation & Public Information Plan Committee. These outreach projects serve all different audiences and address multiple topics and messages. When the Committee meets, they determine if projects will be continued depending upon their effectiveness. Some outreach projects are completed by Charleston County staff while other outreach projects are offered by stakeholders. The topics cover many different CRS activities including: Activity 340, Activity 350, Activity 370, Activity 510, Activity 540 and Activity 610.

Table 8: Outreach Projects

Topics (please see PPI document pages 16-20 for list of messages for each topic):		Target Audiences (PPI document pages 14-15):					
1. Know your flood hazard. 2. Insure property for your flood hazard. 3. Protect people from the hazard. 4. Protect your property from the hazard. 5. Build smart. 6. Protect natural floodplain functions. 7. Hurricane preparedness/safety. 8. General hazard preparedness. 9. Flood education. 10. Site drainage.		1. General Public 2. Residents and businesses in the Special Flood Hazard Areas (SFHA) 3. Newcomers to the area/ tourists 4. Real Estate and Insurance Agents/ Real Estate Buyers & Sellers 5. Repetitive Loss Area Residents 6. Non-English speaking community 7. Design Professionals/ Contractors 8. Others as determined by the Committee					
CRS #1	Project Impact	CRS #2	CRS #3	CRS #4	CRS #5	CRS #6	CRS #7
OP#	PPI PROJECT INFORMATION/ DESCRIPTION	TOPIC # (refer to legend)	TARGET AUDIENCE (refer to legend)	OUTCOME	ASSIGNMENT	SCHEDULE/ DISTRIBUTION	STAKEHOLDER
OP# 1	Charleston County HMP Committee Meetings (7/25/12, 8/7/13, 7/8/14, 9/24/14, 9/23/15, 8/31/16, 9/28/16, 6/13/17; scheduled this year for 7/18/17 and 8/22/17). Annual meetings advertised in the paper and open to the public. Committee and public have the opportunity to weigh in on outreach activities and messages that the County will portray in the Hazard Mitigation Plan and outreach activities.	1 - 10	1, 4, 8 (Hazard Mitigation Committee members)	A comprehensive, annually updated regional hazard mitigation plan	Carl Simmons and Building Inspection Services staff members; HMP and PPI Committee members and the public	Annual meetings, 2-3 times per year, advertised and open to the public.	Charleston County
OP# 2	Monthly: Asst. Director Jim Houser Speaks with Tri-County Home Builders Association, 7/17/13, 8/21/13, 9/18/13, 10/16/13, 11/20/14, 1/15/14, 2/19/14, 3/9/14, 4/16/14, 5/21/14, 6/18/14, 1/21/15, 2/18/15, 3/18/15, 4/15/15, 5/20/15, 6/17/15, 7/15/15, 8/19/15, 9/16/15, 10/14/15, 1/20/16, 2/17/16, 4/20/16, 5/18/16, 8/17/16, 10/19/16, 11/16/16, 1/18/17, 2/15/17, 3/15/17, 4/19/17, 5/17/17, 6/21/17	1 - 10	7	Increased compliance with all building codes and regulations; educate professional on mitigation techniques.	Jim Houser, Assistant Director or Carl Simmons, Director of Building Inspection Services	Regular monthly meetings on the 3rd Wednesday of every month starting in Sept. 2013 to present.	Tri-County Home Builders Association
OP#3	Charleston County Press Release: Charleston County Launches New Emergency Notification Program for Citizens. The updated system will allow the County to reach citizens with location specific information at multiple addresses and across multiple platforms 11/18/14	1, 3-4, 7-8	1, 3	Notify all citizens of Charleston County of warnings through home and cell phones, text messages, emails and fax; increase awareness of hazards and staying safe.	Charleston County Emergency Management Department	Launched Nov. 2014, continued and website still active, maintained and operating daily.	Charleston County
OP# 4	Annual MUSC Hurricane Awareness Day 5/23/12, 5/22/13, 5/20/14, 5/28/2015, 5/26/16 and 5/31/17). Building Inspection Services staff set up a booth at the expo and informed citizens about hazards and provided brochures conveying all messages (brochures provided: OP#12, 13, 14, 15, 16, 19/19a, 26, 33; FRP # 3, 9, 10, 11, 14, 15, 16, 17; CPI #4, 6, 7, 8, 12, 13)	1 - 10	1, 2, 3, 4, 5, 6, 7	Increase understanding and information to public on hazards that affect our area and ways to prepare their homes and themselves for hazards.	Building Inspection Services Staff	Participate in the expo annually beginning 5/23/12, 5/22/13, 5/20/14, 5/28/15, 5/26/16, 5/31/17	MUSC
OP# 5	"Living In a Flood Zone" Roundtable Discussion with Charleston County Council Member Anna Johnson 1/22/14, 10/28/15, 3/11/16, 5/24/17. Presentation, public meeting, and one-on-one information session. Annual participation (brochures provided: OP# 12, 13, 14, 15, 16, 19/19a, 26, 33; FRP 10, 11, 13, 14; CPI #4, 6, 7, 8, 9, 12, 13)	1 - 5, 9, 10	1, 2, 3, 5, 7	Increased number of map info inquiries from property owners and actions taken by public to mitigate flood hazards	Council Member Anna Johnson and Building Inspection Services staff	Public meeting and information session held on 1/22/2014, 10/28/15, 3/11/16, 5/24/17	Charleston County Council
OP# 6	Building Inspection Services staff participated at the County Square at the Black Expo annually where they talked to residents about mitigating risks to their property and protecting themselves in the event of hazards - 3/15/14, 3/15/15, 3/12/16, 3/11/17. (Brochures provided: OP# 12, 13, 14, 16, 17, 18, 19/19a, 20, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33; FRP # 3, 8, 9, 12, 17, 18; CPI #4, 5, 6, 7, 8, 12)	1 - 10	1, 2, 3, 4, 5, 8 (African American community)	Increased understanding of flood risk and ways to mitigate it by the entire community.	Building Inspection Services Staff	Annually attended expo since 2014. 3/15/14, 3/15/15, 3/12/16, 3/11/17	Black Expo
OP#7	Project IMPACT Mini-Grant (STOMP award)- awards given to teachers/ sponsors seeking to fund a special lesson on hazard mitigation and/or environmental protection. Annual program since 2015; teachers are required to submit details of project and photographs. Award dates: 2/4/2015, 2/10/16, 1/6/17	3, 8, 9	8 (other) Teachers and other educational-type leaders and students or children under the age of 18	Support local schools/ programs in informing children about hazards and mitigation efforts that can be taken.	Building Inspection Services Staff	Annually awarded mid-school year for project completion by the end of the school year. Award dates: 2/4/15, 2/10/16, 1/6/17	Project Impact
OP# 8	Annual Rain Barrel Sale and advertisement to promote harvesting rainwater, reducing runoff and promoting water quality protection. Started May 2014 and continued annually.	6, 10	1	Increased use of rain barrels and promote water quality protection.	Charleston County Stormwater Management department	Annual program advertised to the public, started May 2014 and continues in May of every year.	Charleston County
OP #9	Annual: Community Disaster Awareness Day - participated in annually to educate residents of Charleston County area on the hazards in the area and how to prepare for them. (Brochures provided: OP #12, 13, 14, 15, 16, 17, 19, 23, 24, 25, 26, 27, 31, 32, 33; CPI #4, 5, 8, 10; FRP #8, 9, 12, 13, 14, 16)	1-4, 7-9	1, 2, 4, 5	Increase understanding and information to public on hazards that affect our area and ways to prepare their homes and themselves for hazards.	Building Inspection Services Staff	6/22/10, 6/12/14, 6/11/15, 5/26/16, 6/15/17	Project Impact
OP# 10	Annual: Summer Countywide Hurricane Billboards on Interstates and Major Roads	1, 3, 4, 7 - 10	1	Increased Public Awareness of Hurricanes	Charleston County Emergency Management Department	2014, 2015, 2016, 2017	Project Impact
OP# 11	Annual Expo: Lowcountry CERT Hurricane Expo 6/1/13, 5/18/14, 6/1/14, 5/9/15, 6/4/16, 5/7/17. Building Inspection Services staff set up a booth at the expo, answer questions from the public and handout 10+ brochures informing of hazards and ways to protect their property and themselves. (Brochures provided: OP# 12, 13, 14, 15, 16, 17, 19/19a, 20, 21, 22, 23, 24, 27, 30, 31, 32, 33; FRP # 3, 9, 10, 11, 14, 15, 16, 17; CPI # 4, 6, 7, 12, 13)	1 - 10	1, 2, 3, 4, 5, 6, 7	Increased understanding of flood and hurricane risk and ways to mitigate it by the entire community	Building Inspection Services Staff	Annually attended expo 6/1/13, 6/1/14, 6/4/16	Lowcountry CERT; Lowe's
OP# 12	County-wide mailer/ brochure: "Flooding: The Risk Is Real. Are You Prepared?"	1 - 10	1, 2, 3, 4, 5, 7	Increased understanding of flood risks and ways to mitigate.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. Available in office, at libraries and taken to Expos attended. Mailed out to ALL flood zone residents and provided to all jurisdictions to reproduce and make available in their offices.	Project Impact
OP# 13	Brochure: "A Homeowner's Guide to Flood Protection"	1-5, 9-10	1, 2, 3, 5	Improved public knowledge about the importance of obtaining permits and hiring licensed contractors.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office, at libraries and taken to Expos attended.	Project Impact
OP# 14	Brochure: "Safeguard Your Personal Property from Flooding"	1, 3, 4	1	Improved knowledge about how to protect personal valuables from flooding by the general public	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office, at libraries and taken to Expos attended.	Project Impact
OP# 15	Brochure: "If your home or business has been flooded"	1, 2, 4, 5, 6	1, 2, 3, 5, 7	Improved knowledge about what to do if your home or business is flooded	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	FEMA
OP# 16	Brochure: "NFIP Nothing Can Dampen the Joy of Home Ownership...."	1, 2, 4, 6, 9	1, 2, 3, 4, 5, 7	Increased number of flood insurance policies	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	FEMA
OP# 17	Brochure: "Stay Safe: A Guide for Visitors to Charleston"	1, 3, 7	1, 2, 3, 5, 7	Increased number of visitors/newcomers educated about local hazards and how to stay safe	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office, at libraries and taken to Expos attended.	Project Impact and Charleston Area Convention and Visitors Bureau
OP# 18	Brochure: "Increased Cost of Compliance Coverage"	1, 2, 5	1	Improved public knowledge about the cost of compliance coverage.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	FEMA

OP# 19	Brochure: "Flood Preparation and Safety"	1 - 4, 9	1	Increased knowledge of flood hazards and ways to mitigate them.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	FEMA
OP# 19a	Brochure: "Flood Preparation and Safety - Spanish"	1 - 4, 9	1, 6	Increased knowledge of flood hazards and ways to mitigate them (Spanish speaking).	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	FEMA
OP# 20	Brochure: "Prepare for emergencies now: Information for People with Disabilities"	1, 3, 4, 8	1, 8 (people with disabilities and those that care for them)	Increased knowledge about how people with disabilities are affected by hazards, how they can mitigate them, and how to protect themselves.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	FEMA/ Red Cross
OP# 21	Brochure: "NOAA Extreme Weather Information Sheet"	1, 3, 8	1	Improved disaster and inclement weather preparedness by the general public.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	National Coastal Development Center
OP# 22	Brochure: "Marine Vessel Cleaning and Maintenance"	8	1, 8 (boat owners)	Reduction of water and sediment-related pollution in the port environment.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	Project Impact/ United States Environmental Protection Department
OP# 23	Brochure: "Protect your Windows and Doors from Winaborne Debris"	1, 2, 7	1	Increased public knowledge of how to protect doors and windows in the event of a hurricane/tropical storm.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in offices and taken to Expos attended.	Project Impact
OP# 24	Brochure: "Hazard Resistant Landscaping"	1, 4, 6, 7	1	Decreased landscape clippings before hurricanes/storms and increased usage of landscaping techniques that help prevent flooding.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office and taken to Expos attended.	Project Impact/ Clemson Extension Services
OP# 25	Brochure: "Earthquakes: Are You Ready?"	1, 2 - 4, 8	1	Increased knowledge of earthquakes and how to stay safe during one.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office and taken to Expos attended.	Project Impact/ Charleston Southern University Earthquake Education Center
OP# 26	Brochure: "Just Let Rain Go Down The Drain (No Dumping)"	1, 7, 10	1	Increased knowledge of the importance of keeping drainage channels clear and greater compliance.	Building Inspection Services Staff	This brochure is available in offices and taken to Expos attended.	Charleston County Solid Waste and South Carolina Department of Health and Environmental Control (SCDHEC)
OP# 27	Brochure: "South Carolina Hurricane Guide"	1 - 5, 7 - 9	1	Increased knowledge of hurricanes and protection recommendations.	Building Inspection Services Staff	This brochure is available in offices and taken to Expos attended. Updated annually.	South Carolina Emergency Operations Division/ SCE&G
OP# 28	Brochure: "South Carolina Earthquake Guide"	1 - 5, 7, 8	1	Increased knowledge of earthquakes and how to stay safe during one.	Building Inspection Services Staff	This brochure is available in offices and taken to Expos attended.	South Carolina Emergency Management
OP# 29	Brochure: "The Charleston Earthquake Tour"	3-5, 8	1	Increased knowledge of earthquakes and how to stay safe during one; history and lesson learned during previous earthquakes explained.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office and taken to Expos attended.	College of Charleston
OP#30	Brochure: "A Boat Owner's Guide to Storm Preparation"	3, 4, 7, 8	1, 8 (boat owners)	Improved knowledge about how to prepare boats for a storm.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in offices and taken to Expos attended.	Project Impact
OP#31	Brochure: "Tornadoes: Are You Ready?"	3, 4, 5, 8	1	Increase knowledge about tornadoes and how to stay safe during one.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office and taken to Expos attended.	Project Impact
OP#32	Brochure: "Hurricanes & Tropical Storms: Are You Ready?"	1-5, 7-8	1, 2, 3, 5	Increase knowledge of hurricanes and tropical storms and how to stay safe during one.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office and taken to Expos attended.	Project Impact
OP#33	Brochure: "Shopping for Your Dream Home? Know & Prepare for Flood Risk Before You Buy"	1-5, 9	1, 2, 3, 5	Increase knowledge of flood insurance and flood risks for potential homebuyers and how to protect their homes after purchase.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office and taken to Expos attended.	Project Impact
OP#34	Brochure: "Your Family Disaster Supplies Kit"	1-5, 7-9	1, 2, 3, 5	Increase awareness about supplies that people should have on hand in the event of a disaster.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	FEMA/ Red Cross
OP#35	Brochure: "Preparing your Pets for Emergencies Makes Sense"	1, 3-4, 7-9	1, 3	Increase knowledge about protecting your pets during an event or in an evacuation.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	FEMA
OP#36	Brochure: "Safety First! Disaster Preparedness"	1-5, 7-9	1, 2, 3, 5	Inform residents about how to prepare homes for disasters and staying safe during a storm.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	International Codes Council ICC
OP#37	Guide Book: "Floodplain Management in South Carolina Quick Guide"	1-10	1, 2, 3, 4, 5, 6, 7, 8 (local area building, zoning and emergency government departments)	Inform residents of the objectives of floodplain management, purchase of flood insurance, regulations affecting building in a flood zone.	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	SC Department of Natural Resources
OP#38	Brochure: "Floody the Flood Dog (children's flood word search)"	1, 3, 7-9	1, 3, 8 (children of the area)	Inform children about flood risks and staying safe in an event.	Building Inspection Services Staff	Available year-round; recently updated to include more messages and topics. This brochure is available in office, at libraries and taken to Expos attended. Also distributed to school district camp locations, reaching 330 students.	Project Impact

OP #39	Annual: Charleston Home and Remodel Expo ; 2017 was first year of the expo; will attend in following years	4, 5, 7-10	1, 2, 3, 4, 5, 6, 7	Inform public about mitigation measures that can be taken during renovations; inform about flood insurance, property protection and staying safe.	Building Inspection Services Staff	Plan to attend Expo annually, this was the first year 3/3/17-3/5/17	Project Impact
OP #40	Preliminary FEMA Flood Map Presentations and Open Houses ; conducted throughout the County, North Charleston, City of Charleston, Mt. Pleasant, Johns Island (City of Chas and Unincorp), James Island (City of Chas, Unincorp and Town of James Island); Town of Seabrook, Town of Kiawah	1, 2, 6	1-5, 7	Inform public of new flood designation, review flood zones and hazards, purchase of flood insurance, changes in flood zones, when maps will go into effect; how new data was collected.	Building Inspection Services Staff	3/20/17, 3/21/17, 3/22/17, 5/24/17, 5/30/17 (and continuing upon request by different jurisdictions)	FEMA, Project Impact
OP #41	Brochure: "Call 811 Before You Dig. It's the Law."	3, 4, 5, 8	1, 2, 6, 7	Inform public and contractors on the safety of utility lines and digging when building a home. Double sided; English and Spanish language.	Building Inspection Services Staff	Available year round; this brochure is available in offices and taken to Expos attended. Recently updated.	Project Impact
OP #42	Brochure: "Standby Generator Safety"	3, 4, 7	1, 7	Inform the public on how to safely operate a generator	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	Project Impact, SCE&G
OP #43	Brochure: "Benefits of Building Permits"	4, 5	1, 4, 7	Inform public on what building permits are used for, what requires building permits and the benefits behind them	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	International Codes Council ICC
OP #44	Brochure: "Building Green - Living Better"	1, 4, 5, 6, 8	1-5, 7	Inform public on the benefits of building green, living with your environment and how to design a home	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	International Codes Council ICC
OP #45	Brochure: "Facts About Open Burning"	3, 6, 8	1	Inform public on the hazards of open burning and other ways to reduce waste	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	Project Impact
OP #46	Brochure: "Recreational Boater Education Booklet"	6, 8	1, 8 (fisherman and boaters)	Inform the public on ways to reduce marine debris, minimize sewage impact, and tips for sustainable fishing, boat maintenance and boat fueling	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	Project Impact
OP #47	Brochure: "Help Mow Down Pollution!"	6, 8	1, 4	Inform the public of the pollution from gas powered mowers and offers alternatives	Building Inspection Services Staff	Available year-round; this brochure is available in offices and taken to Expos attended.	Project Impact
OP #48a	Brochure display in upstairs Building Inspection Services Administrative office (Brochures provided: OP #12-38, 41-47)	1-10	1-8	Inform public of all hazards in area, flood insurance, property protection, building codes, safety, contractors, natural benefits.	Building Inspection Services Staff	Available year-round	FEMA, Project Impact, SC DNR, NFIP, ICC, SC DHEC
OP #48b	Brochure display in downstairs Building Inspection Services Inspector and Plan Review office (Brochures provided: OP #12-38, 41-47)	1-10	1-8	Inform public of all hazards in area, flood insurance, property protection, building codes, safety, contractors, natural benefits.	Building Inspection Services Staff	Available year-round	FEMA, Project Impact, SC DNR, NFIP, ICC, SC DHEC
OP #49	Brochure display in local jurisdiction offices: Awendaw (Brochures provided: OP #12-14, 17, 23, 25, 33)	1-10	1-8	Inform public of all hazards in area, flood insurance, property protection, building codes, safety, contractors, natural benefits.	Building Inspection Services Staff	Available year-round	FEMA, Project Impact, SC DNR, NFIP, ICC, SC DHEC
OP #50	Brochure display in local jurisdiction offices: Seabrook (Brochures provided: OP #12, 131 23, 25, 33)	1-10	1-8	Inform public of all hazards in area, flood insurance, property protection, building codes, safety, contractors, natural benefits.	Building Inspection Services Staff	Available year-round	FEMA, Project Impact, SC DNR, NFIP, ICC, SC DHEC
OP #51	Brochure display in local jurisdiction offices: Ravenel (Brochures provided: OP #12-14, 17, 21, 23, 25, 33, 41, 42)	1-10	1-8	Inform public of all hazards in area, flood insurance, property protection, building codes, safety, contractors, natural benefits.	Building Inspection Services Staff	Available year-round	FEMA, Project Impact, SC DNR, NFIP, ICC, SC DHEC

OP#26 is a brochure titled “Just Let the Rain Go Down.... The Drain”. This brochure addresses drainage system maintenance and the regulations that prohibit dumping (CRS Activity 540). See attachment below of the brochure.

Attachment: OP#26 “Just Let the Rain Go Down.... The Drain”

Other Ways To Help

PROJECT IMPACT is a program working to reduce the severity of and the costs associated with flooding and other hazardous events. Through proactive prevention, partnerships between local governments, businesses and residents help to make this happen by developing projects to assist communities preparing for these hazard events.

The *Project Impact Drainage Awareness Program* is one way YOU can directly reduce the likelihood of flooding in your neighborhood and protect your waterways from pollution. Elements of this program include:

- Storm Drain Marker Project** - contact the Charleston Area Project Impact office at (843) 720-6940 or SCDHEC Trident District Office at (843) 740-1590 for information and materials to mark storm drains to alert people not to use them as dumps.
- Reporting Abuses** - use the Litter Watch Hotline, (843) 720-7111, to report littering or dumping in drainage ways, or call the local DHEC office, (843) 740-1590 to report dumping into storm drains. Both of these activities are illegal and offenders can be prosecuted and fined! Or, organize and participate in litter watch and storm drain monitoring programs.


Learn More About It

Education - representatives from Project Impact, SCDHEC and the Charleston County Litter Enforcement staff are available to speak to groups or neighborhood associations. Give them a call to learn more about these programs.

Involvement - get involved in your neighborhood and the community. Set a good example by letting just the rain go down the storm drain

Learn more about it. The EPA website, www.epa.gov is full of information on Nonpoint Source (NPS) Pollution. And, check www.scdhec.net for resources on water quality, solid waste and litter.

Don't Dump Here...



It Ends Up Here!





Paid for with SCDHEC Grant Funding to Charleston County Solid Waste.



*Designed by Charleston County Solid Waste on recycled paper, of course!
Special thanks to Charlynn J.M. Knight from Knight Gallery (843) 723-0140*

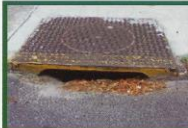
Just Let Rain
Go Down
The Drain...

CHARLESTON COUNTY
SOLID WASTE

13 Rosemary Street
Charleston, SC 29403-3844
(843) 720-7111
www.charlestoncountysc.org

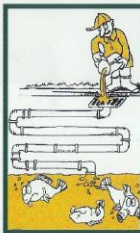
What's A Storm Drain?



It's the grate or opening next to the curb or sidewalk in to which all the water drains after a storm. In some suburban areas or rural settings, the storm drain system may include open ditches that channel water into waterways, creeks and rivers.


Where Do They Go?

The water entering these systems flows to a body of water such as a river, lake or harbor, or even our beautiful marshes. The storm water is not treated or screened in any way before it is released into the body of water. So, whatever goes "down the storm drain" goes directly into Lowcountry waters.




So What's the Problem?

Sometimes storm drains and ditches are carelessly used as dumps or sewers. When we put our trash into our storm drains, we can clog up the drainage system. The next time it rains the water has no place to go, causing flooding of our roads, neighborhoods and homes. Equally serious is the pollution caused by pouring oil, paint or other liquid wastes into the storm drains. Used oil from a single oil change can pollute up to one million gallons of fresh water.



Is This Really A Bad Thing?

YES! The Lowcountry already is affected by tidal influences that can slow storm water drainage. Clogging up the system with leaves, yard waste or litter can lead to serious flooding and erosion. Storm drain cleaning and improvement projects are expensive. Pollution impacts the numbers and health of fish and wildlife, and causes loss of wildlife habitat. Toxins, bacteria and viruses from illegal dumping into storm water can lead to health risks caused by eating contaminated fish or swimming in contaminated waters. Fertilizers and pet wastes getting into storm water change the nutrient levels in our waterways, which can lead to the introduction of invasive species of plants or insects. Any degree of system abuse leads to a decline in quality of life and water, and harm to the ecosystem.



What's The Solution?

- Dispose of used oil at your nearest GOFER (Give Oil For Energy Recovery) collection tank. They're everywhere! Call the Charleston County Recycling Center at (843) 720-7111 for a location nearest you.
- Properly dispose of antifreeze, paints and other household chemicals; **do not** put them in storm drains or ditches. Charleston County residents can take household hazardous materials to the Household Hazardous Materials dropsite at Bees Ferry Landfill, 1344 Bees Ferry Road.
- Clean up spilled brake fluid, oil, grease and antifreeze. **Do not** hose them into the street. An absorbent material like kitty litter soaks up spills, and can be thrown into the trash.
- Keep litter, pet wastes, leaves and debris out of street gutters and storm drains. NEVER sweep yard clippings down the storm drain.
- Clean up after your pets. Pet waste can be bagged and put in your trash, flushed down the toilet (but NOT with kitty litter), or buried at least five inches deep in your garden.
- Apply lawn and garden chemicals sparingly and according to directions. Call the Clemson University Extension Service for advice, (843) 722-5940. Don't apply chemical before a heavy rainfall. Sweep, don't wash, excess off paved surfaces.
- Control soil erosion on your property by planting ground cover and stabilizing erosion-prone areas.
- Water your lawn and garden only when necessary, and then use slow soak methods such as drip irrigation or soaker hoses to reduce runoff.
- Backwashing and draining swimming pools must be done carefully to prevent water pollution and flooding. Keeping the chlorine residual to an almost non-detectable presence prior to discharging is important to protect water quality. Any solid material should be removed prior to discharge.
- Before washing your car, pull it up on the lawn or gravel area to reduce runoff. Use a bucket of water or pistol grip nozzle. The best practice is to go to a commercial car wash, where excess water is properly treated.

Displayed in OP#12, Open Space Preservation (CRS Activity 420) is also an area of great importance to the Charleston community. This area plays host to many beautiful natural habitats,

from the shoreline to marshlands and swamplands to forests. Located within the “Flooding: It Is Real. Are you at Risk?” brochure, natural floodplain conservation is addressed. See attachment below that is available to the public.

Attachment: OP#12 “Flooding: It Is Real. Are you at Risk?”

When Flooding is Imminent

- Begin implementing your emergency plan.
- Remind your family to stay inside and away from all flood waters and downed power lines.
- Listen to local media updates and alerts.
- Move valuables to higher areas.
- Securely anchor or store outdoor furniture.
- Sandbag areas subject to the entry of water.
- If evacuations are ordered, follow instructions, shut off gas and electricity, evacuate promptly, and securely lock your home or business.

During the Flood

- Stay inside. Avoid contact with all flood waters and downed power lines.
- Turn around, don't drown. Never drive through flooded areas or any water.
- Do not wade through any water as it may contain toxic materials or venomous animals or insects.
- Check local media and official websites such as FEMA.gov and CharlestonCounty.org for emergency notifications.
- If your dwelling begins to flood, shut off electricity and gas connections.

After the Flood

- Upon returning from an evacuation, if your building is flooded or otherwise damaged, do not:
 - occupy dwelling until officially notified it is safe.
 - turn on any electrical switches or appliances until you verify that there are no issues or the power company authorizes you to do so.
- If you smell gas, immediately contact your utility company or emergency personnel.
- Contact your insurance agent if you have damage.
- Contact your local jurisdiction for a damage assessment.
 - Remove standing water with a sump pump.
 - Remove wet insulation, drywall, flooring and rugs.
 - Hire contractors only after verifying they are properly licensed.
 - Obtain proper permits for all work.
 - Refer questions or complaints about contractors and permits to the state and/or your local jurisdiction.

Charleston County Building Inspection Services
4045 Bridge View Drive, Suite A311
North Charleston, SC 29405
(843) 202-6930
BuildingServices@CharlestonCounty.org
www.CharlestonCounty.org



FLOODING

The Risk Is Real.

Are You Prepared?

A flood can be devastating.
You don't have to live near
water to be at risk.
The time to prepare is now.



Charleston County Hurricane & Emergency Evacuation Routes

Be Prepared

1. Know Your Flood Hazard

Contact your local jurisdiction to see if your property is in a Special Flood Hazard Area or subject to flooding.

Check historical flooding records in your area with your local government or media outlets.

Know your evacuation routes.

Schedule a site visit by your local jurisdiction to gauge your flood risk and learn flood protection measures.



2. Build Responsibly & Protect Your Property

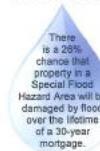
Obtain permits, even if you do the work yourself. Report construction done without permits to your local jurisdiction.

Hire design professionals, who are familiar with local hazards, to prepare construction plans. Verify your contractor is licensed with South Carolina and/or your local jurisdiction.

Set buildings back from water and wetlands. Use flood resistant material. Elevate the lowest habitable floor and place utility machinery per local requirements. Install backflow prevention on plumbing systems susceptible to flooding.

Libraries, government offices, and the internet have extensive information on flood prevention measures.

Federal aid may be available for retrofitting, relocating, or demolishing structures with repetitive flooding. Contact your jurisdiction or Charleston County Building Inspection Services at (843) 202-6930 to learn more.



3. Purchase Flood Insurance

Usually, homeowners insurance does not cover floods. Only flood insurance covers floods. Flood insurance is available to owners and renters of residential and commercial properties under the National Flood Insurance Program (NFIP) and can be purchased through a licensed insurance agent.

NFIP policies can cover the building, the contents, or both. All properties in the Special Flood Hazard Area, with a federally backed mortgage, must have flood insurance. Everyone else should have flood insurance.

Visit FloodSmart.gov or contact your insurance agent for details. Your agent may require an elevation certificate to get you a quote. If you do not have an elevation certificate, contact your local jurisdiction to see if it is on file. If not, contact a surveyor, engineer or architect to prepare one.



Prepare now in case of a future event. Inventory and photograph your building's contents and store this information in a safe place.

4. Protect People from the Hazard

Be notified when there is an emergency. Register for CodeRED Emergency Phone and Text Alerts at SCDem.org. Download the FEMA and Charleston County Emergency Management Department apps. Follow @ChasCountyGov and @SCCEMD on Twitter and follow the Facebook.com/EMDChasCo/ page. Monitor local media for the latest information and official instructions.

Create an emergency kit with supplies for at least three days. You may also consider creating a more portable kit to take with you in case of evacuation.

Develop an emergency plan and keep copies of it in your supply kit and share it with your family.

Your plan should include:

- A strategy for family communication. Appoint an out-of-town relative as a point person for everyone in your household to contact. Find out how your family's schools and workplaces will communicate with you during an emergency.
- Details on how you will safely shelter in place or evacuate. Keep evacuation route maps in each car and incorporate these routes into your plan.
- Requirements of household members with special needs.
- Caring for your pet(s) if you shelter in place or evacuate. Know that most shelters prohibit pets.

To learn more about preparing your emergency supply kit and emergency plan visit FEMA.gov or Ready.gov or SCDem.org.

5. Keep Drainage Channels Clear

Keep drainage channels and catch basins free from obstructions to reduce flooding during heavy rains. Residents are asked to maintain the channels near their property by removing or reporting obstructions such as trash and tree limbs.



Request a ditch cleaning or report dumping violations, before a storm occurs, by contacting your local jurisdiction.

6. Protect Natural Floodplain Functions

Wetland areas and oceanfront sand dunes help protect property from flooding. Preserve these areas. Keep them clean and do not walk on sand dunes.

Report disturbances to beachfront and wetland areas to the Office of Ocean and Coastal Resource Management of the South Carolina Department of Health and Environmental Control at (843) 953-0200.

Help support natural floodplain functions by using landscaping to establish vegetative buffers using only native plants and minimal amounts of fertilizer.

Flood Protection Assistance (Activity 360) and Flood Insurance Promotion (Activity 370)

A Coverage Improvement Plan is included within this Public Information Plan to further incorporate the promotion of flood insurance purchase throughout the county. Because this is an area of mixed economic statuses, all avenues of outreach methods should be utilized including direct mailers to citizens, availability of brochures at all jurisdictional offices, participation at expos and other events pertaining to disasters, public awareness or even remodeling shows, really is the most effective way to get information out to the community. This plan has been, and continues to be, implemented on many levels to get the information out to citizens that purchasing flood insurance is essential. In order for the Coverage Improvement Plan portion of this Public Information Plan to qualify for Activity 370 credit, a draft of this document was submitted to the FEMA Region V insurance liaison for review and comment.

Because flooding is one of the top ranked issues that the Hazard Mitigation & Public Information Plan Committee has identified, several outreach projects have been developed to inform the public about the importance of flood insurance and assist the public with information pertaining to flood protection. This assistance comes in many forms; from one-on-one contact to help a homeowner with flood protection measures to presenting at a hurricane expo about flood insurance. Many of the public information outreach activities listed in Table 8 on pages 478-480 address flood protection. In addition to these OP outreach projects, CPI (Coverage Improvement Plan- Activity 370) projects have been established to encourage residents and special groups to promote the purchase of flood insurance. These projects are identified, along with topics, target audiences, assignments and schedule of distribution in Table 9 on page 484.

Other outreach methods have been addressed to directly inform people at expos and special presentations. Table 10 (page 485) is a listing of last year's direct contact presentations to the public addressing flood protection assistance, including property protection advice, protection advice provided after a site visit, financial assistance advice, and advisor training (CRS Activity 360) as well as flood insurance promotion (CRS Activity 370). Charleston County currently has six Certified Floodplain Managers on staff that are qualified to provide financial assistance advice. The attached brochure on page 482, "Flooding: The Risk is Real. Are you Prepared?" publicizes the department's flood protection financial advice services. This brochure has been distributed county-wide annually through mailings, is available at all participating jurisdictions' offices and is distributed at all expos attended.

As with all projects identified in this document, the Coverage Improvement Plan will be evaluated annually by the Hazard Mitigation & Public Information Plan Committee for changes and updates that need to be made to existing projects and addition or deletion of projects as the Committee sees fit.

Table 9: Coverage Improvement Plan (CPI) Projects

Topics (please see PPI document pages 16-20 for list of messages for each topic):		Target Audiences (PPI document pages 14-15):					
<ol style="list-style-type: none"> 1. Know your flood hazard. 2. Insure property for your flood hazard. 3. Protect people from the hazard. 4. Protect your property from the hazard. 5. Build smart. 6. Protect natural floodplain functions. 7. Hurricane preparedness/safety. 8. General hazard preparedness. 9. Flood education. 10. Site drainage. 		<ol style="list-style-type: none"> 1. General Public 2. Residences and businesses in the Special Flood Hazard Areas (SFHA) 3. Newcomers to the area/ tourists 4. Real Estate and Insurance Agents/ Real Estate Buyers & Sellers 5. Repetitive Loss Area Residents 6. Non-English speaking community 7. Design Professionals/ Contractors 8. Others as determined by the Committee 					
CPI#	Coverage Improvement Plan Implementation Projects	Topics/ Messages	Target Audience	Outcome	Assignment	Schedule/ Distribution	Stakeholder
CPI#1	SC Department of Insurance Disaster Expo 6/8/13, 5/31/14, 5/30/15. Brochures provided: OP#12, 13, 14, 15, 16, 19/19a, 26, 33; FRP # 3, 9, 10, 11, 14, 15, 16, 17; CPI #4, 6, 7, 8, 12, 13	1-10	1-8	Increase number of flood insurance policies	Charleston County Building Inspection Services	Annually attended Expo- 6/8/13, 5/31/14, 5/30/15	SC Dept of Insurance and Charleston County
CPI #2	Area Flood Insurance Reform Public Presentations: Discussion at Zeus' Restaurant 9/17/13; Seabrook Property Owners Assoc. 12/3/13; Fort Johnson Estates 5/6/14; Edisto Community Association 5/15/14; Lions Club 3/10/15; continuous upon request of organization or association; OP #12, 16, 33; FRP # 14, 15; CPI #4, 5, 6, 8, 12 were taken to the events	1-5, 9	1-4, 7-8	Increase awareness and number of flood insurance policies	Charleston County Building Inspection Services	Presentations offered year-round and when requested.	Charleston County
CPI#3	Roundtable discussion with Council Member Anna Johnson on "Disaster Protection and Fair Housing" 10/28/15; types of insurance, including flood insurance, were discussed and promoted by Council member; CPI #4, 5, 6, 7, 8, 10, 12, 13; FRP# 10, 12, 14, 15, 17; OP# 12, 13, 14, 16, 19, 19a, 20, 23, 30	2	1-3	Inform residents about flood insurance and it's coverage	Anna Johnson and Building Inspection Services	This is one of several annually attended Roundtable discussions, see OP list for others.	Charleston County
CPI#4	Brochure: "Protecting Your Business from Flooding"	1-5, 7-9	1-3, 5	Increase knowledge about how to protect your business or belonging in the event of a flood	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA
CPI#5	Brochure: "Benefits of Flood Insurance Versus Disaster Assistance"	1, 2, 6, 9	1-3	Increase awareness and number of flood insurance policies	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA
CPI#6	Brochure: "Your Homeowner's Insurance Doesn't Cover Floods"	1, 2, 4, 5	1-5	Inform residents about insurance coverage and promote purchase of flood insurance policies	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA
CPI#7	Brochure: "Your Homeowner's Insurance Doesn't Cover Floods (Spanish)"	6	1-5	Inform residents about insurance coverage and promote purchase of flood insurance policies	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA
CPI#8	Brochure: "Why You Need Flood Insurance"	1, 2, 4, 6	1-5	Increase awareness and number of flood insurance policies	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA
CPI#9	Brochure: "NFIP Mandatory Purchase Requirement: Policies, Processes and Stakeholders"	1, 2, 4, 6, 8	1-5	Increase awareness and number of flood insurance policies	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA
CPI#10	Brochure: "Myths and Facts About the National Flood Insurance Program"	1, 2, 5, 8	1	Increase awareness and number of flood insurance policies	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA
CPI#11	Charleston County Building Inspection Services employees offer technical assistance and financial advice on flood zone information and flood insurance information to customers and phone inquires	1-4, 7	1-5, 9	Increase awareness and number of flood insurance policies	Charleston County Building Inspection Services	Continuous in-office activity- see TA Table for occasions.	Charleston County
CPI #12	Brochure: "Preferred Risk Policy- For Homeowners and Renters"	1, 2, 4, 6, 9	1, 3, 7	Increase number of flood insurance policies	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA
CPI#13	Brochure: "Preferred Risk Policy- For Homeowners and Renters (Spanish)"	1, 2, 4, 6, 9	6	Increase number of flood insurance policies	Charleston County Building Inspection Services	This brochure is available in offices and taken to Expos attended.	FEMA

Table 10: Direct Contact Offering Flood Protection Assistance and Promoting Flood Insurance

Event/Project	Date	Hrs.	People reached directly	People reached via media	Expo	Hazard(s) Addressed
Director Carl Simmons made a presentation to the Headquarters HOA.	1/13/2016	2	45+			Discussion on the benefits of being prepared for floods and flooding.
Director Carl Simmons conducted a public meeting with the Town of Rockville, SC.	1/16/2016	3	15			Discussed the importance of code changes, the effect they have on community. Mitigation - preventative ideas, suggestions, being prepared for floods and flooding
Director Carl Simmons made a presentation to the Board of Directors - Headquarters Island	3/3/2016	2	10		No	Discussion with Headquarters Island Board of Director regarding Flood Zone Remapping
Charleston County Floodplain Management Coordinator Cindy Cahill participated in the 'County Square' within the Black Expo, a regional event targeting African American community members and gave information on flooding, flood insurance, building safety, and hazard mitigation/preparedness alongside multiple Charleston County departments	3/12/2016	5	175		Yes	Flooding, hurricane awareness, emergency management, environmental conservation, building safety, mitigation, flood insurance
Homebuilder April 20, 2016 to discuss code related issues with the Trident Home Builders Association	4/20/2016	2	15		No	building safety, earthquake resistance, wind resistance, life safety, flooding, sustainability, energy conservation, flooding, mitigation
Isle of Palm HurricaneExpo (Disaster Prep Expo) - Certified Floodplain Manager Cindy Cahill	5/18/2016	3	30	100,00	Yes	flooding, mitigation, outreach, life safety, hurricane preparedness, building safety, community coordination, storm surge, flood insurance, natural hazards
MUSC Hurricane EXPO - Certified Floodplain Manager Cindy Cahill	5/25/2016	5	225	15,000	Yes	flooding, mitigation, outreach, life safety, hurricane preparedness, building safety, community coordination, storm surge, flood insurance, natural hazards
Travelers Institute Hurricane Preparedness Event - Certified Floodplain Manager Cindy Cahill	5/26/2016	2	85		No	flooding, mitigation, outreach, life safety, hurricane preparedness, building safety, community coordination, storm surge, flood insurance and hurricane resistance.
James Island Hurricane EXPO - Certified Floodplain Manager C. Cahill and Technical Service Coordinator Pamela Mecke attended	6/4/2016	3.5	50		No	Offered information hurricane preparedness, flooding, childrens activity booklet on hazards, flood insurance, mitigation
Charleston Regional Hazard Mitigation Plan Project Committee meeting concerning the 2016-2017 Hazard Mitigation Plan updates	8/31/2016	1.5	30		No	Multiple communities and jurisdictions met to review updates to the Hazard Mitigation Plan and discuss the PPI program for all hazards in the county.
MUSC Hurricane EXPO - Charleston County EMD & 211	9/29/2016	5	400		Yes	flooding, mitigation, outreach, life safety, hurricane preparedness, building safety, community coordination, storm surge, flood insurance, natural hazards
Charleston Regional Hazard Mitigation Plan Project Committee meeting concerning the 2016-2017 Hazard Mitigation Plan updates	9/28/2016	1.5	25		No	Multipal communities and jurisdictions met and adopted the 2016-2017 Hazard Mitigation Plan and the PPI program for all hazards in the county.

Also of great public benefit, County Council previously held a Round Table discussion open to the public to inform citizens about flood insurance. Flood insurance has been promoted on several occasions by Council Member Johnson in these presentations and discussions of area flood hazards and mitigation (CRS Activity 370). See below attachment for the News Release documenting one of these meetings (see OP report backup and CPI backup for other meeting documents).

Attachment: Round Table Discussion Promoting Flood Insurance

News Release



**October 16, 2015
Release Number: 3982**

Charleston County Councilwoman Anna Johnson's October 28 Round Table Meeting: Disaster Protection and Fair Housing

Charleston County Councilwoman Anna B. Johnson of District 8 will hold her monthly round table discussion on **Wednesday, October 28**. The meetings normally are held at 12:30 p.m. on the fourth Wednesday of every month at the John's Island Regional Library located at 3531 Maybank Highway on Johns Island.

Our guest speakers this month will be Charleston County Community Services Director Johnna Murray, Charleston County Building Services Director Carl Simmons and St. John's Fire Department Deputy Chief Stanley.

Charleston County Building Services:

We will discuss what type of insurance you need and how much it covers.

- Flood/Wind/Fire Insurance
- Earthquake Insurance
- Homeowners Insurance
- Liability Insurance
- Auto Insurance

Technical Assistance (370TA)

Another very important aspect of flood insurance promotion is providing technical assistance to individuals and promoting flood insurance through this assistance. The Charleston County Building Inspection Services Director, Assistant Director, Administrative Services Manager, Floodplain Management Coordinator, Floodplain and Plan Review Assistant and a Permit Specialist, all of who are Certified Floodplain Managers. These individuals can provide assistance and advice and have assisted individuals on numerous occasions with information about their properties and the importance of flood insurance as well as financial assistance options. Table 11 below lists technical assistance records for the last year. In addition to this technical assistance, flood-related inspections are also provided as a courtesy to residents as requested to inform them about their flood determination. Standard Operating Procedure “I.2 Flood Zone Related Inspections,” for the Charleston County Building Inspection Services department details the procedures for conducting these inspections. The below information is taken from this Standard Operating Procedure:

I. Other Flood-Related Inspections

A. Community Rating System Inspections

1. These inspections are performed at the request of a property owner who indicates they need assistance with a flooding problem
2. Field inspectors are to offer suggestions to property owners as to potential options to help minimize flood losses on the property.
3. Field inspectors are to document the inspections on their daily inspection lists and the CRS flood protection assistance forms.
4. A copy of the inspection documentation is to be maintained by the Administrative Staff for the Community Rating System recertification.

Flood protection assistance and flood insurance promotion are essential in a county like Charleston because of the multiple hazards that can lead to flooding in our area. A heavy rainfall, an exceptionally high tide, a tropical storm, hurricane or other weather event, all pose an imminent risk to the area. Not all homes in the area are located within Special Flood Hazard Areas but most could benefit from carrying flood insurance or offer information regarding protection against floods as most homeowner policies do not include flooding as a covered event and people do not know what measures they can take to prevent issues in the future.

Overall, in the joint efforts of the Committee, County departments and stakeholders, flood insurance promotion has been identified as a key to the success of most implemented outreach programs. Identifying target audiences and outreach methods are a major part of the Committee’s goal and objectives. The Committee will continue to evaluate the effectiveness of each program and adjust or add new programs as it requires. This flood insurance assessment will be evaluated annually as a part of the *Charleston Regional Hazard Mitigation Plan* and the Public Information Plan included in it.

Table 11: Technical Assistance Related to Flood Insurance Promotion

Date	Name	Address	Location	Parcel ID (PID)	Current Flood Zone	BFE	Ins. Info Given	CBRS Zone	Past Flood or Repetitive Loss	Sensitive or Wetland	300 Flood Protection Assistance financial assistance advice discussed	370 flood zone info discussed	Findings and recommendations
1/7/16	Buyer	7064 MAYBANK HWY.	Charleston County	1510000273	X	N/A	Yes	No	No	No	No	Yes	Buyer looking for flood zone info and elevations. Discussed flood insurance
1/8/16	Christine	1846 OVERDELL DR	City of Charleston	350-01-00-097	VE	13	Yes	No	No	No	No	Yes	owner looking to get removed from VE zone, discussed her elev cert and talking to engineering firm and HOA current ins 4000
1/11/16	Buyer	1967 Calver Ave	Charleston County	350-13-00-108	VE	13	Yes	No	No	No	Yes	Yes	Buyer looking for flood zone info and elevations. Discussed flood insurance
2/2/16	Dan	1945 Swift Av	Charleston County	350-13-00-021	AE	12	Yes	No	No	No	Yes	Yes	Buyer looking for flood zone info and elevations. Discussed flood insurance
3/9/16	Austin	9226 Tibwin Rd	Charleston County	745-00-00-200	X	N/A	Yes	No	No	No	No	Yes	Buyer looking for flood zone info and elevations. Discussed flood insurance
3/15/16	Debbie	1866 Cestus Lane	Charleston County	355-14-00-149	AE	11	Yes	No	No	No	Yes	Yes	Owner need historic flood info for insurance. Discussed flood ins and elevation
3/31/16	Tracey Kampmeyer	773 Creekside Dr	Charleston County	452-01-00-040	AE	14	Yes	No	No	No	Yes	Yes	Owner need historic flood info for insurance. Discussed flood ins and elevation
4/20/16	Wanda Krupinski	2623 Seabrook Island Rd	Seabrook	147-07-00-008	AE	13	Yes	No	No	No	Yes	Yes	Buyer wanted info on what could and couldn't be done if buying home. Did site visit with Carl, discussed options, alternatives, 50% rule, etc....
5/2/16	Kyke	3918 Beehive Rd	Charleston County	614-00-00-275	X	N/A	No	No	No	No	No	Yes	Buyer looking for flood zone info.
5/6/16	Janice Harper	1414 DUPRE CREEK LN	Charleston County	617-15-00-035	AE	9	Yes	No	No	No	No	Yes	Has a buyer that wants to enclose bottom area for master bedroom. I told her only parking, storage and access. No living area below DFE. Garage at 7.5
5/6/16	Kathy McKay	3124 Marshall	Sullivan's Island	529-12-00-097	VE	17	Yes	No	Yes	No	Yes	Yes	Property tax lists home as 1991 const. With Hugo NFIP ruled home as non substantial imp. Didn't have to raise. Now NFIP wants house raised due to post firm. Talked to Carl. Referred them to Auditor/Assessors office.
5/11/16	Danny	914 GADSDENVILLE RD	Awendaw	614-00-00-249	VE	16	Yes	No	No	No	Yes	Yes	wanted to put mobile home in VE zone
6/2/16	Kris Fowler	421 Woodland Shores	Charleston County	343-11-00-079	AE	11	Yes	No	Yes	No	Yes	Yes	House is in a hole, everything runs towards it. Slab on grade and can't really raise it. Gave info on flood resistant mat and raising ceiling to be able to raise floors in future. Did site visit with Carl, discussed options, alternatives, 50% rule, etc....
6/6/16	Linthouse	1028 Wappoo Rd	Charleston County	351-16-00-016	X	N/A	Yes	No	No	No	No	Yes	Wanted to know flood zone, X, went over non-flood zone ins.
6/27/16	Lynn	33 S Hampton Dr	City of Charleston	352-06-00-020	AE	13	Yes	No	No	No	Yes	Yes	prospective buyer, reviewed elevation cert, provided info on areas to lower ins, referred to City for official info.
6/30/16	Shep	4484 Betsy Kerrison PKWY	Charleston County	204-00-00-010	AE	14	Yes	No	No	No	No	Yes	prospective buyer wanted to know flood zone and building requirements
8/8/16	Sherry Long	8149 Bing Hill	Charleston County	120-00-00-134	X	N/A	Yes	No	No	No	No	Yes	Verifying the LOMC for the property was valid
8/9/16	Yvonne	3737 Belvedere d	Charleston County	249-00-00-035	AE	12	Yes	No	No	No	No	Yes	prospective buyer wanted to know flood zone and building requirements
8/30/16	Stanley	591 Oyster Rake	Seabrook	207-02-00-051	AE	13	No	No	No	No	No	Yes	Insurance agent needed historical FIRM
9/7/16	Gerald Tiller	492 Romain Rd	McClellanville	744-00-00-204	VE	17	Yes	No	No	No	Yes	Yes	Owner verifying if property is still in VE zone and building requirements. Discussed elevation, breakaway wall, parking, storage, access, etc....
9/8/16	Wanda Krupinski	2937 Deer Point Dr	Seabrook	149-05-00-148	AE	13	Yes	No	No	No	Yes	Yes	Buyer wanted info on what could and couldn't be done if buying home. Did site visit with Carl, discussed options, alternatives, 50% rule, etc....
9/10/16	Ashley, Ash Agency	1009 Embassy Row Way	Seabrook	147-01-00-082	AE	13	Yes	No	No	No	No	Yes	Insurance agent needed historical FIRM
9/9/16	Andrea Rodgers, Agent/Owned Realty	2420 Seabrook Island Rd	Seabrook	147-02-00-016	AE	13	Yes	No	No	No	No	Yes	Insurance agent needed historical FIRM
9/12/16	Christian Reed	3384 Fairview Rd	Charleston County	388-09-00-026	X	N/A	No	No	No	No	No	Yes	prospective buyer wanted to know flood zone and building requirements
9/14/16	Darren Weathers	1111 Bulow Point Rd	Charleston County	287-00-00-323	AE	7	No	No	No	No	No	Yes	Town of Mt. Pleasant planning needed flood zone for prospective buyer of property, Rob was at EMI. Sent flood map with location and referred them to Rob for official info.
9/14/16	Chris Johnson	1578 Holton Pl	City of Charleston	415-03-00-061	AE	14	Yes	No	No	No	No	Yes	Owner needed flood map to send to FEMA to be removed from flood zone. Referred them to the City for a letter of Determination.
9/15/16	Ashley, Ash Agency	4511 Ventura Dr	North Charleston	410-09-00-017	AE	11	No	No	No	No	No	Yes	Insurance agent needed flood zone, referred her to North Charleston
9/19/16	Joette - Nationwide	2554 Birkenhead Dr	Charleston County	309-13-00-116	AE	11	No	No	No	No	No	Yes	Insurance agent needed historical FIRM
10/14/16	Mike Shilling	7979 Little Briton Rd	Charleston County	094-00-00-069	X, AE	12,13	Yes	No	No	No	No	Yes	Prospective Buyer, discussed flood zones, mortgage flood ins, sent FIRM map, etc....

Hazard Disclosure (CRS Activity 340)

Real estate agencies provide hazard disclosure to prospective homeowners. Charleston County works with real estate agents to provide them with any information that they need to provide prospective homebuyers and sellers with to give them an accurate picture of what they are purchasing and what kind of flood insurance they will be required to or should purchase. There is a real estate agent on the Charleston Regional Hazard Mitigation & Public Information Plan Committee to provide valuable perspective and information to the Committee regarding this topic. Full disclosure is a necessary part of any real estate purchase. See Table 11 above for some instances where Charleston County assisted both real estate agents and prospective buyers and sellers with information regarding flood zones and flood insurance.

Also as a part of the Standard Operating Procedures for Charleston County, real estate transaction-related inspection services are provided. Standard Operating Procedure “1.2 Flood Zone Related Inspections” details the inspections below:

- A. Special Requirements for Voluntary Flood Inspections for Real Estate Transactions per ordinance Article VII (fee-based)**
 - 1. Property records are to be investigated to determine what permits were obtained for the property and applicable flood ordinance requirements based on the dates of these permits prior to inspections being conducted.
 - 2. Inspections are conducted primarily for floodplain management-related elements, based on the date of construction of the building.
 - 3. Any work done without applicable permits is to be noted on the inspection report and photographed.
 - 4. The Department Director will need to approve and sign any letters mailed to the requester of the inspection.

OP#33 brochure has been added to the outreach project list detailing flood insurance and flood risks for prospective and new homeowners. See brochure below.

Attachment: OP#33 “Shopping for Your Dream Home? Know & Prepare for Flood Risk Before You Buy”

Local Jurisdiction Contact Information

Charleston County (unincorporated) (843) 202-6730
 Towns of Awendaw, Hollywood, James Island, Lincolnville, McClellanville, Murrells, Faversham, Rockville and Seabrook Island

City of Charleston (843) 724-7320
 City of Folly Beach (843) 386-2447
 City of Isle of Palms (843) 866-9912
 City of North Charleston (843) 740-2549
 Town of Kiawah Island (843) 768-9166
 Town of Mt. Pleasant (843) 884-5154
 Town of Sullivan's Island (843) 883-3198

Charleston County Building Inspection Services
 4045 Bridge View Drive, Suite A311
 North Charleston, SC 29405
 (843) 202-6930
 BuildingServices@CharlestonCounty.org
 www.CharlestonCounty.org

Shopping for Your Dream Home? Know & Prepare for Flood Risk Before You Buy

Know the Risk & Impact of Flooding

Floods are the most frequent and costly natural hazard in the United States. Given the Lowcountry's low elevation, coastal location and frequency of heavy precipitation, tropical storms and hurricanes flooding is a very serious threat to everyone in the region. Even those not living close to the water are at risk.

The force of moving water or waves can destroy a building. Even standing water can float a building, collapse walls, or buckle a concrete floor. Water-soaked interiors, such as carpeting, clothing, upholstered furniture, and mattresses, may have to be thrown away after a flood. Personal items, such as photographs and heirlooms, may be destroyed.

Flooding threatens the public's health and safety. People drown. Stagnant water is a breeding ground for disease and pests. Excess moisture fosters the growth of mold and mildew. Flood waters carry toxic substances such as fertilizer, gasoline and oil. In addition, the prevalence of raw water is an added concern as it pollutes drinking water wells.

The financial and personal cost of flooding can be devastating. Too many families have lost their homes and belongings, and some have lost their lives, and they never saw it coming.

It doesn't take much—just a few inches of flood water can cause serious and permanent damage.

Get educated and be prepared. As you shop for or build your dream home, familiarize yourself about flood risks and what you can do to lessen those risks and protect your family and your home.



A Flood-Aware Homebuyer's Checklist

- Understand Your New Home's Flood Risk**
- Identify if your property is in a floodplain and its flood zone
 - Determine your elevation, flood depth, velocity and warning time
 - Find out if the property is subject to other hazards, including flooding
 - Ask if the home has been built or modified to current floodplain regulations and what building and zoning regulations are in effect
- Build & Buy Responsibly**
- If building, hire design professionals familiar with local hazards.
 - If purchasing an existing home, have it inspected by a professional home inspector
 - Obtain permits for construction, from your local jurisdiction, even if you do the work yourself
 - Hire contractors licensed by South Carolina and/or your local jurisdiction
 - Use flood resistant material as necessary
 - Inquire as to whether federal aid is available for retrofitting, relocating, or demolishing structures with repetitive flooding
- Get Insured**
- Purchase flood insurance—get started by contacting your insurance agent or visiting FloodSmart.gov
- Remain Aware of Flooding After Moving In**
- Create an emergency kit and Plan
 - Protect Natural Floodplains and support their function by landscaping with native plants and minimal fertilizer
 - Keep drainage channels and catch basins free from obstructions such as tree limbs and trash
 - Educate yourself about additional flood prevention measures to protect your family and home

Remain Aware of Flooding upon Moving In

Create an Emergency Kit and Emergency Plan
 As soon as you move in, make an emergency kit and plan. Your kit should contain supplies needed to shelter in place for at least three days. Your plan should include:

- A strategy for family communication.
- Monitoring local media for the latest news and official instructions.
- Details on how you will safely shelter in place or evacuate. Evacuation route maps should be in each car and incorporate these routes into your plan.
- Requirements of household members with special needs.
- Caring for your pet(s) if you shelter in place or evacuate. Most shelters prohibit pets.

To learn more about preparing your emergency supply kit and emergency plan visit FEMA.gov, Ready.gov or 3Cemid.org.

Protect Natural Floodplains & Keep Drainage Channels Clear
 Preserve wetland areas and oceanfront sand dunes as they protect property from flooding. Keep them clean and do not walk on sand dunes.

Help support natural floodplain functions by gardening with native plants and minimal fertilizer to establish vegetative buffers.

Keeping drainage channels and catch basins free from obstruction reduces flooding during heavy rains. Maintain the channels near your property and remove or report obstructions. Request ditch cleaning from or report dumping violations to your local jurisdiction, before a storm occurs.

Educate Yourself about Flood Prevention Measures
 Upon moving into your home, educate yourself about additional flood prevention measures to safeguard your new purchase, your family and your belongings. Libraries, government offices, and the internet have extensive flood hazard mitigation information.

Understand Your Potential New Home's Flood Risk

The entire Charleston region, whether you are near water or not, is at risk for flooding. When shopping for a home, learn how vulnerable your potential new property might be before you buy.

The County of Charleston and local jurisdictions regulate construction and development to protect buildings from flood damage. Filing of dirt and similar projects are prohibited in certain areas. Houses substantially damaged by fire, flood, or any other cause must be elevated to or above the regulatory design flood level when they are repaired.

Before you commit to buying a property, find out if it is located in a floodplain and determine its elevation. Learn about historical flooding in your new neighborhood. Inquire about the age of the home and if it has been built or modified to current floodplain regulations. In the Charleston area, most current floodplain regulations did not come into effect until the 1970s. As a result, homes built before then could be more vulnerable to flood damage.

Ask your real estate agent, contractor, builder and your local jurisdiction if the property is in a floodplain and the property's flood zone; if it has ever been flooded; what the flood depth, velocity, and warning time(s) are; if it is subject to any other hazards; and what building or zoning regulations are in effect.

Your potential new neighbors, homeowners association and library are also good resources for this information. More information can be obtained on regulations, floodplains and flood zones from your local jurisdiction.



Build & Buy Responsibly

If you build a new home, hire architects, engineers and other design professionals familiar with flooding and other local hazards, to prepare your building plans.

The design professionals you hire should have knowledge of the area's floodplains, local building regulations and flood prevention measures. A building can be protected from most flood hazards, sometimes at a relatively low cost. New buildings can be set back an appropriate distance from water and wetlands. New construction and mechanical equipment (hot water heaters, air conditioning units, etc.) must be elevated to or above your local jurisdiction's design flood levels.

If you are buying an existing home, have your potential new home inspected by a professional home inspector as early as possible in the buying process. The inspector will examine all major components of the home and alert you if they find damage that may have been caused by past flooding and requires repair. The inspector may recommend retrofitting and other flood prevention actions you should take post-purchase, including regrading, constructing berms or building floodwalls.



Whether you are building your home, or preventing or correcting flood damage in an existing home, only hire contractors licensed by South Carolina and/or local jurisdictions who will use flood resistant material as appropriate. Obtain permits as required by your local jurisdiction for construction-related work, even if you do the work yourself.

Contact your local jurisdiction or Charleston County Building Inspection Services to see if federal aid is available for retrofitting, relocating, or demolishing structures with repetitive flooding.

Get Insured

Flood insurance is one of the best protection measures for a building. Usually, homeowners insurance does not cover floods. Only flood insurance covers floods. Flood insurance is available to owners and renters of residential and commercial properties under the National Flood Insurance Program (NFIP) and can be purchased through a licensed insurance agent.

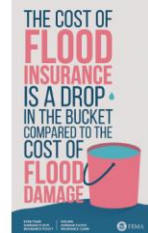
NFIP policies can cover the building, the contents, or both. All properties in the Special Flood Hazard Area, with a federally backed mortgage, will be required to have flood insurance. Everyone should have flood insurance.

Typically, there is a 30-day waiting period from date of purchase before a policy goes into effect.

Premiums are determined by risk level, the amount of coverage, deductible, age of home, elevation and type of building. The average premium for a residential flood policy is less than \$2 a day. The cost of flood insurance is a drop in the bucket compared to the cost of flood damage.

Visit FloodSmart.gov or contact your insurance agent for more information. Ask if you qualify for any discounts.

Your insurance agent may require an elevation certificate to get you a quote. If you do not have an elevation certificate, contact your local jurisdiction to see if it is on file. If not, contact a surveyor, engineer or architect to prepare one.



Flood Protection Information (CRS Activity 350)

In an effort to provide flood protection information, Charleston County has partnered with the Charleston County Library system to introduce FEMA flood publications in all sixteen of the area's branch locations. Below is a list of the publications available at all sixteen branch locations.

Above the Flood: Elevating Your Floodprone House, FEMA-347, 2000

http://www.fema.gov/media-library-data/20130726-1443-20490-3026/fema347cvr_toc.pdf

Catalog # R693.892 ABOVE

Answers to Questions About the National Flood Insurance Program, F-084, 2011

http://www.fema.gov/media-library-data/20130726-1438-20490-1905/f084_atq_11aug11.pdf

Catalog # R368.122 ANSWERS

Coastal Construction Manual, FEMA-P-55, 2011

http://www.fema.gov/media-library-data/20130726-1510-20490-6719/fema55_volii_frontmater.pdf

Catalog # R693.8 UNITE

Elevated Residential Structures, FEMA-54, 1984

<http://www.fema.gov/media-library-data/20130726-1509-20490-6744/fema54.pdf>

Catalog # R693.8 UNITE

Mandatory Purchases of Flood Insurance Guidelines

Protecting Manufactured Homes from Floods and Other Hazards, FEMA P-85, 2009

http://www.fema.gov/media-library-data/20130726-1501-20490-6993/a_fema_p85_cvr_toc.pdf

Catalog # R693.8 PROTECTI

Mitigation of Flood and Erosion Damage to Residential Buildings in Coastal Areas, FEMA-257, 1994

<http://www.fema.gov/media-library-data/20130726-1505-20490-8508/fema257.pdf>

Catalog # R693.8 MITIGATI

Protecting Building Utilities from Flood Damage, FEMA P-348, 1999

http://www.fema.gov/media-library-data/20130726-1514-20490-7165/p_348.pdf

Catalog # R363.3493 PROTECTI

Protecting Floodplain Resources, FEMA-268, 1996

<http://www.fema.gov/media-library-data/20130726-1440-20490-5918/fema268.pdf>

Reducing Damage from Localized Flooding, FEMA 511, 2005

<http://www.fema.gov/media-library-data/20130726-1446-20490-0539/FEMA511-complete.pdf>

Catalog # R363.3493 REDUCING

Also of significant importance is the vast array of information available on the Charleston County website (charlestoncounty.org). A major project and source for citizens, this website includes flood insurance information, all brochures produced for the Public Information Plan and an extensive list of frequently asked questions. Important links include: *Charleston Regional Hazard Mitigation Plan*, floodmsart.gov, links to NFIP webpages and scsafefhome.com. This website is updated monthly with any new or updated information or brochures as they are produced. There are currently fourteen hazard information related brochures, along with activity sheets for children. Links to more information regarding flooding and other hazards are on this page as well. The website is a very important part of the Public Information Plan as it is typically the first place that citizens will use to gain more information. Below are screen shots of all of the brochures, informational pages and frequently asked questions on the Charleston County website.

Attachment: Charleston County Website

[Home](#)
[Online Services](#)
[Floodplain Management](#)
[Hazard Mitigation Plan](#)
[Forms](#)
[Permit Fees](#)
[Project Impact](#)

Floodplain Management

Helpful Links

- Charleston County Hurricane Guide

Frequently Asked Questions

- How do I know in which flood zone a property is located?
- Is Charleston County potentially subject to hurricane storm surge flooding?
- What do the flood zone designations on the Flood Insurance Rate Maps mean?
- Can all properties in Charleston County get flood insurance?
- What regulations apply to construction-related activities in Flood Zones?
- Is there a limit to how much work can be done to an existing structure in an Flood Zone?
- What are the special requirements for construction in "A, AE, AH, AO, A99" Flood Zones in Unincorporated Charleston County?
- What are the special requirements for construction in "V and VE" Flood Zones in Unincorporated Charleston County?
- Where can I get a "flood elevation certificate" to determine the actual elevation of my structure?
- Where can I get information on safety measures for flooding?
- How can I protect my property from flood-related damages?
- If someone is dumping trash into the drainage ditches or system in my neighborhood, what should I do?
- If my property has been flooded, what should I do?
- Does Charleston County have a plan to address preparing for floods and other hazard events?
- What if my property contains wetland areas or dunes?
- Where can I get real time information on water elevations for streams and rivers in Charleston County?

Contact

Building Inspection Services
 Lonnie Hamilton, III Public Service Building
 4045 Bridge View Drive
 North Charleston, SC 29405
 Phone: (843)202-6930
 Fax: (843)202-6936
 Email: buildinginservices@charlestoncounty.org
 Office Hours:
 Mon - Fri, 8am - 5pm
 Inspector Availability:
 7am - 8:30am
 4pm - 5pm

All Departments

[Home](#)
[Online Services](#)
[Floodplain Management](#)
[Hazard Mitigation Plan](#)
[Forms](#)
[Permit Fees](#)
[Project Impact](#)

Project Impact

What is Project Impact?

- Project Impact is an initiative originally sponsored by FEMA to assist local communities in becoming more disaster resistant.
- An on-going initiative in the Charleston County Area that performs projects which help make our community better able to resist damages due to hazard events.

How do I make my home or business more disaster resistant?

- Flood Hazard Information
- Project Impact flood hazard
- Hurricane Hazard Information
- Project Impact hurricane hazard
- Earthquake Hazard Information
- Project Impact earthquake hazard
- Tornado Hazard Information
- Project Impact tornado hazard
- Wildfire Hazard Information
- Project Impact wildfire hazard

Other Information
[S.C. Safe Home Program](#) (grants/tax credits for retrofitting homes for enhanced wind resistance)

Flood Inundation Maps

- Slosh Model Category 1
- Slosh Model Category 3 (15 mph)
- Slosh Model Category 3 (25 mph)
- Slosh Model Category 5

If you need more assistance with or specific information related to Flood Inundation Maps, Flood Stage Forecast, or Slosh models please contact Building Inspection Services at 843-202-6940.

Project Impact educational brochures

- Generator Safety Brochure
- Hazard Resistant Landscaping Brochure
- Boat Owner's Guide to Storm Preparation
- Damaged Collections, Antiques & Other Valuables
- Build A Dune Brochure
- Earthquake Brochure
- Flood Safety Brochure
- Drainage Awareness Campaign Brochure
- After a Disaster: Hiring a Contractor

Project Impact for kids (and teachers!)

- Flyer of programs for schools
- Mini-grant application
- Lowcountry Science Fair Awards Information
- "Beat the Brainiac" school assemblies
- Project Impact Scout Patch Program

Activity Sheets

- Earthquake
- Flood
- Fire
- Hurricane

Want more information?

- Hazard information
- FEMA For Kids

Floodplain Management Planning (CRS Activity 510)

Because the *Charleston Regional Hazard Mitigation Plan* is a multi-jurisdictional plan, every jurisdiction's action plans are included. All jurisdictional action plans include public information activities. See below a sample of activities included in the action plans.

PP	Continue providing information to citizens regarding hazard safe interior rooms (PPI)	Building Inspection Services	General Fund	Minimize future tornado-related loss of life; Educating citizens regarding vulnerability to hazards and steps which may reduce vulnerability.	2
PI	Provide hazard related information to all residents through the AT&T yellow pages telephone book (PPI)	Building Inspection Services	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; improve water quality.	1
PA	Conduct or co-sponsor training workshops regarding the International Building-related, flood, and Fire Prevention Codes and Regulations, and on sustainable construction / landscaping practices, when there is interest in these workshops (PPI)	Building Inspection Services	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; preserve environmental resources	1
PA, PP, PI, NB	Continue providing information to citizens regarding propane tank anchoring, hazard safe interior rooms, boat anchoring and maintenance, generator safety, riparian buffer zones, hazard resistant landscaping, and artifact protection, among other issues (PPI)	Building Inspection Services Project Impact Community Partners	General Fund Grant Funding	Educating citizens regarding vulnerability to natural hazards and steps to reduce vulnerability; minimize future flood damage; minimize future earthquake damage; minimize future hurricane damages; preserve environmental resources	2

NB	Continue to distribute literature on to citizens through government offices and at expos (PPI)	Building Inspection Services Project Impact	Partner donations Grant Funding	Educating citizens regarding vulnerability to hazards and steps to reduce vulnerability; minimize future flood damage; preserve environmental resources; improve water quality; improve hazard resistance of infrastructure; preserve open space; encourage recreational activities; minimize future hurricane damage; improve water quality; improve air quality	2
PI	Mail an outreach project to floodplain residents to those property owners whose property is located in the special flood hazard area (PPI)	Building Inspection Services Project Impact	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 hurricane damage; improve water quality	1

Flood Response Preparations

Flood response preparation projects were established and have been maintained by the Hazard Mitigation & Public Information Plan Committee since the inception of the Public Information Plan. These projects are aimed at informing the public before, during and after a hazardous incident. Table 12 below is a listing of projects and what topics are addressed that were established by the Charleston Regional Hazard Mitigation & Public Information Plan Committee as Flood Response Preparation (FRP) projects. These projects cover a range of outreach methods from media releases to inform the public to brochures that assist in preparation measures, to bags to be delivered to residents with information while damage assessments are being conducted. Attached at the end of this document (pages 513-518) are procedures for how information will be disseminated in the event of a flood. These procedures are updated and revised as necessary annually. Also included in Table 12 are details describing distribution schedules, assignment, projected outcomes, topics and target audiences for each project.

Table 12: Flood Response Preparation Activities (FRP)

Topics (please see PPI document pages 16-20 for list of messages for each topic):				Target Audiences (PPI document pages 14-15):		
1. Know your flood hazard. 2. Insure property for your flood hazard. 3. Protect people from the hazard. 4. Protect your property from the hazard. 5. Build smart. 6. Protect natural floodplain functions. 7. Hurricane preparedness/safety. 8. General hazard preparedness. 9. Flood education. 10. Site drainage.				1. General Public 2. Residences and businesses in the Special Flood Hazard Areas (SFHA) 3. Newcomers to the area/ tourists 4. Real Estate and Insurance Agents/ Real Estate Buyers & Sellers 5. Repetitive Loss Area Residents 6. Non-English speaking community 7. Design Professionals/ Contractors 8. Others as determined by the Committee		
FRP #	Flood Response Project Name	Topics Covered	Target Audience	Outcome	Assignment	Distribution
FRP #1	FRP Instructions for Distribution	1-6, 8-9	1-7	Inform the public about flood response after an event	Building Inspection Services Department	Distributed within 48 hours post flood event; instructions are kept up-to-date throughout the year and ready for distribution in the event of a flood.
FRP #2	Media Information Post Flood	1-9	1-7	Inform the public about flood response after an event	Building Inspection Services Department	Immediately following flood event; information is kept up-to-date throughout the year and ready in the event of a flood.
FRP #3	Chas. Co. Area Project Impact (Bag)	8	1-8	Inform public about several topics post-event- includes several fliers, information sheets, insurance info, contact info for post-event activities	Building Inspection Services Department	Distributed during damage assessment within 48 hours post flood event and at expos
FRP #4	NFIP Flood Insurance Claims Handbook FEMA F-687	1-6	1-2, 5	Inform affected residents about insurance claims process post event	FEMA	Post flood event; kept in-house in the event of a flood.
FRP #5	NFIP Flood Insurance Claims Handbook FEMA F-687S (Spanish)	1-6	1-2, 5-6	Inform affected Spanish speaking residents about insurance claims process post event	FEMA	Post flood event; kept in-house in the event of a flood.
FRP #6	NFIP Summary of Coverage FEMA F-679/November 2012	1-6	1-5	Inform public and policy holders about the benefits and coverage available with flood insurance	FEMA	Pre and post flood event; kept in-house.
FRP #7	NFIP Summary of Coverage FEMA F-679S (Spanish) /November 2012	1-6	6	Inform Spanish speaking community about benefits and coverage available with flood insurance	FEMA	Pre and post flood event; kept in-house.
FRP #8	Brochure: "Need A Contractor?"	1-5, 8	1-3	Inform public about what to look for in a selecting a contractor	Building Inspection Services Department	Available year-round in BIS offices, expos and at events.
FRP #9	Brochure: "Build Back Safer and Stronger"	3-5	1-3, 7	Increase knowledge of how to protect homes from future flood damage	FEMA	Available year-round in BIS offices, expos and at events.
FRP #10	Brochure: "Preparation and Preservation of Damaged Collections, Antiques and Other Valuables"	1-6, 8	1, 3, 8 (business owners and collectors)	Increase knowledge of how to protect valuables from flood damage	Building Inspection Services Department	Available year-round in BIS offices, expos and at events.
FRP #11	Brochure: "Increased Cost of Compliance Coverage"	2, 5, 8-9	1-5	Improved public knowledge about the cost of compliance coverage	FEMA	Available year-round in BIS offices, expos and at events.
FRP #12	Brochure: "Building Codes: How They Help You"	5, 8	1-5, 7-8	Inform public about how building codes can protect property and lives	International Codes Council	Available year-round in BIS offices, expos and at events.
FRP #13	County-wide mailer/ brochure: "Flooding: Are you Prepared?"	1, 9	1-5, 7-8	Inform public about flood risks, how to prepare and stay safe, who to contact if your home is damaged, financial advice services available, general flood information/ facts	Building Inspection Services Department	Updated annually and mailed to residents, started in 2012; also available in BIS offices and at expos and events
FRP #14	Brochure: "Flood Preparation and Safety"	1, 9	1-5, 7-8	Informa public about how to prepare for a flood an stay safe	Building Inspection Services Department	Available year-round in BIS offices, expos and at events.
FRP #15	Brochure: "Flood Preparation and Safety (Spanish)"	1, 9	6	Inform Spanish speaking community about how to prepare for and stay safe in the event of a flood	Building Inspection Services Department	Available year-round in BIS offices, expos and at events.
FRP #16	Brochure: "Mold Tips on Prevention and Control"	1, 5, 8	1-3, 5, 7	Inform public about measures to be taken in homes to prevent mold growth	International Codes Council	Available year-round in BIS offices, expos and at events.
FRP #17	Brochure: "Window and Door Protection"	1, 4-5, 7-9	1-3, 5, 7	Inform the public about protective measures and options for building openings	Building Inspection Services Department	Available year-round in BIS offices, expos and at events.
FRP #18	Brochure: "Mold and Mildew"	1, 5, 8	1-3, 5, 7	Inform public about hazards associated with mold and mildew growth	Building Inspection Services Department	Available year-round in BIS offices, expos and at events.
FRP #19	Brochure: "Cleaning Up Info on Clean Up and Repair"	1, 3-5, 8	1-3, 5	Inform public about how to clean up property post event	Building Inspection Services Department	Available year-round in BIS offices, expos and at events.

Annual Evaluation

The Charleston Regional Hazard Mitigation and Public Information Committee meets at least twice per year to discuss and vote on annual updates to the *Charleston Regional Hazard Mitigation Plan* as well as Public Information needs and activities and insurance coverage improvement plan needs. These efforts are very important to keep current so that the public finds the best and most relevant information possible to protect their lives and homes. In these evaluations by the Committee, they will address any modifications that need to be made to the current outreach methods, add new target audiences or areas if necessary, change the topics and/or message as appropriate, and update the Plan as needed to suit the community. The Charleston County staff

will facilitate the meetings and will make revisions to the Plan as deemed necessary. Because the Plan is adopted annually to keep it as up-to-date as possible, a digital and hard copy are made available for Charleston County Council members as designated in the adoption ordinance after the Plan has been accepted by the Committee. The most recent Council acceptance of the revised 2016 *Charleston Regional Hazard Mitigation Plan* update was November 30, 2016 (included below). The next scheduled formal adoption will occur later in 2017 of the *Charleston Regional Hazard Mitigation Plan*.

Attachment: Charleston County Council Acceptance of Updated Plan

J. Elliott Summey - Chairman
A. Victor Rawl - Vice Chairman
Colleen T. Condon
Henry E. Darby
Anna B. Johnson
Teddie E. Pryor
Joseph K. Qualey
Herbert R. Sass, III
Henry D. Schweers



Beverly T. Craven, Clerk
(843) 858-4030
1-800-594-7832
FAX (843) 858-4035
E-mail: bcraven@charlestoncounty.org

CHARLESTON COUNTY COUNCIL
LONNIE HAMILTON, III PUBLIC SERVICES BUILDING
4045 BRIDGE VIEW DRIVE
CHARLESTON, SOUTH CAROLINA
29405-7464

November 30, 2016

Mr. Carl H. Simmons, Director
Building Inspection Services
4045 Bridge View Drive Suite A-311
North Charleston, SC 29405

RE: *Charleston Regional Hazard Mitigation Plan* Report

Dear Mr. Simmons:

Per your request, I have provided copies of the summary report on the *Charleston Regional Hazard Mitigation Plan* revisions for this year to the members of County Council and informed these Members that a complete copy of the 2016 Plan Update is available to Council Members and the general public on the Building Services Department webpage, and a printed copy of the Plan is available in Building Services, Room A-311 of the Lonnie Hamilton Services Building.

If you have any questions or need any additional information, please let me know.

Sincerely,

Handwritten signature of Beverly T. Craven in blue ink.
Beverly T. Craven
Clerk of Council

A link to the Charleston Regional Hazard Mitigation Plan:

<http://www.charlestoncounty.org/departments/building-inspection-services/files/Hazard-Mitigation-Plan.pdf>

Attachments (16): Each Jurisdiction's Adopting Resolution

A RESOLUTION FOR THE ADOPTION OF THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY CHARLESTON COUNTY COUNCIL

Resolution No. 13-22

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the County of Charleston originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the County to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the County of Charleston, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Charleston County Council.

Effective this 7th Day of November, 2013.

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN
BY AWENDAW TOWN COUNCIL**

Resolution No. 2013- 0 2-

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Awendaw originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Awendaw to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that the Town of Awendaw does hereby declares that:

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Awendaw, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Charleston County Council and Awendaw Town Council

Effective this 7 Day of November, 2013

Attest:



Miriam C. Green, Mayor



Gregory Saxton, Town Clerk

TOWN OF HOLLYWOOD, SC

ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN
Resolution 18-2013-14

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Hollywood originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Hollywood to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that:

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Hollywood, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town of Hollywood. **Effective this 10th Day of December, 2013**

Mayor Jacquelyn S. Heyward

Councilmember John Dummer, III

Councilmember Althea Salters

Councilmember Kenneth L. Smalls Sr.

Mayor Pro Tem Herbert Townsend

Councilmember Ezell G. Middleton

Councilmember Annette Sausser

Attest:

Niema Gantt-Brown, Town Clerk-Treasurer

RESOLUTION # 2014-27

A RESOLUTION FOR THE ADOPTION OF THE CHARLESTON REGIONAL HAZARD MITIGATION PLAN

WHEREAS, the Town of James Island has experienced the effects of natural and man-made hazard events; and

WHEREAS, the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended Charleston Regional Hazard Mitigation Plan; and

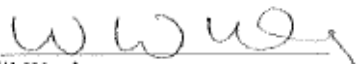
WHEREAS, the recommended Charleston Regional Hazard Mitigation Plan has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS, the Town of James Island is required to adopt the amended version of this Plan on a five-year cycle for the County to remain eligible for certain Federal programs in which Charleston County participates;

NOW THEREFORE, BE IT RESOLVED THAT:

1. The Charleston Regional Hazard Mitigation Plan is hereby adopted as an official Plan of the Town of James Island
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the Plan to the Town of James Island.

Adopted this 16th day of October, 2014


Bill Woolsey
Mayor

ATTEST


Frances Simmons
Town Clerk

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
TOWN COUNCIL FOR THE TOWN OF McCLELLANVILLE, S.C.
Resolution No. 2013-5**

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of McClellanville originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of McClellanville to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of McClellanville, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town Council for the Town of McClellanville, S.C.

Effective this 7th Day of Oct, 2013

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
TOWN OF MEGGETT, MEGGETT TOWN COUNCIL**

Resolution No. 2013-04

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Meggett originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the town to remain eligible for certain Federal programs in which Charleston County participates, and

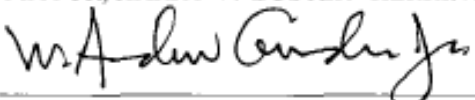
NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Meggett, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the TOWN OF MEGGETT, MEGGETT TOWN COUNCIL.

Effective this 28th Day of October 2013



MAYOR, HARRY V. "BUSTER" HERRINGTON III



W. ANDREW GOWDER JR., TOWN ATTORNEY

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
THE RAVENEL TOWN COUNCIL**

Resolution No. 2013-003

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Ravenel originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Ravenel to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Ravenel, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Ravenel Town Council.

Effective this 29th Day of October, 2013

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY**

Town of Rockville Mayor and Council

Resolution No. 111813

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Rockville originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Rockville, Charleston County, South Carolina to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Rockville, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town of Rockville and its Mayor and Council

Effective this 18 Day of November, 2013



Mayor, Town of Rockville

TOWN OF SEABROOK ISLAND

**RESOLUTION 2013-03, A RESOLUTION FOR THE ADOPTION OF
THE REVISED CHARLESTON REGIONAL HAZARD
MITIGATION PLAN**

ADOPTED October 22, 2013

WHEREAS, the Town of Seabrook Island has experienced the effects of natural and man-made hazard events; and

WHEREAS, The Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS, the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS, the Town of Seabrook Island originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004 and is required to adopt the amended version of this plan on a five-year cycle for the Town to remain eligible for certain Federal programs in which the Town of Seabrook Island participates; and

NOW, THEREFORE, be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Seabrook Island.
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town Council for the Town of Seabrook Island.

Done this 22nd day of October, 2013.

TOWN OF SEABROOK ISLAND



Mayor



Resolution
Number 2013-09

City of Charleston
South Carolina

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY**

The City of Charleston, South Carolina

Resolution No.

- WHEREAS** the County of Charleston has experienced the effects of natural and man-made events; and
- WHEREAS** the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and
- WHEREAS** the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional, and local government agencies and has been supported by those reviewers; and
- WHEREAS** the City of Charleston originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the City of Charleston to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The Charleston Regional Hazard Mitigation Plan is hereby adopted as an official plan of the City of Charleston, and

2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the Mayor and City Councilmembers of the City of Charleston.

Effective this the 23rd Day of Oct. 2013



JOSEPH P. RILEY, JR.
MAYOR

ATTEST



VANESSA TURNER MAYBANK
CLERK OF COUNCIL



CITY OF FOLLY BEACH

Introduced by: Mayor Goodwin

Date: October 8, 2013

RESOLUTION NO. R45-13

A RESOLUTION BY THE FOLLY BEACH CITY COUNCIL ADOPTING THE REVISED CHARLESTON REGIONAL HAZARD MITIGATION PLAN.

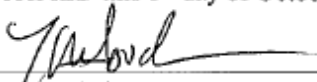
- WHEREAS,** the City of Folly Beach has experienced the effects of natural and manmade hazard events; and
- WHEREAS,** the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Mitigation Plan*; and
- WHEREAS,** the *Charleston Regional Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and
- WHEREAS,** the City of Folly Beach originally adopted the *Charleston Regional Mitigation Plan* in 1999 and readopted it in 2004, 2008, and is required to adopt the amended version of this plan on a five year cycle for the City of Folly Beach to remain eligible for certain Federal programs in which City participates;

NOW THEREFORE BE IT RESOLVED by the Folly Beach City Council, duly assembled, that

SECTION 1. Administration hereby approves and adopts the revised *Charleston Regional Mitigation Plan* as the official plan of the City of Folly Beach.

SECTION 2. *The Charleston Regional Hazard Mitigation Project Committee* is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Folly Beach City Council.

RATIFIED this 8th day of October, 2013 at Folly Beach, South Carolina, in City Council duly assigned.



Tim Goodwin, Mayor

Mary E. Cunningham, CMC
Municipal Clerk

**A RESOLUTION FOR THE ADOPTION OF THE REVISED *CHARLESTON
REGIONAL HAZARD MITIGATION PLAN* BY
TOWN OF KIAWAH ISLAND**

Resolution No. 2013-4

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents / business organizations / professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town has annually adopted resolutions to approve its Action Plan outlining projects to be undertaken to proactively address hazard mitigation since; and

WHEREAS the Council for the Town of Kiawah Island originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Kiawah Island to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Kiawah Island, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Council for the Town of Kiawah Island.

Effective this 3rd Day of December, 2013


The Honorable Charles R. Lipuma, Mayor

ATTEST:

Petra Reynolds, Town Clerk

RESOLUTION NO. R.13092

STATE OF SOUTH CAROLINA)
)
COUNTY OF CHARLESTON)
)
TOWN OF MOUNT PLEASANT)

A RESOLUTION ADOPTING THE
REVISED *CHARLESTON REGIONAL*
HAZARD MITIGATION PLAN

WHEREAS the Town of Mount Pleasant has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan (2013)*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the County of Charleston and Town of Mount Pleasant originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town to remain eligible for certain Federal programs in which the Town of Mount Pleasant participates, and

NOW THEREFORE be it resolved by the Mayor and Councilmembers of the Municipality of Mount Pleasant, in Council assembled, that the *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Mount Pleasant, and

BE IT FURTHER RESOLVED that the Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Mount Pleasant Council.

THIS RESOLUTION SHALL BE EFFECTIVE IMMEDIATELY UPON ITS ADOPTION.

SIGNED, SEALED AND DELIVERED THIS 11 DAY OF September, 2013.



William D. Swails, Mayor
Town of Mount Pleasant


ATTEST:



Christine Barrett
Clerk of Council

September 11, 2013

APPROVED AS TO FORM:



David G. Pagliarini
Corporation Counsel

**A RESOLUTION
AUTHORIZING THE MAYOR OR HIS DESIGNEE TO ADOPT THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS, the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended Charleston Regional Hazard Mitigation Plan; and

WHEREAS, the recommended Charleston Regional Hazard Mitigation Plan has been widely circulated for review by residents, business organizations, and professional organizations of the unincorporated and incorporated areas of Charleston County and the state, federal, regional, and local government agencies and has been supported by those reviewers; and

WHEREAS, the City of North Charleston originally adopted the Charleston Regional Hazard Mitigation Plan in 1999 and readopted it in 2004 and 2008; and the City is required to adopt the amended version of this plan on a five-year cycle for the City to remain eligible for certain federal programs in which Charleston County participates.

NOW, THEREFORE BE IT RESOLVED that the Charleston Regional Hazard Mitigation Plan is hereby adopted as an official plan of the City of North Charleston.

AND BE IT FURTHER RESOLVED that the Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing and maintaining – in accordance with the Community Rating System – Flood Mitigation Assistance and Disaster Mitigation Act requirements and periodically reporting on the progress towards and revisions to the plan to the City of North Charleston, with a copy of such agreement attached hereto and incorporated by reference as if set forth fully herein.

THE WITHIN RESOLUTION SHALL BE EFFECTIVE IMMEDIATELY UPON ITS RATIFICATION BY CITY COUNCIL.

Resolved in City Council this 24th day of October, in the Year of Our Lord, 2013 and in the 238th year of Independence of the United States of America.


R. KEITH SUMMEY, MAYOR

APPROVED AS TO FORM:


LEGAL COUNSEL

ATTEST:


ELLEN CLARK, MUNICIPAL CLERK

**A RESOLUTION FOR THE ADOPTION OF THE REVISED
CHARLESTON REGIONAL HAZARD MITIGATION PLAN BY
*The Town Council of the Town of Sullivan's Island***

WHEREAS the County of Charleston has experienced the effects of natural and man-made hazard events; and

WHEREAS the Charleston Regional Hazard Mitigation Project Committee has prepared a recommended *Charleston Regional Hazard Mitigation Plan*; and

WHEREAS the recommended *Charleston Regional Hazard Mitigation Plan* has been widely circulated for review by residents/business organizations/professional organizations of the unincorporated and incorporated areas of Charleston County, state, federal, regional and local government agencies and has been supported by those reviewers; and

WHEREAS the Town of Sullivan's Island originally adopted the *Charleston Regional Hazard Mitigation Plan* in 1999 and readopted it in 2004, again in 2008, and is required to adopt the amended version of this plan on a five-year cycle for the Town of Sullivan's Island to remain eligible for certain Federal programs in which Charleston County participates, and

NOW THEREFORE be it resolved that

1. The *Charleston Regional Hazard Mitigation Plan* is hereby adopted as an official plan of the Town of Sullivan's Island, and
2. The Charleston Regional Hazard Mitigation Project Committee is recognized as a continuing entity charged with reviewing, maintaining in accordance with Community Rating System, Flood Mitigation Assistance, and Disaster Mitigation Act requirements, and periodically reporting on the progress towards and revisions to the plan to the Town Council of The Town of Sullivan's Island.

Effective this 19th day of November, 2013.



Michael Perkis, Mayor

Attest:


Ellen Miller, Town Clerk

Attachment 1: FRP Instructions for Distribution

**Activity 330 – Flood Response Preparations (FRP)
Instructions for Distribution**

Current as of December 2015

Approximately half of the brochures are locally produced and hundreds to thousands of the flyers are already printed and ready for distribution. The other half are FEMA produced brochures and handouts. Additional copies of these brochures and flyers could be ordered or PDF versions of all flyers are saved and can be printed local or in-house.

The department has thousands of 'Project Impact' plastic bags with the Charleston County Building Services contact information. These bags have been and will be stuffed with the brochures and delivered by Building Inspectors and other members of Initial Damage Assessment teams to affected homes, which would occur within the first 48 hours or so following a flooding event/natural disaster. The content of these bags could be altered depending upon the disaster. For example, additional earthquake information could be included or unique driving instructions for certain areas could be provided by Emergency Management.

All bags have the Building Departments contact information as well as the locally produced brochures. FEMA produced brochures feature the appropriate contact information and instructions for filing claims, documenting damages, and the outline of a basic recovery operation.

Much of the preparation documents and flyers are distributed throughout the year at various outreach events, while the Flood Response packets feature more recovery and safety information following a flood.

Attachment 2: Media Information Post Flood

Media Information Post Flood:

In the event of a major flooding event, please instruct the general public on the following:

Authority

Charleston County Emergency Management or the appropriate municipality's Emergency Management Department is the lead on emergency situations. The department will be in touch with the appropriate officials. Please follow instructions from the Emergency Operations Center and/or the Public Information Officer.

The Emergency Operations Center will publish the numbers of organizations to contact for assistance. The Red Cross and other groups will have information on supply distribution and additional assistance. Please instruct people not to attempt to return home until the Emergency Operations Center and local law enforcement have indicated it is safe to.

Driving with Flooded Roads

“TURN AROUND, DON'T DROWN” – Instruct public to avoid driving on streets where water is on roadway. The water is often deeper than it appears and flood water may have washed out the roadway surface. Six inches of water will reach the bottom of most passenger cars causing loss of control and possible stalling. A foot of water will float many vehicles. Two feet of rushing water can carry away most vehicles including sport utility vehicles (SUV's) and pick-ups. Do not attempt to drive through a flooded road. The depth of water is not always obvious. The road bed may be washed out under the water, and you could be stranded or trapped. Do not drive around a barricade. Barricades are there for your protection. Turn around and go the other way. Do not try to take short cuts. They may be blocked. Stick to designated evacuation routes. Be especially cautious driving at night when it is harder to recognize flood dangers.

Disaster Distress Hotline

SCRIPT: This is an important message from the U.S. Department of Health and Human Services. A disaster or tragedy often brings out strong emotions, such as anxiety, worry and anger, and people may want help in dealing with their feelings. The Disaster Distress Helpline (1-800-985-5990) provides confidential counseling, referrals, and other support, 24 hours a day, seven days a week. The number again: 1-800-985-5990.

Flood Recovery Tips

- Return home only when officials have declared the area safe.
- If safe to do so, take photos and document damage to home for your records.
- Before entering your home, look outside for loose power lines, damaged gas lines, foundation cracks or other damage. Never switch on the main if the building has been under water, wait for professional assistance.

- Parts of your home may be collapsed or damaged. Approach entrances carefully. See if porch roofs and overhangs have all their supports.
- Watch out for wild animals, especially poisonous snakes that may have come into your home with the floodwater.
- If you smell natural or propane gas or hear a hissing noise, leave immediately and call the fire department.
- If power lines are down outside your home, do not step in puddles or standing water.
- Keep children and pets away from hazardous sites and floodwater.
- Materials such as cleaning products, paint, batteries, contaminated fuel and damaged fuel containers are hazardous – use flashlights instead of lanterns and torches. Check with local authorities for assistance with disposal to avoid risk.
- During cleanup, wear protective clothing, including rubber gloves and rubber boots.
- Make sure your food and water are safe. Discard items that have come in contact with floodwater, including canned goods, water bottles, plastic utensils and baby bottle nipples. When in doubt, throw it out!
- Contact your local or state public health department to see if your water supply might be contaminated. You may need to boil or treat it before use. Do not use water that could be contaminated to wash dishes, brush teeth, prepare food, wash hands, make ice or make baby formula!

Flood Insurance Information

- Flooding damage is often not covered by basic homeowners or renters insurance. Flood insurance is a critical component of your security and recovery – flood insurance is available anywhere in Charleston County, though there is a 30 day waiting period in most cases. Don't be caught unprepared again – purchase flood insurance through the National Flood Insurance Program – it is highly likely you can purchase flood insurance through the same agent you purchase your auto or home insurance from.
- Contact your local agent for information concerning claims and required documentation.

Build Responsibly – Stay Safe...Get a building permit for repairs

- Without a building permit, there is no guarantee that the work being performed is safe, up to code, or done correctly. You also have no guarantee that the person performing the work is properly licensed, insured, or knowledgeable.
- If there is ever a problem with the repair/job, you as the homeowner have recourse against a properly licensed and insured contractor. If you don't get a building permit, you risk paying thousands of dollars for improper or incomplete work.
- Particularly after a disaster, there are dishonest people who try and take advantage of the situation. Even after a disaster or widespread event, proper and honest contractors will be licensed by Charleston County. Do not believe any claim by someone asking for your business who is not going to get a permit or who is not licensed.
- Some homeowners are finding when they try to sell or refinance their home, prospective buyers or lending institutions want proof that alterations are in compliance with local codes. Without a permit and inspection on record, there is no proof. The homeowner must then apply for a permit with no guarantee that the remodel will meet the codes, and

they face the possibility that the remodel must be redone or removed. This is costly and frustrating and could cause delays in refinancing or a lost sale of their home.

- Make sure you know your flooding risk before any rebuilding – if a building has been substantially damaged, the building requirements may change. Regardless of the extent of damage, there are likely building techniques or alternatives that will make any repair more flood resistant.

Important Messages concerning Flooding, Flood Hazards, and Flooding Information

Know Your Flood Hazard

Determine if your property is in the Special Flood Hazard Area (SFHA) Zone “A” “AE” or “VE”. Contact your local government for a flood zone determination.

Check for historical flooding records in your area with your local government or media outlets.

Check for existing elevation certificates with your local government or insurance agent

If you need an elevation certificate contact a local land surveyor.

Check the depth of the Base Flood Elevation (BFE) above or below building’s first floor or above existing grade on a vacant parcel.

Get a FIRMette of your location (www.msc.fema.gov) or look at a flood map at your local government offices to determine proximity to a flood hazard area.

Check to see if your property is in an area subject to wave action (“V” Zone) or coastal erosion.

Contact your local government for assistance.

Know the proximity of property to evacuation routes.

Determine if property is protected by man-made structures such as levees or dams.

Check for localized drainage issues that could result in flooding in your neighborhood.

Insure Property

Flood insurance is available through the National Flood Insurance Program; contact your insurance agent for details.

All developed properties within the designated flood hazard area should have flood insurance for buildings and contents. Federally backed mortgages must have flood insurance.

Most homeowner’s insurance policies do not cover flood damage so you will likely need a separate policy.

Renters contents are not covered by the building owner’s insurance and renters should purchase contents only flood insurance.

Property owners should inquire about any discounts that may apply in purchasing flood insurance.

If your flood insurance premium increases significantly, make sure your agent is using the correct information to rate your policy.

Know when building(s) were constructed, as ‘grandfathering’ may apply in reducing flood insurance costs.

Do not procrastinate; a 30-day waiting is typically required for flood insurance to take effect.

Ask questions from insurance agents concerning specific policy information.

Research building permit records for history of property improvements.

Protect People from the Hazard

Be aware of roadways susceptible to flooding during heavy rainfall events, do not drive through flooded areas, flowing or standing water.

Pay attention to media (TV, radio, internet) for emergency warnings and instructions.

Select an out-of-town contact for family members' in the event local telephone service is disrupted.

Designate a location/place where family or people you are responsible for can rendezvous once an evacuation order is issued.

Get an evacuation route map for each vehicle and evacuate early if a flood threat is pending.

Avoid contact with downed power lines.
Check government web sites (fema.gov, charlestoncounty.org) for flood safety information.
Stay away from areas subject to flooding during heavy rainfall events – do not wade through standing water.
Avoid contact of flood waters as this water may contain toxic materials or venomous animals or insects.
Get a weather radio to obtain flood-related weather reports at all times.

Protect Your Property from the Hazard

Shut off gas service to a building if a flood is imminent.
Disconnect electricity at the main disconnect if a flood is imminent.
Replace utility machinery above the required flood elevation.
Elevate the lowest habitable floor area above the required flood elevation.
Landscape in a hazard resistant manner.
Make plans for evacuating pets in the event of a flood, as most shelters do not accept pets.
Install backflow prevention on plumbing systems susceptible to flooding.
Sandbag areas subject to flooding.
Provide hurricane protection against wind borne debris for windows and doors.
Move valuables to the highest level of a building or evacuate with these when a flood is imminent.
Use flood resistant materials in areas below the expected flood elevation to minimize damages.

Build Smart

Hire design professionals who are familiar with local hazards in preparing construction plans.
Consult with your local building department concerning permit requirements.
Place buildings in areas with lower flood potential.
Obtain permits before you build – permits are required even if the property owner does the work himself/herself.
Only hire licensed contractors.
Ensure that building inspections are properly arranged and completed.
If you are renovating a building, determine if you are performing a substantial improvement ($\geq 50\%$).
Check the local flood ordinance for construction requirements.
Minimize the use of structural fill in constructing buildings.
Obtain a firm written quote from the contractor detailing exact work to be performed; the exact cost and schedule of start and completion of project.

Protect Natural Floodplain Functions

Protect wildlife habitat areas.
Protect dunes as these moderate flooding and erosion.
Preserve wetlands – they clean the water, protect us from flooding and provide wildlife habitat.
Do not dump anything into the storm drainage system as these discharge into our coastal waters.
Every property should plant only native plants, particularly along water bodies.
Obtain permission from the SC DHEC before doing any work near a wetland or dune area.
Minimize clearing near wetlands and/or water bodies.
Establish buffers and set buildings back from wetlands and/or water bodies.
Maintain on-site wastewater treatment systems, such as pumping out of septic tanks, every 3 to 5 years.
Don't dump boat sewage into waterways. Use pump-out stations to protect water quality and wildlife habitats.

Hurricane Preparedness/Safety

Know your evacuation route; obtain published maps.
Attach plywood or install commercially manufactured hurricane shutters over windows and patio doors.
Evacuate early and follow established evacuation routes when there is a potential hurricane threat.
Move valuables and furniture to higher areas of the dwelling.
Avoid low lying areas. Seek shelter in the highest areas.

Avoid driving if dangerous flooding conditions are imminent.
Stay alert to weather advisories and local media broadcast updates.
Monitor the track of all hurricanes.
Download a copy of the Charleston County Hurricane Guide at www.charlestoncounty.org
Make sure you have an emergency kit on-hand and that it is properly supplied.
Do not leave anything outside that is not property anchored. Store items in a garage or shed on an elevated area if possible.

General Hazard Preparedness

Inventory and photograph your home and business contents and put important papers and insurance policies in a safe place.

Have an emergency kit on hand. Check government web sites (fema.gov, American Red Cross, charlestoncounty.org) for items to include.

Listen to emergency broadcasts from local media outlets as to when it is safe to return or contact local government authorities prior to returning to property after the storm has passed.

A.2 - Overview of the Community Rating System (CRS)

The Community Rating System (CRS) is a nation-wide program sponsored by the Federal Emergency Management Agency (FEMA) through the National Flood Insurance Program (NFIP). This program has been in existence since 1990 and has as its objectives reducing flood losses, facilitating accurate insurance ratings, and promoting awareness of flood insurance. The CRS program is administered by Insurance Services Office (ISO), the same organization which provides fire department rating services for insurance companies throughout the United States.

The CRS program is a voluntary program. It accomplishes its objectives by providing incentives in the form of flood insurance premium discounts for the citizens of communities which participate in the program. Participating in the CRS program involves performing activities which exceed minimal FEMA requirements for participating in the National Flood Insurance Program. Credit points are assigned according to a schedule, which is periodically revised, based on the types and level of activities performed by a community. These activities include but are not limited to such items as providing flood related information to citizens, conducting inspections and performing needed maintenance of drainage ways, providing emergency warning to the citizens in the event of a flood, and conducting floodplain management planning. The possible activities included in Section 6 of this *Charleston Regional Hazard Mitigation Plan* are categorized in accordance with the CRS program. The six categories of potential activities addressed are preventive measures, property protection activities, activities to promote natural and beneficial functions of floodplains/preserve resources, emergency service activities, structural projects, and public information activities.

There are 10 classifications to the CRS program (1 to 10) with premium reductions for the properties in the Special Flood Hazard Area ("AA" and "V" flood zones) ranging from 0% to 45% depending upon the rating received by the community. The lower the rating in the CRS program the higher the insurance premium reduction (e.g. a Class 1 community receives a 45% reduction whereas a Class 5 receives a 25% reduction and a Class 10 receives a 0% reduction). The participating communities within Charleston County are, as of October 1, 2016, Class 4, Class 5, Class 6, or Class 7 communities. Below is a table of the communities that participate:

Table A.2-1: CRS Community Ratings and Discounts

Community Name	Current CRS Class (October 1, 2016)	% Discount (SFHA/non-SFHA)
Town of Awendaw	7	15/5
City of Charleston	6	20/10
Charleston County	4	30/10
Town of Folly Beach	7	15/5
Town of Hollywood	7	15/5
City of Isle of Palms	6	20/10
Town of Kiawah Island	5	25/10
Town of McClellanville	7	15/5
Town of Meggett	7	15/5
City of Mount Pleasant	6	20/10
City of North Charleston	7	15/5
Town of Ravenel	6	20/10
Town of Rockville	7	15/5
Town of Seabrook Island	5	25/10
Town of Sullivan's Island	6	20/10
<i>The Town of Lincolnville does not participate in the CRS program.</i>		

The benefits of participating in the CRS program include but are not limited to reduced flood insurance rates, enhanced floodplain management planning, national recognition, incentives to maintain flood programs, and becoming qualified for certain types of federal assistance (e.g. Flood Mitigation Assistance grant funding, Hazard Mitigation Grant Program funding, and Pre-Disaster Mitigation Grant Program funding) as a result of having an approved hazard mitigation plan. One of the potentially most important benefits is the enhanced preparedness for hazard events that occurs through better educating the citizens and the community officials regarding how to address the inevitable hazard events that will occur.

To enhance further preparedness and mitigating efforts, participating CRS communities active in the Charleston Regional Hazard Mitigation Plan for 2013-2014 established a multi-jurisdictional Public Information Plan (PIP) under CRS Activity 330 as described in the CRS Coordinators' Manual of 2013. The current Public Information Plan (PIP) document can be found in *Appendix 1*.

Additional information regarding the CRS program is available in the Charleston County Public Libraries, at the offices of all local jurisdictions within the Region, and through FEMA directly on their internet site at <http://www.fema.gov>.

A.3 – Overview of Project IMPACT

“Project Impact” is a Federal Emergency Management Agency (FEMA) sponsored initiative aimed at assisting communities in becoming more disaster resistant. “Project Impact” is intended to involve the public, private, and non-profit sectors in forming partnerships to achieve the goal of reducing the amount of loss associated with a hazard event. This initiative began in 1997 with seven pilot communities, and ultimately expanded to approximately 250 communities nation-wide. Charleston County was selected as the 1999 “Project Impact” community for the State of South Carolina. All of the local jurisdictions within the Charleston County Area have partnered together in this “Project Impact” initiative.

The four phases of the “Project Impact” initiative per the FEMA perspective are to build community partnerships, assess risks, prioritize needs, and build support and communicate what is being done to enhance hazard preparedness and response. The “Project Impact” initiative is intended to address any types of hazards which may strike a community. The Charleston Area “Project Impact” initiative is focused primarily upon floods, hurricanes, earthquakes, tornadoes, wildfires, hazardous material incidents and terrorism activities. This *Charleston Regional Hazard Mitigation Plan* addresses each of these types of hazards and serves as a mechanism for the assessing risks and prioritizing needs phases of “Project Impact”. This plan serves as the governing document for project selection associated with the Charleston County Area “Project Impact” initiative.

The goals of the Charleston County Area “Project Impact” initiative are incorporated into the goals of this *Charleston Regional Hazard Mitigation Plan*. Similarly, the proposed decision making organization for the “Project Impact” initiative mirrors the organization of this plan. “Project Impact” and this plan are therefore directly linked.

The Disaster Mitigation Act of 2000 uses the term “Predisaster Hazard Mitigation” (Title I) to define the “Project-Impact” type of initiative. The concepts of “Predisaster Hazard Mitigation” and “Project Impact” are to create a more disaster-resistant community through the implementation of projects and programs designed to prepare citizens and businesses in advance of a hazard event to minimize losses associated with these events. While the term “Project Impact” may be phased out over time and replaced with either “Predisaster Hazard Mitigation” or “Building a Disaster-Resistant Community”, the overall concept of preparing in advance for hazard events should remain into the future at the Federal level as a result of the Disaster Mitigation Act of 2000.

Anyone interested in becoming a partner in the Charleston County Area “Project Impact” initiative or seeking additional information about “Disaster Resistant Communities” is encouraged to contact Charleston County Building Services or any of the local jurisdictions within Charleston County for additional information.

A.4 - Public Meeting Notices 2013-2017

TO: Meetings Notice Editor -

Clear Channel Communications
Charleston City Paper
The Chronicle
Citadel Communications
Moultrie News
North Charleston/Hanahan News
Post & Courier
Charleston Free times
Goose Creek Gazette
James Island Journal
West of
Summerville Journal Scene
WCIV-TV
WCSC-TV
WCBD-TV
WTAT-TV
WTMA 1250 AM

FROM: Building Inspection Services

DATE: August 3, 2017

RE: Notice of Public Meetings

Total Number of Pages Including This Sheet: 2

The Committee that developed and updates the Charleston Regional Hazard Mitigation Plan is meeting on August 22, 2017 at 2:30 pm in Conference Room B339 of the Lonnie Hamilton III Public Services Building (4045 Bridge view Dr., North Charleston, SC). The public and media are invited to attend all committee meetings. We appreciate you including this meeting in your notices of public meetings.

Thank you again for your assistance.

NOTICE OF PUBLIC MEETINGS

August 3, 2017

The public and media are always invited to attend the Charleston Regional Hazard Mitigation Plan Committee meeting to discuss the proposed revisions to the Charleston Regional Hazard Mitigation Plan for 2017-2018. For more information, please contact Building Inspection Services at 843-202-6940.

Tuesday, August 22, 2:30pm-Charleston Regional Hazard Mitigation Plan Committee

The Hazard Mitigation Plan Committee developed and updates the Charleston Regional Hazard Mitigation Plan. This meeting will be held in Room B339 at the Lonnie Hamilton III Public Services Building at 4045 Bridge View Dr., North Charleston SC 29405.

TO: Meetings Notice Editor -

Clear Channel Communications
Charleston City Paper
The Chronicle
Citadel Communications
Moultrie News
North Charleston/Hanahan News
Post & Courier
Charleston Free times
Goose Creek Gazette
James Island Journal
West of
Summerville Journal Scene
WCIV-TV
WCSC-TV
WCBD-TV
WTAT-TV
WTMA 1250 AM

FROM: Building Inspection Services

DATE: July 14, 2017

RE: **Notice of Public Meetings**

Total Number of Pages Including This Sheet: 2

The Committee that developed and updates the Charleston Regional Hazard Mitigation Plan is meeting on July 18, 2017 at 2:30 pm in Conference Room B339 of the Lonnie Hamilton III Public Services Building (4045 Bridge view Dr., North Charleston, SC). The public and media are invited to attend all committee meetings. We appreciate your including this meeting in your notices of public meetings.

Thank you again for your assistance.

NOTICE OF PUBLIC MEETINGS

July 14, 2017

The public and media are always invited to attend the Charleston Regional Hazard Mitigation Plan Committee meeting to discuss the proposed revisions to the Charleston

Regional Hazard Mitigation Plan for 2017-2018. For more information please contact Building Inspection Services at 843-202-6940.

Tuesday, July 18, 2:30pm-Charleston Regional Hazard Mitigation Plan Committee

The Hazard Mitigation Plan Committee developed and updates the Charleston Regional Hazard Mitigation Plan. This meeting will be held in Room B339 at the Lonnie Hamilton III Public Services Building at 4045 Bridge View Dr, North Charleston SC 29405.

TO: Meetings Notice Editor -
Clear Channel Communications
Charleston City Paper
The Chronicle
Citadel Communications
Moultrie News
North Charleston/Hanahan News
Post & Courier
Charleston Free times
Goose Creek Gazette
James Island Journal
West of
Summerville Journal Scene
WCIV-TV
WCSC-TV
WCBD-TV
WTAT-TV
WTMA 1250 AM

FROM: Building Inspection Services

DATE: June 2, 2017

RE: **Notice of Public Meetings**

Total Number of Pages Including This Sheet: 2

The committee that developed and updates the Charleston Regional Hazard Mitigation Plan is meeting on June 13, 2017 at 2:30 pm in Conference Room B339 of the Lonnie Hamilton III Public Services Building (4045 Bridge view Dr., North Charleston, SC). The public and media are invited to attend all committee meetings. We appreciate your including this meeting in your notices of public meetings.

Thank you again for your assistance.

NOTICE OF PUBLIC MEETINGS

June 2, 2017

The public and media are always invited to attend the Charleston Regional Hazard Mitigation Plan Committee meeting to discuss the proposed revisions to the Charleston Regional Hazard Mitigation Plan for 2017-2018. For more information please contact Building Inspection Services at 843-202-6940.

Tuesday, June 13, 2:30pm-Charleston Regional Hazard Mitigation Plan Committee

The Hazard Mitigation Plan Committee developed and updates the Charleston Regional Hazard Mitigation Plan. This meeting will be held in Room B339 at the Lonnie Hamilton III Public Services Building at 4045 Bridge View Dr, North Charleston SC 29405.

TO: Meetings Notice Editor -
Clear Channel Communications
Charleston City Paper
The Chronicle
Citadel Communications
Moultrie News
North Charleston/Hanahan News
Post & Courier
Charleston Free times
Goose Creek Gazette
James Island Journal
West of
Summerville Journal Scene
WCIV-TV
WCSC-TV
WCBD-TV
WTAT-TV
WTMA 1250 AM

FROM: Building Inspection Services

DATE: September 14, 2016

RE: **Notice of Public Meetings**

Total Number of Pages Including This Sheet: 2

The committee that developed and updates the Charleston Regional Hazard Mitigation Plan is meeting on September 28, 2016 at 3:30pm in Conference Room B339 of the Lonnie Hamilton III Public Services Building (4045 Bridge view Dr., North Charleston, SC). The

public and media are invited to attend all committee meetings. We appreciate your including this meeting in your notices of public meetings.

Thank you again for your assistance.

NOTICE OF PUBLIC MEETINGS
September 14, 2016

The public and media are always invited to attend the Charleston Regional Hazard Mitigation Plan Committee meeting to discuss the proposed revisions to the Charleston Regional Hazard Mitigation Plan for 2016-2017. For more information please contact Building Inspection Services at 843-202-6940.

Wednesday, September 28, 2016, 3:30pm-Charleston Regional Hazard Mitigation Plan Committee

The Hazard Mitigation Plan Committee developed and updates the Charleston Regional Hazard Mitigation Plan. This meeting will be held in Room B339 at the Lonnie Hamilton III Public Services Building at 4045 Bridge View Dr, North Charleston SC 29405.

TO: Meetings Notice Editor -

Clear Channel Communications
Charleston City Paper
The Chronicle
Citadel Communications
Moultrie News
North Charleston/Hanahan News
Post & Courier
Charleston Free times
Goose Creek Gazette
James Island Journal
West of
Summerville Journal Scene
WCIV-TV
WCSC-TV
WCBD-TV
WTAT-TV
WTMA 1250 AM

FROM: Building Inspection Services

DATE: August 17, 2016

RE: Notice of Public Meetings

Total Number of Pages Including This Sheet: 2

The committee that developed and updates the Charleston Regional Hazard Mitigation Plan is meeting on August 31, 2016 at 3:30pm in Conference Room B339 of the Lonnie Hamilton III Public Services Building (4045 Bridge view Dr., North Charleston, SC). The public and media are invited to attend all committee meetings. We appreciate your including this meeting in your notices of public meetings.

Thank you again for your assistance.

NOTICE OF PUBLIC MEETINGS

August 17, 2016

The public and media are always invited to attend the Charleston Regional Hazard Mitigation Plan Committee meeting to discuss the proposed revisions to the Charleston Regional Hazard Mitigation Plan for 2016-2017. For more information please contact Building Inspection Services at 843-202-6940.

Wednesday, August 31, 2016, 3:30pm-Charleston Regional Hazard Mitigation Plan Committee

The Hazard Mitigation Plan Committee developed and updates the Charleston Regional Hazard Mitigation Plan. This meeting will be held in Room B339 at the Lonnie Hamilton III Public Services Building at 4045 Bridge View Dr, North Charleston SC 29405.

TO: Meetings Notice Editor -

Clear Channel Communications /843- 849-5570 Jay Stanley
Charleston City Paper /843- 853-6899
The Chronicle / 843-737-5443
Citadel Communications /843- 277-1212 Jennifer Bays
Moultrie News/ vboyd@moultrienews.com
North Charleston/Hanahan News / 843-744-5505
Goose Creek Patch/ goosecreek@patch.com
Post & Courier / 843-937-5579 Sharon Shiels
Charleston City Paper/ 843-576-0380
Goose Creek Gazette/ swagenlander@journalscene.com
West of / publisher@westof.net
Summerville Journal Scene / 843-873-9432
WCIV-TV/ 843-849-2519
WCSC-TV/843-402-5744
WCBD-TV / 843-884-6624
WTAT-TV / 843-554-9649
WTMA 1250 AM / 843-277-1212

FROM: Pam Mecke /Technical Service Coordinator

DATE: September 21st, 2015
RE: Notice of Public Meeting

Total Number of Pages Including This Sheet: (1)

The committee that developed and updates the *Charleston Regional Hazard Mitigation Plan* is meeting on Wednesday, September 23th, at 2:30 p.m. in Conference Room B-339 of the Lonnie Hamilton III Public Services Building (4045 Bridge View Dr., North Charleston, SC 29405). The public and media are invited to attend all committee meetings. The Charleston Regional Hazard Mitigation Plan is necessary for local government entities within Charleston County to be eligible for several pre and post-hazard event sources of federal funding. The meeting is held to discuss the updates to this plan and future mitigation activities.

We appreciate your including this meeting in your notices of public meetings. Thank you again for your assistance.

FROM: Martin Erbele /Assistant Floodplain Coordinator, CFM
DATE: September 17th, 2014
RE: Notice of Public Meeting

Total Number of Pages Including This Sheet: (1)

The committee that developed and updates the *Charleston Regional Hazard Mitigation Plan* is meeting on Wednesday, September 24th, at 2:30 p.m. in Conference Room B-339 of the Lonnie Hamilton III Public Services Building (4045 Bridge View Dr., North Charleston, SC). The public and media are invited to attend all committee meetings. The Charleston Regional Hazard Mitigation Plan is necessary for local government entities within Charleston County to be eligible for several pre and post-hazard event sources of federal funding. The meeting is held to discuss the updates to this plan and future mitigation activities. A draft of the Plan will be discussed and voted upon. The draft is available online at <http://www.charlestoncounty.org/departments/building-inspection-services/hazard-mitigation-plan.php>

We appreciate your including this meeting in your notices of public meetings.

Thank you again for your assistance.

TO: Meetings Notice Editor -

Clear Channel Communications / 849-5570 Jay Stanley
Charleston City Paper / 853-6899
The Chronicle / 737-5443
Citadel Communications / 277-1212 Jennifer Bays
Moultrie News/ vboyd@moultrienews.com
North Charleston/Hanahan News / 744-5505

Goose Creek Patch/ goosecreek@patch.com
Post & Courier / 937-5579 Sharon Shiels
Charleston City Paper/ 576-0380
Goose Creek Gazette/ swagenlander@journalscene.com
West of / publisher@westof.net
Summerville Journal Scene / 873-9432
WCIV-TV/ 849-2519
WCSC-TV/402-5744
WCBD-TV / 884-6624
WTAT-TV / 554-9649
WTMA 1250 AM / 277-1212

FROM: Martin Erbele /Assistant Floodplain Coordinator, CFM
DATE: July 8th, 2014
RE: **Notice of Public Meeting**

Total Number of Pages Including This Sheet: (1)

The committee that developed and updates the *Charleston Regional Hazard Mitigation Plan* is meeting on Tuesday, July 8th, 2014 at 3:00 p.m. in Conference Room B-339 of the Lonnie Hamilton III Public Services Building (4045 Bridge View Dr., North Charleston, SC). The public and media are invited to attend all committee meetings. The Charleston Regional Hazard Mitigation Plan is necessary for local government entities within Charleston County to be eligible for several pre and post-hazard event sources of federal funding. The meeting is held to discuss the updates to this plan and future mitigation activities.

We appreciate your including this meeting in your notices of public meetings.

Thank you again for your assistance.

TO: Meetings Notice Editor -

Clear Channel Communications / 849-5570 Jay Stanley
Charleston City Paper / 853-6899
The Chronicle / 577-6099
Citadel Communications / 277-1212 Jennifer Bays
Moultrie News / 849-0214
North Charleston/Hanahan News / 744-5505
Post & Courier / 937-5579 Sharon Shiels
Charleston Free Times / 821-5246
Goose Creek Gazette/ 572-0312
James Island Journal / 849-0214
West of / 766-9375 Lorne Chambers
Summerville Journal Scene / 873-9432
WCIV-TV/ 849-2519
WCSC-TV/402-5744

WCBD-TV / 884-6624
WTAT-TV / 554-9649
WTMA 1250 AM / 277-1212

FROM: Martin Erbele / Assistant Floodplain Coordinator, CFM
DATE: August 7th, 2013
RE: **Notice of Public Meeting**

Total Number of Pages Including This Sheet: 2

The committee that developed and updates the *Charleston Regional Hazard Mitigation Plan* is meeting on Wednesday, August 7th, 2013 at 3:00 p.m. in Conference Room A-214 of the Lonnie Hamilton III Public Services Building (4045 Bridge View Dr., North Charleston, SC). The public and media are invited to attend all committee meetings. The plan was updated to include hazardous events that occurred in the Charleston County area between April 2012 and May of 2013, such as floods, tornadoes and hazardous material situations, as well as mitigation activities. The Charleston Regional Hazard Mitigation Plan is necessary for local government entities within Charleston County to be eligible for several pre and post-hazard event sources of federal funding. The meeting is held to discuss the updates to this plan and future mitigation activities.

We appreciate your including this meeting in your notices of public meetings.

Thank you again for your assistance.

A.5 – Previous Yearly Meeting Minutes

**As a placeholder for the August 22 meeting minutes, the third and final meeting for the year, an agenda is below detailing what will be discussed at the meeting. The minutes will replace the agenda once the meeting has taken place.



Charleston Area – Project Impact
Hazard Mitigation & Public Information Plan Committee Meeting
August 22, 2017 2:30 pm
Lonnie Hamilton III, Public Services Building
4045 Bridge View Drive, North Charleston
Room B339 (3rd Floor)

AGENDA

1. Opening Comments
2. Approval of Minutes of Meeting held July 18, 2017 (attachment 1)
3. Approval and/or comments on the Final Draft of the 2017-2018 Charleston Regional Hazard Mitigation Plan
 - a. Executive Summary (attachment 2)
4. Adoption Process Update
5. Project Impact Subcommittee Meeting
 - a. Open discussion of current topics and messages
 - b. Outreach opportunities
 - c. Grants: Expos and Educational TV Programs
6. Good of the Order



Hazard Mitigation & Public Information Plan Committee Meeting Minutes
July 18, 2017 2:30 PM; 4045 Bridge View Drive, N. Charleston, Room B339

Members in Attendance:

Jurisdiction Members: William Horne (Charleston County Building Inspection Services), Michele McClellan (Town of McClellanville), Jody Muldrow (Town of Awendaw), Ed Holton (Town of Hollywood), John Porcelli (Town of James Island), Douglass Kerr (City of Isle of Palms), Emily Raby (Town of Mt. Pleasant), Mark Bloomer (Town of Ravenel), Randy Pierce (Town of Seabrook Island), Eric Lutz (Town of Folly Beach), James Whittaker (City of North Charleston), Laura Cabiness (City of Charleston), Bruce Spicher (Town of Kiawah Island), Randy Robinson (Town of Sullivan's Island)

Stakeholder Members: Mark Johnson (Town of James Island), Chris Silcox (Insurance Agent), Anne Sass (Roper St. Francis Healthcare), Aleta Riesberg (Real Estate Agent), Sean Hughes (Charleston County School District), Aaron Pope (Town of Folly Beach), Martine Wolfe-Miller (Town of Mt. Pleasant), Ben Brown (City of North Charleston), Ronnie Freeman (Mt. Pleasant Waterworks), Robert Cochran (Town of Ravenel citizen), Will Salters (OCRM-DHEC), Cindy Cahill (Charleston County Building Inspection Services), Niki Grimbball (Charleston County Building Inspection Services)

Others in Attendance: Katie Faith (graduate student intern College of Charleston), Lauren Feder (undergraduate student intern College of Charleston)

Opening Comments and Introduction: Niki Grimbball called the meeting to order at 2:53pm. She began by inquiring whether all members had reviewed the meeting minutes from the last Committee meeting (June 13th, 2017). After obtaining verbal confirmation of this, Mrs. Grimbball called to make a motion to approve the meeting minutes. This motion was made, seconded, voted on and approved unanimously. After Mrs. Grimbball asked whether any Committee members had any comments on the attachments previously provided at the June 13th meeting, this process was repeated. No comments or changes were proposed; the recommendations included on these attachments were unanimously approved.

HMP Adoption Process: Attachment 2 of the agenda packet was a sample resolution for the adoption of the revised Charleston Regional Hazard Mitigation Plan. All jurisdictions must complete their adoption processes in September. All jurisdictions must do this so that the County can collect copies of all signed resolutions and consolidate them into the final version of the Plan before the October 1st deadline to submit it to the State. This deadline must be met in order for any jurisdictions to be eligible to receive any FEMA grant funding. If you need any assistance, please reach out the Building Inspection Services Department.

***An email amendment was made to clarify this process on Monday July 31, 2017. This email was sent to all Committee members. Below is the information that was sent out:*

- 1. Draft HMP will be sent out this week to the Committee, July 31-Aug. 4; please review this draft and submit any revisions or comments as soon as possible.*
- 2. Draft will be sent to SCEMD this week (July 31-Aug 4) as well- they will review it before sending to FEMA. This will give us the chance to make revisions suggested by the Committee and the State at the same time before it goes to FEMA.*
- 3. The final Plan approval by the Committee will occur at the Aug. 22 meeting. Immediately following approval, the Final Plan with any/all corrections will go to FEMA.*

4. Here is where the major change lies: the requirement is that the Plan is SUBMITTED to the State by Oct. 1, and it is FEMA's suggestion that the State reviews the Plan BEFORE it is adopted by each jurisdiction. So, with this in mind, that moves our adoption timeline back a bit since the Plan is not required to be adopted BEFORE sending to FEMA. Once FEMA determines that the Plan is approvable, then we will all get on the books to have our Councils adopt the Plan. Though still imperative to have the Plan adopted as soon as possible, we won't be able to adopt until it is approved by FEMA. There have not been any drastic changes to the Plan so we anticipate that everything will go through smoothly. Once we hear from them we will send out a notice.

A list of the jurisdictions that need to adopt the Plan formally was included.

HMP Action Plans: Each jurisdiction needs to submit their 2016-2017 status reports and 2017-2018 action plans by July 21st. Like the copies of each jurisdiction's adoption resolution, each jurisdiction's status and action plans must be included in the hazard mitigation plan. If a jurisdiction is going to use the County's action plan, please send Mrs. Grimbball an email telling her of your plans and she will add your jurisdiction in.

HMP Final Draft: A final draft of the hazard mitigation plan is tentatively scheduled to be sent out to everyone and posted on the Charleston County website at the beginning of August (July 31-Aug 4). An executive summary will be available at the next Committee meeting (August 22nd, 2017). All submitted adoption resolutions, status reports, and action plans will be included in the draft. We want to provide this draft as soon as possible in order to give each jurisdiction time to review and comment on the document before their formal adoption processes need to start. The Charleston County Council adoption process takes 3 readings before it is approved, so we need to start the process in early August to have the cycle completed before the October 1st deadline. Council meetings are scheduled for August 22nd, September 12, and September 26th. Time is of the essence, so please check your council schedules and start the process as soon as you can.

***This timeline was changed in the email amendment mentioned above.*

Project Impact Subcommittees:

Attachment 7 from the June 13th was an organizational chart of the Project Impact Committee and its 4 subcommittees. These 4 subcommittees work on specific target areas of interest, meeting to discuss projects, and make recommendations to the advisory committee, the body comprising a collection of representation from each subcommittee along with other members. Supervising this body is the *Hazard Mitigation and Public Information Plan Committee*. Project Impact subcommittees should meet on a quarterly cycle – at the August 22nd meeting we will start that cycle in the 3rd quarter of the 2017 year.

Mrs. Grimbball proposed to have a regularly scheduled meeting date so that all subcommittee members could keep up with the schedule. She suggested the 2nd Tuesday of the middle quarter month, i.e. Tuesday November 14, 2017, February 13, 2018, May 8, 2018, and then August 14, 2018. If this does not work for everyone, then other suggestions and flexibility are welcomed. Additionally, the separate subcommittees could establish schedules that differ slightly from the other subcommittees if certain days worked better for certain groups. These differing schedules will not be able to be established right away. Rather, we will have a combined meeting of the subcommittees for the first few meetings, then a divergence can happen once a pattern is established.

Attachment 3 included topics and messages for discussion at the breakout sessions planned for the subcommittees at the August 22nd meeting. The first 6 topics listed are

required for CRS credit. The last 4 were created by past subcommittees and give us extra credit points for CRS. Please review these topics and bring any comments or concerns to the next meeting.

A Committee member asked if a brochure that was presented on a digital billboard would count towards her jurisdiction's credit. Mr. Horne clarified that yes it should receive credit as long as it is an on-going project and they were able to provide documentation of it.

Mrs. Grimball asked that all jurisdictions participating in the CRS program provide a list and photographs of the brochures that are displayed in their offices to be added to the Outreach Projects list for credit before the Public Information Plan is submitted with the Hazard Mitigation Plan.

Closing: In closing, Mrs. Grimball reminded all members of the upcoming deadlines: all status reports and action plans need to be sent to Charleston County Building Inspection Services by July 21st, a draft of the Plan will be distributed in early August, the Plan must be adopted by each jurisdiction by September in order to accommodate for the State's deadline for submission on October 1st (**this timeline was changed in the email amendment noted above). Being no other business, the next meeting is to be held on August 22, 2017. A motion to adjourn was made by Mrs. Grimball. The meeting adjourned at 3:05 pm.



Hazard Mitigation & Public Information Plan Committee Meeting Minutes
June 13, 2017 2:30 PM; 4045 Bridge View Drive, N. Charleston, Room B339

Members in Attendance:

Jurisdiction Members: Carl Simmons (Director, Charleston County Building Inspection Services) Michele McClellan (Town of McClellanville), Jody Muldrow (Town of Awendaw), Randy Pierce (Town of Seabrook Island), Joe Henderson (Town of Sullivan's Island), John Porcelli (Town of James Island), Mark Bloomer (Town of Ravenel), Eric Lutz (City of Folly Beach), Bruce D. Spicher (Town of Kiawah Island), Hillary C. Repik (Town of Mount Pleasant), James Whittaker (City of North Charleston), Mark J. Wilber (City of Charleston)

Stakeholder Members: Jordan Bradway (Roper St. Francis Healthcare), Ken Fisher (St. Andrews PSD), Ryan Henderson (Charleston County Parks and Recreation Commission), Robert George (SC Aquarium), Anne Sass (Roper St. Francis Healthcare), Sean Hughes (Charleston County School District), Chris Silcox (Insurance Agent), William Salters (SC DHEC OCRM), Robert Cochran (Town of Ravenel citizen), Stewart Weinberg (City of Charleston citizen), Ronnie Freeman (Town of Mount Pleasant citizen)

Other Participating Partners: Cindy Cahill (Charleston County Building Inspection Services), Aaron Pope (City of Folly Beach), Broch Clary (Charleston County EMD), Mark Johnson (Town of James Island citizen), John Gregg (Town of Seabrook Island), Rob Rogerson (Town of Mount Pleasant), Katherine Hendricks (Town of Mount Pleasant), Benjamin Brown (City

of North Charleston), Chris Wannamaker (Charleston County Public Works), Emily Raby (Town of Mount Pleasant), Eric Adams (Charleston County Transportation), Taylor Hall (Charleston County Transportation)

Others in Attendance: Niki Grimball (Building Inspection Services), Katie Faith (graduate student intern College of Charleston), Sean Rogan (graduate student intern College of Charleston), Lauren Feder (undergraduate student intern College of Charleston)

Opening Comments and Introduction: Carl Simmons called the meeting to order at 2:53pm. He began with a summary of the changes to the procedure for passing the Hazard Mitigation Plan this year. Unlike the last four years, when the Committee could just notify their local governments of each year's update of the Hazard Mitigation Plan, the five-year update (last five-year update was in 2013) needs to be formally adopted by local governing bodies. This adoption can be in the form of a resolution instead of an ordinance, if the governing body so prefers. Mr. Simmons emphasized that this must be a formal decision made by each council. He then went on to ensure all members had reviewed the meeting minutes from the last Committee meeting (September 28, 2016). After obtaining verbal confirmation of this, Mr. Simmons called to make a motion to approve the meeting minutes. This motion was made, seconded, voted on and approved unanimously.

Survey Results: Attachment 2 of the agenda packet was the Jurisdiction and Citizen surveys given out to residents of participating counties. These results benefit not only the Charleston Regional Hazard Mitigation Plan, but a national organization called Resilient America as well. These results were to give the Committee members a feel for what their communities think are the most pressing hazards in our area. Attachment 4 in the agenda packet listed all the hazards experienced in this area in the past year. Mr. Simmons then highlighted a new addition to the hazards list: sea level rise. Information about the new hazard – added based on community concern over the hazard and survey results – was provided in agenda Attachment 3. Also include as agenda Attachment 5 was an outline presented with basic changes that need to occur throughout the Plan to bring it up-to-date. Mr. Simmons asked the present Committee members to think over any more additions to the hazards list, and communicate any additions, comments, or concerns to the Building Inspection Services Department before the next Hazard Mitigation Committee Meeting (scheduled for July 18, 2017).

Action Plans: Mr. Simmons listed off the jurisdictions that have not submitted action plans to the Department. These jurisdictions include, but are not limited to: City of Charleston, Hollywood, Kiawah Island, Lincolnton, Mount Pleasant, Seabrook Island, and St. Andrews Parks and Recreation. The County has also not submitted an action plan. In previous years, the County has completed one and sent it out to all jurisdictions. This will be done a bit differently this year; the County is allowing more time to collect survey results before issuing theirs as an example to interested jurisdictions. This is to

Public Information Plan: Mr. Simmons emphasized the impact changes to the Public Information Plan would have for CRS communities. He told the Committee to expect around a 25 percent markup on their CRS points concerning public information and outreach. He then stepped aside to allow Niki Grimball to give a status update on the Public Information Plan. After introducing herself – Mrs. Grimball has been with the county for about 8 months and may not have met all members in person yet – Mrs. Grimball summarized the changes to the Public Information Plan. Now a standalone document, the Public Information Plan is an integral part of Project Impact, listing instructions on committee makeup and its stakeholders.

She stressed that this complex document is still a part of the Hazard Mitigation Plan, but it can also act as a standalone document. The document is currently under technical review status with FEMA, which means they are reviewing it to ensure it has all the requirements it needs. Mrs. Grimball expressed the County's hope that the Plan would get the maximum points with regards to the Public Information portion of the CRS credits. She reminded the members present that this would be beneficial to all jurisdictions who adopt this Public Information Plan, as these credits would then be awarded to their communities as well.

Distribution Materials:

She then pointed out agenda Attachment 6, a list of the brochures that the County has available and distributes at events, in County offices and in County libraries. If any jurisdictions or members wish to have any of these brochures, the Building Inspection Services Department has updated many of them in the last year with grant funding. Digital copies are available as well upon request. Also available at the Building Services Department is boxes of flood mailers for all of the jurisdictions the Department does not serve. While funding put a cap out how many the Department could mail out—flood mailers were distributed to all Unincorporated and floodplain residents of jurisdictions served by the County—the Department has printed enough flood mailers for all floodplain residents in the County. Jurisdictions were asked to pick up a box from Cindy Cahill after this meeting.

Mr. Simmons expanded upon the updates to the brochures. He reminded the Committee that last year, FEMA and the Public Information Plan had six specific topics you had to educate your citizens on to get credit. The Department extended this number of topics to ten. Each individual jurisdiction can get credit for these brochures, but only if they distribute them to their citizens as well; it will not count for them if the County is the only one distributing the brochures.

Niki Grimball answered a question pertaining to whether a jurisdiction can received CRS credit for setting out brochures instead of sending them directly to residents. Mrs. Grimball and William Salters of SCDHEC explained that while some credit will be awarded for displaying the brochures, you can receive more credit by mailing it out, as this will reach more people. William Salters of DHEC OCRM division offered a booklet that has been approved preliminarily regarding beachfront management, and made this booklet available to any interested parties.

Hazard Mitigation & Public Information Plan Committee Meeting Minutes (cont.)

FEMA Preliminary Flood Maps: When asked how the County has reacted to FEMA's new preliminary flood maps, Mr. Simmons said the County has responded heavily with community outreach in several locations. Advertised as "open houses" by FEMA, these meetings did not qualify as public hearings. Mr. Simmons explained that the only way to have a public hearing is to publish it in the federal registry and place 2 public advertisements about the hearing 15 days apart from each other. Before the preliminary maps can be approved, these hearing have to occur and FEMA will have to review and respond to all submitted comments and concerns. Final decisions on these concerns have to be published in the federal registry. Mr. Simmons praised the accuracy of the LiDAR (Light Detection and Ranging) technology used to pinpoint elevations. These evaluations usually came within 0.018 accuracy, except for in areas with heavy tree foliage. The Department spot-checked these numbers and found them mostly consistent. He also pointed out how these maps will save you lots of letters of map revisions, because of the accuracy eliminating many of the elevation disputes usually filed. Mr. Simmons outlined the problems with the preliminary maps: property maps got skewed with overlays, some homes are in flood zones when they should not be, or vice versa; the general trend on these maps is areas seeing lower elevation statuses, causing some people to dangerously think they may no longer need flood insurance;

the LiDAR technology is less efficient in tree-dense areas; and the timeline to approving these maps continues to lengthen, with FEMA saying it could be December 2018 or later before they are put into effect. Mr. Simmons emphasized that no one should be following the new maps yet, they are not official yet. However, he did point out changes coming with the new maps, including a Coastal AE zone. He warned that these changes were not done without careful consideration. He thinks these kind of delineations could lead to some new regulations coming or some actuary rate hikes.

Closing: In closing, Mrs. Grimball asked any members who already knew they would like to be part of Project Impact's subcommittees to please sign up as they left. The four subcommittees, listed on agenda Attachment 7, are: Structural Projects Committee, Natural Benefit Committee, Emergency Services Committee, and Property Protection/Preventative Activities Committee. In review, Mrs. Grimball and Mr. Simmons discussed that the Project Impact By-Laws, Charleston County Action Plan, details on jurisdiction adoption, pdf versions of the brochures and information on new grants in process for submittal will be sent out to the Committee prior to the next meeting. Being no other business, the next meeting is to be held in July 18, 2017. A motion to adjourn was made by Mr. Simmons. The meeting adjourned at 3:30pm.



Hazard Mitigation & Public Information Plan Committee Meeting Minutes

September 28, 2016 3:30 PM Conference Room B339; 4045 Bridge View Drive, N. Charleston

Members in Attendance:

Members in Attendance: Carl Simmons (Director, Building Inspection Services), John Porcelli (Town of James Island), Mark Bloomer (Town of Ravenel), John Gregg (Citizen), Anne Sass (Roper St. Francis), Michael Hardy (City of North Charleston), Eric Lutz (City of Folly Beach), Aaron Pope (City of Folly Beach), Hillary Repik (Town of Mt. Pleasant), Robert Rogerson (Town of Mt. Pleasant), Chris Silcox (Citizen), Fred Kemmerlin (City of North Charleston), Thomas Robinson (Town of Sullivan's Island), William Salters (SCDHEC), Laura Cabiness (City of Charleston), Dave Vega (Citizen), Jody Muldrow (Town of Awendaw), Henry Dingle (Citizen), Albert George (South Carolina Aquarium), Scott Cave (Atlantic Business Community), Kathy Houghton (Citizen), Julie Hensley (Citizen)

Others in attendance: William Horne (Building Inspection Services), Cindy Cahill (Building Inspection Services), Kathryn Troutman (Building Inspection Services)

Opening Comments and Introduction: Carl Simmons called the meeting to order at 3:36pm. He began with the summary of changes to the 2016 Charleston Regional Hazard Mitigation Plan which is also available on the website. It outlines the changes that have been made to the Hazard Mitigation Plan from last year to this year, including some documentation from

2013, for which he noted it is a cumulative process that is needed for next year. A motion to approve the Plan as revised was made by Rob Rogerson, seconded by Fred Kemmerlin, voted on and approved unanimously. Mr. Simmons stated that the Plan is now approved and will be forwarded to FEMA no later than Friday, September 30, 2016, along with the individual item reports that are needed for the CRS community.

Program for Public Information: Mr. Simmons proceeded regarding the Program for Public Information, from the August meeting, which has been changed to the Program Information Plan (PIP). He stated it is an integral part of the Hazard Mitigation Plan. He reviewed that the PPI committee was started in 2013, in the Hazard Mitigation Plan at that time, based on the draft of the 2013 issue of the CRS Coordinators Manual. There are 7 specific steps to setting up a PPI, and in the Program for Public Information, it's the Plan which is most important:

1. Establish a PPI Committee
 - Hazard Mitigation Plan of 2013
2. Assess the communities' public information needs
 - Done each year as Hazard Mitigation Plan is updated. This was done with survey's and public hearings in 2013 and will be discussed next year regarding public hearings.

Hazard Mitigation & Public Information Plan Committee Meeting Minutes (cont.)

3. Formulate Messages
 - 10 items with 10 messages completed by the committee in 2014 Hazard Mitigation Plan and 2015 Hazard Mitigation Plan, modified in 2016 by renaming "crawl space" to "site drainage".
4. Identify outreach projects to convey messages
 - Annual function Hazard Mitigation Plan - many parallels between the Hazard Mitigation Plan and PPI - logical for one committee for all of it.
5. Examine other public information initiative
 - Annual function Hazard Mitigation Plan - in place since 2013, revisions update next year. Much time will be spent on the PPI, planning for the five year update. Mr. Simmons refers to the Stakeholders, which will be a valuable part of the PPI, and will deal with the issues in the program.
6. Prepare the PPI document
 - Refers to the Hazard Mitigation Plan and PPI - A component of the Hazard Mitigation Plan is integrated with the PPI. Mr. Simmons refers to the completed document as being one document. He further explains that each and every jurisdiction has their documents in the final plan, which includes some last minute revisions. This will be available on the website Friday, September 30, 2016. This document, some differences, which requires changes to format and other provisions.
7. Implement, monitor, and evaluate PPI

- Annual function – a continuing process, which adding in to this Hazard Mitigation Plan is the PPI, it is a multi-purpose document. Mr. Simmons stated that the County had this reviewed, for the CRS program for Hollywood and six other jurisdictions just last year, going through the whole system making modifications based on the review, and received 45 points for that review, because we didn't agree with what they were doing. The County now has a very good idea how this is done, important that it is reviewed by third-party consultants, trying to establish a national standard. 2014 will be the first year the County has completed step six, this is the first year in these minutes in which all these steps have been met.

Credit Opportunities: Mr. Simmons continued with explanation of credit opportunities. For PPI (PIP) in November, all the members will receive a letter containing a list of these opportunities.

PIP Credit Opportunities

Activity	330	Outreach Projects
	340	Hazard Disclosure
	350	Flood Protection Information
	360	Flood Protection Assistance
	420	Open Space Preservation
	540	Drainage System Maintenance

Separate Approval Required

Activity	370	Flood Insurance Promotion – this will require a completely separate approval. Certain criteria is required, Mr. Simmons will clarify these requirements and include with the letter.
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Mr. Simmons explained that everyone received credit for the evaluation of PPI in 2014, but we did not get full credit. Those who were not reviewed will have an opportunity to get credit when they are reviewed.

Membership: Mr. Simmons pointed out there are unusual things regarding membership, we didn't do very well last year, we didn't have the correct split. The final membership list will require each jurisdiction to have one person identified as a voting member, and also a person identified as a Stakeholder, this means one government identity on the committee and one private sector identity member on the committee. CRS defines Stakeholders as: floodplain residents, business leaders, insurance agents, civic groups, academia, non-profit organizations, major employers, managers of critical facilities (emphasis on this - these are special purpose districts – we did not have them classified properly) , farmers, landowners, developers, and others who are affected by flooding or whose actions can help prevent or reduce flood losses. In reviewing other documents, we had listed government members incorrectly and therefore did not receive proper credit. These other FEMA documents for Stakeholders include examples such as environmental organizations and other government agencies outside the community, e.g. school districts, levee or flood control district, regional planning agency, state coastal management office, National Weather Service. Mr. Simmons advised that when the committee sees the final membership list, there will be a government designee, and a stakeholder (some will be qualified government bodies.) Our goal is to make

this 50/50 or heavier this way. During our last evaluation, we had 48 members on the committee, only six classified as non-government. We only received 12.5% of the credit. So this will change the mode where we need to be to get full credit for the PPI rather than a percentage. Will we get another shot at it this year, the City is doing it next year, and Mr. Eric Lutz stated that Folly Beach will be done in November. Once we get the documents in to them, we will be making the improvements to make that happen. It's very important; there are enough points available through PPI that should to get all of them, it is possible to drop an entire class. In addition, for those who want to participate from each governmental body that has people in the organization, they will be listed as Other Participating Citizens, and therefore do not list them as government or Stakeholders. So for each one that is moved over, another person would be needed as a Stakeholder. Only the CRS communities will have that impact. Roper Hospital, College of Charleston, Ports Authority, etc. will be listed as Stakeholders as they do have a stake in the Hazard Mitigation Plan by definition; however, they are eligible for grants through the federal program by being involved in the Hazard Mitigation Plan but not in the CRS program.

A motion to approve the membership classifications to one per government designee and all others listed as Stakeholders or participants was made by Laura Cabiness, seconded by John Gregg. To clarify the point, Mr. Simmons advised the committee they are approving him to set up an individual in the government CRS program so that each governmental body will have one designated member, that will be their voting member and representative as the government's representative/designee and as Stakeholders, which could be other government employees, but they will not necessarily be listed as other participation. The membership classifications were voted on and approved by the committee.

After the vote, Ann Sass asked if the third part was the private sector? The committee votes on all of it, he advised, but one becomes a participant of the Hazard Mitigation Plan and the other is the Hazard Mitigation Plan and the PIP. He advised that the Plan will be on file and available on the website tomorrow.

Review brochures: Mr. Simmons then went to on to discuss what we haven't done before for PPI; we have indirectly, but not as specifically as they like to have it documented. We did have lists of other people who have things contribute to this program. We have lists of every jurisdiction who has adopted by reference in their plan. We have the green belt program, because it says one of the conditions of selecting a piece of land for funding of flood plain management areas are very important and that's one of the criteria, to get as many of those areas in the system that we can. It's a part of what we had, but we haven't really gone into the things we do and have been doing since the late 1900's. These two brochures and the list of pending brochures that have been distributed to you are very important to the CRS program. The Real Estate part is because there is a provision in the CRS manual that gives credit for having a real estate brochure or effort to promote flood insurance. This new brochure, with some previous supplements, is what we are putting together and we can provide these upon request. CRS wants these available in your offices. They are free and we will get them out to everyone we can. One brochure is about flooding, which satisfies everything needed by the program, as does the Real Estate brochure. The third sheet is a list of brochures that we are updating or creating to cover all jurisdictions. A portion of the Plan

includes approval of these brochures. Mr. Simmons asked the committee to approve them as presented, as a part of our community education and outreach program for every jurisdiction. A motion to approve the brochures was made by Aaron Pope, seconded by John Gregg, voted on and approved by the committee.

2017 Five year Hazard Mitigation Plan next steps: Mr. Simmons explained that it is a mixed bag, some of it is the CRS program which is a report every year, but then some are on a three or five year cycle, then there is a different five year cycle for the Hazard Mitigation Plan. Next year, the Hazard Mitigation Plan is up again for a five year review. 2017 is the year for the complete review. We will start working on that in November of this year. Our staff member will be assigned 100% of the time for this review process. We will send it out, the information from 2013, 2014, 2015, 2016, and then 2017, and ask you to show where you came from and where you are and where you are going for the following year. It is very similar to the status reports, with a five year window. A lot of this stuff is already folded into the 2013 to 2016 data and the most that will need to be done is add another year for next year; Mr. Simmons stated he will have most of the five year plan, but won't have everything needed to get the maximum amount of credit for your action plan to satisfy the five year period. One of the things the County hasn't done well is collecting enough data from each jurisdiction; he advised that he will list what is needed and the jurisdictions can provide the data. Mr. Simmons advised the committee that working on the preliminary review of the PPI (PIP) is going to be very important; he is waiting on clarification to make sure the membership is set up the way it needs to be, so the next meeting will be by the book. He stated that he has notes from the package we did previously but there is still some grey area about what is "government" and what is not, and expects to have clarification by November.

Schedule of meetings: Mr. Simmons advised that the schedule for first meetings will be March and April, 2017, to discuss the public hearings that are required. He will make sure locations are fair for everyone. Looking at 3-5 public hearings, Charleston County will be staffing the hearings and will take care of all advertising, setup, and getting the meetings held. Surveys will be sent out for both the general public and those more heavily involved in the issues. The outside view is important to reflect if the government is doing what it is supposed to be doing and the other is how we think we need to make it work. Those packages will go out in March or April, with a ninety day turn around. This will be a part of the five year requirement. The results of surveys will help determine if changes need to be made to the Plan, which is a part of monitoring the public information program. Michael Hardy asked how many possible points are available; Mr. Simmons stated there are approximately 4500 points; however, it is almost unachievable. Tulsa was at a Class One for all their work in moving homes out of flood zones; however, he believes they were recently moved back to Class Two. He is reluctant to make recommendations beyond Class Three, the County is working on Class Three, but he hesitates to try for Class Two; to achieve that would require a lot. Laura Cabiness asked if the County was considering a three foot freeboard yet? Mr. Simmons said no, the County is currently at a two foot freeboard. He was able to show to Council that the premium credit was acceptable at two feet, but at three feet, it was not. There was some discussion about trying to achieve three feet; however Mr. Simmons did not encourage it.

Closing: In closing, Mr. Simmons noted that Dave Vega would soon be appointed to be in charge of the Real Estate Committee. Being no other business, the next meeting is to be held in November, 2016. A motion to adjourn was made by John Gregg. The meeting adjourned at 4:43pm.



Hazard Mitigation & Public Information Plan Committee Meeting Minutes

August 31, 2016 3:30 PM Conference Room B339; 4045 Bridge View Drive, N. Charleston

Members in Attendance:

Members in Attendance: Carl Simmons (Director, Building Inspection Services) Jody Muldrow (Town of Awendaw), Edward Holton (Town of Hollywood), John Porcelli (Town of James Island), Mark Bloomer (Town of Ravenel), John Gregg (Town of Seabrook Island), Christine Holderness (St. Andrews Public Safety Department), Ken Fischer (St. Andrews Public Safety Department), Jordan Bradway (Roper St. Francis), Anne Sass (Roper St. Francis), Debbie Eckard (Charleston Soil and Water Conservation District), Amanda Ritsema (SCDHEC), Albert George (South Carolina Aquarium), Michael Hardy (City of North Charleston), Stewart Weinberg (Citizen), Eric Lutz (City of Folly Beach), Aaron Pope (City of Folly Beach), Douglas Kerr (Isle of Palms), Hillary Repik (Town of Mt. Pleasant), Eyda Arroyave (City of North Charleston), Robert Rogerson (Town of Mt. Pleasant) Fred Kemmerlin (City of North Charleston), Thomas Robinson (Town of Sullivan's Island), Joe Henderson (Town of Sullivan's Island), Justin Healy (Shutter Service and Sales LLC), William Salters (SCDHEC), Bill West (Citizen), Scott Cave (Atlantic Business Community), Michael Horton (Davis and Floyd), Michelle McClellan (Town of McClellanville), Mark Wilbert (City of Charleston), Laura Cabiness (City of Charleston), James Whittaker (City of North Charleston), Mike Dalmyrele (City of North Charleston), Chris Cowart (Wells Fargo) and Katie Zimmerman (SC Conservation League).

Others in attendance: William Horne (Building Inspection Services), Cindy Cahill (Building Inspection Services).

Opening Comments and Introduction: Carl Simmons called the meeting to order at 3:30pm. He began giving insight to the importance of the committee and having every participant give one hundred percent. An error published in previous minutes was corrected. It stated that the Hazard Mitigation Plan was initially not due until 2018, but is actually due next year. The importance of having a governmental and non-governmental representative from each community was explained. There must be one of the representatives present for at least fifty percent of the meetings held. There is no specification on whether it must be a governmental or non-governmental representative present.

Approval of Minutes: Mr. Simmons asked for approval of minutes from the previous meeting. The motion to accept the minutes was made by Fred Kemmerlin (City of North

Charleston), and seconded by John Gregg (Town of Seabrook Island). The motion was approved unanimously.

Review of Draft of 2013-2016 Hazard Mitigation Plan: Mr. Simmons reviewed the materials that were not included in the draft of the Hazard Mitigation Plan as well as the municipalities that were missing vital information and the importance of their submittal.

Format changes: Mr. Simmons advised that the old format has been completely revamped. All information prior to 2013 has been compiled into an archaeological file that will be available for access online as it is not needed for the 2016-2017 Hazard Mitigation Plan. A motion to approve the reformat of the Plan was made by Hillary Repik (City of Mt. Pleasant), seconded by Eric Lutz (City of Folly Beach), voted on and approved by the committee.

Programs for Public Information: Mr. Simmons requested that the category Water Quality be removed from the topic list shortening it to 10 items. He also gave three recommendations for title changes. The first recommendation was to change the title Insured Property to FEMA'S title of Insure Property for your Flood Hazard. The second recommendation was to change the title Crawlspace Flooding to Site Drainage as it sounds more approximated. Lastly, Mr. Simmons requested that the program be renamed from Programs for Public Information to Public Information Plan. Rob Rogerson (Town of Mt. Pleasant) made a motion to remove the Water Quality portion from the topic list and accept the recommendations for title changes made by Mr. Simmons; Fred Kemmerlin (City of North Charleston) seconded the motion and it was voted on and approved by committee.

Status of New & Updated Brochures: Cindy Cahill (Building Inspection Services) was introduced by Mr. Simmons and elaborated on the status of the brochures that were being made. Mrs. Cahill advised the committee that a grant submitted in 2014 was approved. The grant is for flood mailer brochures that will include all Community Rating System topics for credit. Real Estate brochures are currently awaiting more information. All brochures are currently being edited to bring to be more appealing and informative to the public. There are also more brochures being added. Per the conclusion of the brochure discussion William Salters (SCDHEC) informed the committee that there is a resourceful document for the Community Rating System available to the municipalities and the general public online on the SCDHEC website.

Public Information Plan: Mr. Simmons advised the committee that the PIP is set to be submitted for pre-approval sometime in the following week. He stressed the importance of submitting thorough and accurate information to ensure all bases are covered. He also reiterated the importance of the presence of the representative from each municipality.

Proposal of New 2017 Survey Forms: Mr. Simmons stated that the priorities of various topics were included from previous surveys. He advised the committee that the new first survey was for the general public, and the second for governments and public agencies. He also requested that all members carefully review the survey, and send in any questions or comments they had pertaining to it. The survey returns from the community were not as successful as envisioned, and we are in high hopes for a more efficient result this year.

2017 5-year Hazard Mitigation Plan Discussion: Mr. Simmons stated that after the approval of the PIP, the Hazard Mitigation Plan for 2017 will be started in either October or November. Municipalities were advised to make as much information available in their office and online for the public.

Good of the order: Bill West (Citizen) and Stewart Weinberg (Citizen) proposed that the title Sea Level be added to the list because of how much importance it plays in the Charleston area. Mr. Weinberg offered his professional climate change public speaking services to the committee free of charge. Mr. Simmons advised that sea level was basically included with climate change. A motion to approve the PIP plan titles was made by Rob Rogerson (Town of Mt. Pleasant); seconded by Fred Kemmerlin (City of North Charleston) and approved by the committee. It was a unanimous vote.

Closing: Being no other business, the next meeting is to be held in approximately 3 weeks. The meeting adjourned at 4:32PM.



Charleston Regional Hazard Mitigation Project Committee Meeting Minutes
September 23, 2015 2:30pm Conference Room B339; 4045 Bridge View Drive, N. Charleston

Members in Attendance:

Members in Attendance: John Gregg (Town of Seabrook Island), Randy Pierce (Town of Seabrook Island), Rich Bailey (Roper St. Francis), Aaron Pope (Folly Beach), Fred Kemmerlin (Cooper River Parks), Henry Holst (Town of Rockville), John Turner (Town of Seabrook Island), Craig Weaver (Town of Kiawah Island), Tony Cervino (James Island Public Service District), Jeffrey Heckman (Town of Lincolnville), Bruce Spicher (Town of Kiawah Island), Jordan Bradway (Roper St. Francis), Ken Fischer (St. Andrews Public Service District), Ronnie Freeman (Mt. Pleasant Waterworks), Tom O'Brien (City of Charleston), Mark Wilbert (City of Charleston), Michelle McClellan (Town of McClellanville), Michael Dinunzio (City of Charleston), Mark Bloomer (Town of Ravenel), Ellie Brabham (Town of Meggett), Rick Williams (City of North Charleston), Larry Schreiber (North Charleston Sewer District), Sean Hughes (Charleston County School District), Ryan Henderson (Charleston County Parks and Recreation), Jody Muldrow (Awendaw), Joe Henderson (Sullivan's Island), Kent Scarborough (Charleston Water), Laura Cabiness (City of Charleston), Edward Holton (Town of Hollywood), Dick Cronin (Isle of Palms), Rob Rogerson (Town of Mt. Pleasant), William Barfield (City of North Charleston), Hillary Repik (Town of Mt. Pleasant), Berry Rudisill (Town of James Island), Eric Lutz (City of Folly Beach), Douglas Kerr (Isle of Palms), Charles Duberry (Town of Lincolnville).

Others in Attendance: Pam Mecke (Charleston County Building Inspection Services), Armon Hanks (Charleston County Building Inspection Services), William Horne (Charleston County Building Inspection Services)

Opening Comments and Introduction: William Horne called the meeting to order at 2:30 p.m. and thanked everyone for their attendance at the meeting. He explained that the public and media had been notified of the meeting and then introduced the other representatives from Charleston County. All attendees introduced themselves. Pam Mecke outlined the meeting agenda and briefly explained the future of the group as both the Hazard Mitigation Project/Planning Committee as well as a Program for Public Information (PPI) for the communities participating in the Community Rating System.

Approval of the Minutes: Pam Mecke asked for a motion to approve the minutes from September 23, 2015. With no discussion minutes were approved and passed unanimously.

Community Rating System: Armon Hanks reviewed the changes made in the 2013 Coordinators Manual. He explained the uncertain results of the many changes regarding the new point schedule. He discussed the Program for Public Information in the rating system and the reorganization and expansion of the Hazard Mitigation Planning Committee to also function as the Public Information Committee.

Charleston Regional Hazard Mitigation Plan Approval: Armon Hanks reviewed the updates made to the Plan which included hazard events between April 30th, 2014 - May 1st, 2015. The hazard events consisted of 13 coastal floods, 638 fire incidents, one tornado spotted with no damage, one earthquake in the Ladson/Summerville area that registered a 2.2 on the Richter scale, no hurricanes, and three rip current events that led to one death.

Program for Public Information: Armon Hanks outlined the Public Information Committee. Need to be a clear link between the governmental bodies and at least one non-governmental member. At the sign in table, municipalities confirmed their community partner and many of the partners were in attendance. With the entire group present, Armon reviewed the requirements of the PPI committee and the Plan for the coming months as the PPI develops further.

Hanks discussed the differences between Target Areas and Target Audiences. Since the Hazard Mitigation Plan is a multi-jurisdictional plan and most hazards are equally present in all jurisdictions, the agreement was to focus on audiences over the areas. In regards to target audiences, the following audiences were suggested: Residents/Businesses in the SFHA, Repetitive loss areas, Non-English speakers, Sellers and lenders, New residents/transient military residents, Builders, Tourists/Visitors, and the community at large.

A lengthy discussion on the outreach topics, messages associated with those topics, and outcomes the group would like to see as a result. The six topics required: 1. Know Your Flood Hazard, 2. Buy Flood Insurance, 3. Protect People, 4. Protect Property, 5. Build Responsibly, and 6. Protect Natural Floodplain Functions. Following those, there were 5 additional topics: 7. Hurricane Preparedness, 8. General Hazard Preparedness, 9. Flood Education, 10. Water Quality, and 11. Crawl Space Flooding. At least 10 messages were confirmed for each topic.

Wrapping up the discussion was how these messages were to be conveyed. While the group supported the previous events that had been done and felt they were effective, there was broad agreement that a centralized presence was needed. Several members voiced that there needs to be a central website, hash tag, or searchable feature for citizens to get additional information from their local municipality. Collaboration was very important to the group and the PPI committee should work to try and join existing efforts to maximize results.

On that point, Cindy Cahill introduced and explained two separate outreach and education grants the County had received preliminary approval for. The 1st grant request funds for the update and mailing of a comprehensive flooding brochure and funding for Interns to work on brochures, hazard mitigation plan and other documents as needed. The 2nd grant is for the update and printing of 10 hazard brochures, funding for more school projects and mini-grants, and the development of children's giveaways, among others. Discussion of creating templates for mitigation brochures, including the comprehensive flooding brochure and other messages was well received. The intent is to provide consistency of messages while allowing a large number of carriers of those messages. Several smaller jurisdictions welcomed the idea of templates and more structured messages. It was noted how

difficult it is for them to create their own material, but they would gladly edit phone numbers or names, and then print the information for use in their own towns. The possibility of working with Trident Tech or other schools was raised.

The final piece of the conversation related to other groups and activities that already provide some outreach and how the PPI could coordinate those efforts.

Other Discussion: Mr. Erbele concluded the meeting by reviewing the work the committee had done at the first meeting and this one. He noted the staff would draft the PPI document as the committee directed and they would send the draft to the committee to request additional comments which should then be directed to him before the document is revised and finalized. He then asked if there was any other business the committee needed to discuss and hearing none, the meeting was adjourned at 3:58 p.m.

Respectfully Submitted,
Martin Erbele, CFM
Asst. Floodplain Coordinator
Charleston County Building Services



Charleston Regional Hazard Mitigation Project Committee Meeting Minutes
September 24, 2014 2:30pm Conference Room B339; 4045 Bridge View Drive, N. Charleston

Members in Attendance:

Members in Attendance: Fred Kemmerlin (City of North Charleston), William Barfield (City of North Charleston), Gary Alford (North Charleston Sewer District), Fred Durette (Charleston County Parks and Recreation), Woody Doossche (Charleston County School District), Randy Beaver (College of Charleston), Tom O'Brien (City of Charleston), Mike Dinunzio (City of Charleston), Randy Robinson (Town of Sullivan's Island), Wayne Stellijes (Town of Sullivan's Island), Joe Henderson (Town of Sullivan's Island), Kristen Champagne (Isle of Palms Water and Sewer), Douglass Kerr (City of Isle of Palms), Rob Rogerson (Town of Mount Pleasant), Hilary Repik (Town of Mount Pleasant), Mel Bennett (Mount Pleasant Waterworks), Tony Cervino (James Island Public Service District), Berry Rudisill, (Town of James Island), Aaron Pope (Town of James Island), Eric Lutz (City of Folly Beach), Mark Bloomer (Town of Ravenel), Edward Holton (Town of Hollywood), Jeffery Heckman (Town of Lincolnville), Bruce Spicher (Town of Kiawah), Rusty Lameo (Town of Kiawah), Jody Muldrow (Awendaw), Kim Racine (Town of McClellanville), Mary Duke (Town of McClellanville), Rose Manigault (Town of Meggett), Ellie Brabham (Town of Meggett), Riley A. Bradham (Town of Rockville)

Others in Attendance: Martin Erbele (Charleston County Building Inspection Services), Cindy Cahill (Charleston County Building Inspection Services), William Horne (Charleston County Building Inspection Services)

Opening Comments and Introduction: Martin Erbele called the meeting to order at 2:40 p.m. and thanked everyone for their attendance at the meeting. Martin explained that the public and media had been notified of the meeting and that all members of the public were welcome. Martin then introduced the other representatives from Charleston County. All attendees introduced themselves. Martin outlined the meeting agenda and briefly explained the future of the group as both the Hazard Mitigation Project/Planning Committee as well as a Program for Public Information (PPI) for the communities participating in the Community Rating System.

Approval of the Minutes: Martin Erbele discussed some of the major changes to the Plan which were largely related to hazard occurrences from the previous year and a streamlined format for several of the sections. He noted several names were misspelled and those corrections had been made. He also asked each organization to ensure the CEO or official representative of the organization was correct on one of the tables in the Plan. The motion to approve the minutes from July 8, 2014 was made by Randy Beaver, seconded by Aaron Pope, and passed unanimously.

South Carolina Emergency Management Meeting: Martin spoke about the recent visit with South Carolina Emergency Management who sent two representatives on September 22nd, 2014 to discuss the Plan, the coming years' update, and how the Plan was going to continue to be modernized and streamlined. Their comments were very positive and FEMA's formal 5 year approval is good through February 2019, though a revised formal 5-year plan needs to be submitted to the State by Fall 2018 to begin the review.

Community Rating System Visits: Martin discussed the majority of municipalities were undergoing their CRS review this year and that comments from the reviews to this point were mostly positive. With the number of changes included in the updated CRS manual, a lot is uncertain, but Martin offered the County's assistance where possible. He also noted the annual recertification's for the remaining jurisdictions.

Charleston Regional Hazard Mitigation Plan Approval: Martin reviewed the hazard mitigation survey results that were discussed in the July 8, 2014 meeting. Hurricanes, Flooding, Earthquakes, Fire, and Tornadoes again topped the list of concerns for local governments and the general public. Open discussion asking members what they have heard within their own jurisdiction further confirmed the results. Upon further review of the Plan utilizing the computer projector and a printed draft version of the Plan, there were no additional comments. Tony Cervino motioned to approve the annual update and it was seconded by Eric Lutz. The group unanimously approved the update.

Program for Public Information: Martin outlined the program for public information, which requires a restructuring of the current group. There needed to be a clear link between the governmental bodies and at least one non-governmental group. At the sign in table, municipalities confirmed their community partner and many of the partners were in attendance. With the entire group present, Martin reviewed the requirements of the PPI committee and the Plan for the coming months as the PPI develops further.

Martin led a discussion on flood insurance, coverage numbers, and building counts for the area. While the insurance representative was not able to be present, their thoughts were passed through to the Town of Mount Pleasant where additional comments were made. The community representative from a lending institution offered several points on flood insurance requirements with mortgages. Under the most conservative numbers, only about 45% of the structures in Charleston County have flood insurance. There was a lengthy discussion that while mortgage requirements ensure many homes in flood zones have insurance, there are a lot of citizens who abandon flood insurance once that requirement is gone. Several members voiced a concern there was a knowledge gap on flood insurance and that citizens outside of flood zones can and should have a policy. Included in this conversation were the topics of lending and financing issues related to flooding, flood zones, and flood insurance.

Continuing through the PPI process, Martin discussed the differences between Target Areas and Target Audiences. Since the Hazard Mitigation Plan is a multi-jurisdictional plan and most hazards are equally present in all jurisdictions, the agreement was to focus on audiences over areas. But there were several areas that had distinct differences that may affect outreach strategy: Rural vs. urban areas of the county as well as beachfront areas. In regards to target audiences, the following audiences were suggested: Residents/Businesses in the SFHA, Repetitive loss areas, Non-English speakers, Sellers and lenders, New residents/transient military residents, Builders, Tourists/Visitors, and the community at large.

There was a lengthy discussion on the following outreach topics, messages associated with those topics, and outcomes the group would like to see as a result. The first six topics are required: 1. Know Your Flood Hazard, 2. Buy Flood Insurance, 3. Protect People, 4. Protect Property, 5. Build Responsibly, and 6. Protect Natural Floodplain Functions. Following those however, there were 5 additional topics discussed: 7. Hurricane Preparedness, 8. General Hazard Preparedness, 9. Flood Education, 10. Water Quality, and 11. Crawl Space Flooding. At least one message was confirmed for each topic and Martin asked for additional input throughout the coming months as the formal PPI plan is assembled. There were between five and ten suggested messages associated with each topic on the handout (see attached) given out at the meeting.

Among many great suggestions, some outreach messages suggested by the committee included messages of being a good neighbor and assisting seniors or vulnerable families with mitigation and preparedness, messages on proper ditch maintenance and ensuring they are not filled, messages that flooding occurs everywhere so be prepared, and in particular, a consensus that the PPI document should provide a schedule of sorts to ensure that time sensitive mitigation work can be done at the most effective time. For instance, advise residents to trim their trees and landscape before hurricane season to avoid creating large amounts of windborne debris.

Wrapping up the discussion was how these messages were to be conveyed. While the group supported the previous events that had been done and felt they were effective, there was broad agreement that a centralized presence was needed. Several members voiced that there needs to be a central website, hash tag, or searchable feature for citizens to get additional information from their local municipality. Collaboration was very important to the group and the PPI committee should work to try and join existing efforts to maximize results.

On that point, Cindy Cahill introduced and explained two separate outreach and education grants the County had received preliminary approval for. The 1st grant request funds for the update and mailing of a comprehensive flooding brochure and funding for Interns to work on brochures, hazard mitigation plan and other documents as needed. The 2nd grant is for the update and printing of 10 hazard brochures, funding for more school projects and mini-grants, and the development of children's giveaways, among others. Discussion of creating templates for mitigation brochures, including the comprehensive flooding brochure and other messages was well received. The intent is to provide consistency of messages while allowing a large number of carriers of those messages. Several smaller jurisdictions welcomed the idea of templates and more structured messages. It was noted how difficult it is for them to create their own material, but they would gladly edit phone numbers or names, and then print the information for use in their own towns. The possibility of working with Trident Tech or other schools was raised.

The final piece of the conversation related to other groups and activities that already provide some outreach and how the PPI could coordinate those efforts.

Other Discussion: Mr. Erbele concluded the meeting by reviewing the work the committee had done at the first meeting and this one. He noted the next step would be the creation of a draft of the formal PPI document and requested additional information and comments be directed to him to coordinate into the draft. He then asked if there was any other business the committee needed to discuss and hearing none, the meeting was adjourned at 3:58 p.m.

Respectfully Submitted,
Martin Erbele, CFM
Asst. Floodplain Coordinator
Charleston County Building Services



Charleston Regional Hazard Mitigation Project Committee Meeting Agenda
September 24, 2014 - 2:30 pm - B339 - 4045 Bridge View Drive, N. Charleston, SC

- Opening comments and introduction
- Approval of the minutes of the meeting of July 8, 2014
- Summary of meeting with South Carolina Emergency Management Department on 9/22/14
- Discussion of the revisions made to the *Charleston Regional Hazard Mitigation Plan* for the 2014-2015. Motion to approve plan.

- Discussion of Community Rating System (CRS) and recertification status
- Outlining Program for Public Information (PPI)
- Other discussion
- Adjourn

Program for Public Information Meeting – 9/24/14

- **Establish the PPI Committee:**
- **Committee assesses the communities’ public information needs:**
 - Assess lending and financing issues.
 - Assess Flood Insurance Coverage: (As of 7/31/14 – Table from different sources, some discrepancies)

Jurisdiction	Total Site-Built Structures	% of Total Site Built Structures in the SFHA	Mobile Homes in SFHA*	Residential site-built Structures in the SFHA		Commercial Structures in the SFHA		Total Structures in the SFHA (including site-built and mobile homes)		Policies In Force
				A/AE Zone	V/Ve Zone	A/AE Zone	V/Ve Zone	A/AE Zone*	V/VE Zone	
City of Chas	44,810	56	97	20,705	1,406	2,914	282	23,713	1,691	22,770
City of NC	25,365	12	803	2,208	1	895	18	3,906	19	1,666
Folly Beach	2,428	89	0	960	1,132	37	36	997	1,168	1,806
Hollywood	1,982	23	35	426	0	25	0	486	0	287
Isle of Palms	4,698	99	0	3,331	1,022	229	82	3,560	1,104	4,223
James Island	5,011	61	19	2,828	179	69	1	2,916	180	-
Kiawah Island	3,580	99	0	3,410	61	70	7	3,480	68	2,025
Lincolnton	284	65	64	162	0	24	0	250	0	-
McClellanville	388	97	1	301	22	53	1	355	23	229
Meggett	708	84	60	554	2	35	1	649	3	239
Ravenel	881	12	83	90	0	19	0	192	0	31
Rockville	103	74	2	37	37	1	1	40	38	18
Seabrook Island	2,455	92	0	2,131	88	34	3	2,165	91	924
Sullivan's Island	1,036	100	0	479	525	17	13	496	538	886
Summerville	578	30	0	171	0	1	0	172	0	-
Awendaw	631	43	56	221	29	17	3	294	32	55
Mt. Pleasant	30,344	51	11	13,324	1,150	684	217	14,019	1,367	13,454
Unincorporated	25,417	49	1,172	10,727	1,153	597	82	12,447	1,284	20,907
Total Region	150,699	66	2,403	62,065	6,807	5,721	747	70,137	7,606	69,520

Target Areas vs Target Audiences: Beach areas? Repetitive loss? Urban vs Rural?

Suggested Target Audience Categories (Charleston Region):

1. **Residents/Businesses in the SFHA** – Also includes homeowners associations and secondary homeowners (summer/vacation properties in unincorporated areas of the County)
2. **Repetitive loss area residents**
3. **Non-English speaking community** (*Include in Community at large?*)
4. **Sellers and lenders** – Includes insurance agents, real estate agents, and banks
5. **Newcomers to the area**

6. **Builders** – Includes building contractors, design professionals, code enforcement officers, government officials
7. **Community at large** – Includes the general public, faith-based charities/organizations, students (elementary through college), disaster relief organizations (e.g. Red Cross, Salvation Army), land trusts, conservation and environmental organizations, Chamber of Commerce, non-SFHA businesses

Suggested Messages per Topic (Charleston County):

1. Know your flood hazard

- **Know the flood risk in your area.**
- Determine if your property is in the SFHA Zone “A,” “AE,” or “VE.” Contact your local government for a flood zone determination.
- Check for historical flooding records in your area with your local government or media outlets.
- Check for existing elevation certificates with your local government.
- Contact a local land surveyor if you need an elevation certificate.
- Check the depth of the Base Flood Elevation (BFE) above or below the building’s first floor or above existing grade on a vacant parcel.
- Get a FIRMette of your location (www.msc.fema.gov) or look at a flood map at your local government offices to determine proximity to a flood hazard area.
- Check to see if your property is in an area subject to wave action (“V” Zone) or coastal erosion. Contact your local government for assistance.
- Know the proximity of property to evacuation routes.
- Check for localized drainage issues that could result in flooding in your neighborhood.

OUTCOMES – More flood zone checks through local governments, more downloads of Charleston County Hurricane Guide.

2. Insure Property

- **You need flood insurance.**
- Flood insurance is available through the NFIP; contact your insurance agent for details.
- All developed properties within the designated flood hazard area should have flood insurance for buildings and contents. Federally backed mortgages must have flood insurance.
- Most homeowner’s insurance policies do not cover flood damage, so you will likely need a separate policy.
- Renters’ contents are not covered by the building owner’s insurance, and renters should purchase contents-only flood insurance.
- Property owners should inquire about any discounts that may apply in purchasing flood insurance.
- If your flood insurance premium increases significantly, make sure your agent is using the correct information to rate your policy.
- Known when building(s) were constructed
- Do not procrastinate; a 30-day waiting is typically required for flood insurance to take effect.
- Ask questions from insurance agents concerning specific policy information.
- Research building permit records for history of property improvements.

OUTCOMES – More purchases of flood insurance, particular emphasis on preferred risk policies

3. Protect people from the hazard

- **Turn around, don't drown.**
- Be aware of roadways susceptible to flooding during heavy rainfall events; do not drive through flooded areas, flowing or standing water.
- Pay attention to media (TV, radio, internet) for emergency warnings and instructions.
- Select an out-of-town contact for family members in the event local telephone service is disrupted.
- Designate a location/place where family or people you are responsible for can rendezvous once an evacuation order is issued.
- Get an evacuation map for each vehicle and evacuate early if a flood threat is pending.
- Avoid contact with downed power lines.
- Check government websites (www.fema.gov, www.charlestoncounty.org) for flood safety information.
- Avoid contact of flood waters as this water may contain toxic materials or venomous animals or insects.
- Get a weather radio to obtain flood-related weather reports at all times.

OUTCOMES?

4. Protect your property from the hazard

- **Flood-proof your home.**
- **Renters, Insure your belonging from flood losses.**
- Shut off gas service to a building if a flood is imminent.
- Disconnect electricity at the main disconnect if a flood is imminent.
- Replace utility machinery above the required flood elevation.
- Elevate the lowest habitable flood area above the required flood elevation.
- Landscape in a hazard resistant manner.
- Make plans for evacuating pets in the event of a flood, as most shelters do not accept pets.
- Install backflow prevention on plumbing systems susceptible to flooding.
- Sandbag areas subject to flooding.
- Provide hurricane protection against wind-borne debris for windows and doors.
- Move valuables to the highest level of a building or evacuate with these when a flood is imminent.
- Use flood resistant materials in areas below the expected flood elevations to minimize damages.

OUTCOMES?

5. Build Smart

- **Know the risks before you build.**
- **Obtain permits before you build.**
- Hire design professionals who are familiar with local hazards in preparing construction plans.
- Consult with your local building department concerning permit requirements.
- Place buildings in areas with lower flood potential.

- Only hire licensed contractors.
- Ensure that building inspections are properly arranged and completed.
- If you are renovating a building, determine if you are performing a substantial improvement ($\geq 50\%$).
- Check the local flood ordinance for construction requirements.
- Minimize the use of structural fill in constructing buildings.
- Obtain a firm written quote from the contractor detailing exact work to be performed; the exact cost and schedule of start and completion of project.

OUTCOMES?

6. Protect natural floodplain functions

- **Only rain goes down the drain.**
- **Go Native: Plant native plants along water bodies.**
- Protect wildlife habitat areas.
- Protect dunes; they moderate flooding and erosion.
- Preserve wetlands; they clean water, protect us from flooding, and provide wildlife habitat.
- Do not dump anything into the storm drainage system as they discharge into our coastal waters.
- Obtain permission from the SC DHEC before doing any work near a wetland or dune area.
- Minimize clearing near wetlands and/or water bodies.
- Establish buffers and set buildings back from wetlands and/or water bodies.
- Maintain on-site wastewater treatment systems, such as pumping out of septic tanks, every 3 to 5 years.
- Don't dump boat sewage into waterways. Use pump-out station to protect water quality and wildlife habitats.

OUTCOMES?

7. Hurricane preparedness/safety

- Know your evacuation route; obtain published maps.
- Attach plywood or install commercially manufactured hurricane shutters over windows and patio doors.
- Evacuate early and follow established evacuation routes when there is a potential hurricane threat.
- Move valuables and furniture to higher areas of the dwelling.
- Avoid low lying areas. Seek shelter in the highest areas.
- Avoid driving if dangerous flooding conditions are imminent.
- Stay alert to weather advisories and local media broadcast updates.
- Monitor the track of all hurricanes.
- Download a copy of the Charleston County Hurricane Guide at www.charlestoncounty.org.
- Make sure you have an emergency kit on-hand and that it is properly supplied.
- Do not leave anything outside that is not properly anchored. Store items in a garage or shed on an elevated area if possible.

OUTCOMES?

8. General hazard preparedness

- **Have an emergency kit prepared and ready for all hazards.**
- Inventory and photograph your home and business contents and put important papers and insurance policies in a safe place.
- Have an emergency kit on hand. Check government websites (www.fema.gov, American Red Cross, www.charlestoncounty.org) for items to include.
- Listen to emergency broadcasts from local media outlets as to when it is safe to return or contact local government authorities prior to returning to property after the storm has passed.
- Have an emergency generator. Make certain it is properly installed.
- Have contact information available to property reconnect utility services (electrical and gas) and a list of licensed contractors you may need if you have damages.
- Have property inspected to determine the extent of damages.
- Have insurance agent's contact information readily available to file a claim. Know how to file a claim.
- If you smell gas upon your return immediately contact your utility company or emergency personnel. If your property has been flooded or otherwise damaged, do not turn on any electrical switches and/or appliances and do not occupy the dwelling until you are told it is safe to do so.
- Annually inspect homes or businesses for ordinary objects that may pose a hazard during a flood event and have these objects properly secured.
- Post a note telling others when you left and your destination.
- Consider volunteering to help flood victims.
- Develop a disaster plan.

OUTCOMES?

9. Flood education

- **Don't get swept away - where are the greatest flooding risks in your community?**
- Include flooding topics as part of school curricula in science or social studies classes.
- Gather information on preparing for floods at expos and other public events.
- Schedule presentations for your neighborhood associations or organizations to which you belong on hazard event preparations.
- Attend business community planning workshops to learn how to protect your business from hazard events.
- Educate youth on hazard events and environmental issues.
- Listen to the media regarding hurricane season and proper preparation.
- Attend training seminars for personnel concerning regulatory changes, construction methods, construction materials, etc.
- Encourage youth to research on hazard related topics and share what they learn with others.
- Look at social media site (Facebook, YouTube) for information on hazard preparations and environmental protection.
- Search the internet for hazard related information.

OUTCOMES?

10. Water quality

- **Less is more – limit fertilizer use and dispose of chemicals correctly!**
- Keep drainage channels and structures (catch basins) clear of obstructions.
- Don't dump household items (cleaners, insecticides, chemicals, etc.) into drains.
- Reduce or minimize impervious surfaces; install pervious driveway systems.
- Maintain your septic system by pumping-out your septic tank every 3 to 5 years.
- Eliminate direct discharge of wastewater into waterways.
- Maintain a vegetative buffer between your improvements and the waterway.
- Use native plants if restoring or creating a buffer near a waterway.
- Report the dumping of debris or pollutants to local authorities.
- Control erosion by properly installing silt, fence, etc. and plan a ground cover and implement other best management practices (BMPs) approved by governments.
- Pick-up and properly dispose of animal waste.
- Clean up spilled automotive fluids, oil, and antifreeze with absorbent material and dispose of properly.
- Use pump-out stations to remove wastewater from your boat.
- Minimize the use of fertilizers and other chemicals on lawns.

OUTCOMES?

11. Crawl space flooding

- **Air it out! Keep your crawl space clear and dry.**
- Remove standing water with portable sump pump once flood waters have receded.
- Remove wet insulation and dry wall.
- Allow crawl space to dry and then check for mold, mildew, and rot.
- If crawl space is damaged, make needed repairs but first obtain permits.
- Check for damage to electrical components and utility lines (gas and electric) and contact licensed tradesperson to complete the repairs; obtain permits first.
- Maintain flood level of crawl space above adjacent grade to reduce water getting into the crawl space.
- Use flood resistant materials in crawl space areas.
- Do not store valuables in crawl space areas.
- Make sure your crawl space is properly vented or engineered to reduce moisture related damage.
- Move mechanical equipment out of the crawl space if it is not above the required flood elevation.

OUTCOMES?

- **Committee identifies the outreach projects to convey messages:**
 - i. Mailers or email
 - ii. Expos
 - iii. Presentations to specific groups (homeowner associations, building contractors, school programs)
 - iv. Websites/Social media (Facebook, Twitter, YouTube)
 - v. TV broadcasts/Newspaper, radio, phonebook ads/ Newspaper articles
 - vi. Utility bill stuffers/Invoice messages
 - vii. School fair, conferences and/or projects
 - viii. Printed materials (brochures, flyers, booklets, etc.) in public places, expos and presentations

- ix. Billboards/Public signage
- x. Training for general public (i.e. CERT and SKYWARN weather spotters)
- xi. Others as determined by committees

- **Committee examines other public information activities:**

<i>Activity</i>	<i>Type of Organization</i>	<i>Funding Mechanism</i>
<i>Floodplain Management Regulations</i>	<i>Local jurisdictions, SC Dept. of Natural Resources, US ACOE</i>	<i>General Fund</i>
<i>Fire Protection Regulations</i>	<i>Local jurisdictions, State Fire Marshal</i>	<i>General Fund Insurance Reserve Fund</i>
<i>Wetlands Protection Regulations</i>	<i>U.S. Army Corps of Engineers, S. C. DHEC Office of Coastal & Resource Management</i>	<i>General Fund</i>
<i>Other Management Regulations (e.g. Building Code Enforcement Assistance, flood mapping/delineation, Environmental Review, hazards research)</i>	<i>S.C. Dept. of Insurance, S. C. Dept. of Natural Resources, S. C. Sea Grant Consortium, US ACOE</i>	<i>General Fund Grant Funding Donations</i>
<i>Preservation of Open Space</i>	<i>Charleston County Parks & Recreation Commission, Local Jurisdictions, Greenbelt Program</i>	<i>General Fund Bond Funding</i>
<i>Storm water Management Regulations</i>	<i>S. C. DHEC Office of Coastal and Resource Mgmt., Local Jurisdictions, US ACOE</i>	<i>General Fund</i>
<i>Wind Building Regulations</i>	<i>Local Jurisdictions</i>	<i>General Fund</i>
<i>Coastal Erosion Regulations</i>	<i>S. C. DHEC Office of Coastal and Resource Mgmt., Local Jurisdictions, US ACOE</i>	<i>General Fund</i>
<i>Earthquake Building Regulations</i>	<i>Local Jurisdictions</i>	<i>General Fund</i>
<i>Beachfront Management Regulations</i>	<i>SC DHEC Office of Coastal and Resource Mgmt.</i>	<i>General Fund</i>
<i>Water Quality Regulations</i>	<i>SC DHEC, U. S. Army Corps of Engineers, S.C. Dept. of Natural Resources</i>	<i>General Fund</i>
<i>Stream Dumping Regulations</i>	<i>Local Jurisdictions</i>	<i>General Fund</i>



July 8th, 2014; 3:00pm Conference Room B339; 4045 Bridge View Drive, N. Charleston

Members in Attendance: Fred Kemmerlin (City of North Charleston), Tony Cervino (James Island PSD), Jody Muldrow (Awendaw), Mike DiNunzio (City of Charleston), Edward Holton (Town of Hollywood), Randy Pierce (Town of Seabrook Island), Eric A. Lutz (City of Folly Beach), Aaron Pope (City of Folly Beach), Larry Brown (Town of Lincolnville), Mark Bloomer (Town of Ravenel), Rob Rogerson (Town of Mount Pleasant), Mel Bennett (Mount Pleasant Waterworks), Hillary Repik (Town of Mount Pleasant), Mary Duke (Town of McCellanville), Berry Rudisill (Town of James Island), Randy Robinson (Town of Sullivans Island), Douglass Kerr (City of Isle of Palms), Fred Durrett (CCPRC), Susan Kingman (St. Andrews Parks and Playground)

Others in Attendance: Martin Erbele (Charleston County Building Inspection Services), Cindy Cahill (Charleston County Building Inspection Services), William Horne (Charleston County Building Inspection Services), Richard Peel (Graduate Student Intern from the College of Charleston), Sam Tuten (Graduate Student Intern from the College of Charleston),

Opening Comments and Introduction: Martin Erbele called the meeting to order at 3:05 p.m. and thanked everyone for their attendance at the meeting. Martin explained that the public and media had been notified of the meeting and that all members of the public were welcome. Martin then introduced the other representatives from Charleston County. All attendees introduced themselves. Martin then thanked the participants for their assistance throughout the update process as well as the Graduate Student Interns for their help with the Plan. Martin outlined the meeting agenda and gave a brief history of the group, where they had come from, and noted the future of the group as both the Hazard Mitigation Project/Planning Committee as well as a Program for Public Information (PPI) for the communities participating in the Community Rating System.

Explain the Changes to Outreach Credit under the new CRS manual: Martin discussed that municipalities can continue to do what they've done, but there are new opportunities within the new CRS manual. He noted this group is already filled with non-governmental community stakeholders, there just needs to be a unified connection to a single community partner - outreach credit can be multiplied by 40%. This change wouldn't really affect the currently participating non-governmental entities, their input and yearly updates are still critical, but from an organizational perspective, they would be grouped with an appropriate municipality to create a joint outreach effort.

Reviewed survey results: Martin went over the hazard mitigation survey results that were distributed to local governments, state agencies, nonprofits, and other groups, as well as made available to the general public. The government/agency survey was significantly more detailed than the general public survey, but Martin discussed how again, Hurricanes, Flooding, Earthquakes, Fire, and Tornadoes again topped the list of concerns for local governments and the general public. Open discussion asking members what they have heard within their own jurisdiction further confirmed the results. The group is confident that the outreach campaigns that have been done up to this point and will be done in the future are appropriate and are focused on the top concerns of our citizens.

Reviewed updated hazard mitigation plan layout: Martin asked Graduate Intern Sam Tuten to lead a brief discussion over some of the layout changes that went into the 2014-2015 plan. Sam discussed a new, cohesive way that the hazard occurrences were documented, discussed how the sections related to hazard probability and extent were universally applied

to each hazard, and how hundreds of pages of outdated text from years ago were cleaned up with concise tables and graphs. There were several questions related to the formatting and a question on rip currents – all were discussed and clarified.

Program for Public Information: Martin outlined the concept of a program for public information, which will require a restructuring of the current group. While the group already has non-governmental bodies as well as members of local governments, there needs to be a clear link between the governmental bodies and at least one non-governmental group. Some municipalities have active public members at large, members of fire departments, Citizen Emergency Response Teams, local community groups, etc. and were encouraged to partner with those participants. Other municipalities may prefer to link with an existing community organization, e.g., The College of Charleston linking with the City of Charleston.

Attendees were also asked to inventory what is being done for community outreach in each one of their jurisdictions...what flyers are at city hall and the libraries, what community events are put on each year, are there hazard expos or community training events? A short brainstorming session followed, but the group agreed that at the following meeting, they would bring back their findings and discuss as a group what is being done outside of Project IMPACT events and how effective they felt the events/outreach activities were.

Finally, the group was asked to begin thinking about the key target outreach areas to assess public information needs: Begin to suggest target areas (flood prone neighborhoods, tourists area, repetitive loss area, etc...) Brainstorm to determine target audiences (contractors, tourists, new residents, drivers, students, etc...)

There are six standard topics: 1. Know Your Flood Hazard, 2. Buy Flood Insurance, 3. Protect People, 4. Protect Property, 5. Build Responsibly, and 6. Protect Natural Floodplain Functions.

- All messages need to fit within as many of these categories as possible. More topics = more points. An additional advantage of a PPI is the committee can create additional topics too: Hurricane Preparedness, Flood Education, etc...
- Also, for each message, there should be a desired outcome. Message: Build Safer, Outcome: Higher homes

-Other Discussion: Mr. Erbele concluded the meeting outlining the need for future meetings on the PPI, asked anyone who had not turned in their status report or action plan to please do so. He then asked if there was any other business the committee needed to discuss and hearing none, the meeting was adjourned at 4:23pm.

Respectfully Submitted,
Martin Erbele, CFM
Asst. Floodplain Coordinator
Charleston County Building Services



August 7th; 2013 - 3:00pm Conference Room A-214; 4045 Bridge View Drive, N. Charleston

Members in Attendance: Rick Williams (City of North Charleston), Ellie Brabham (Town of Meggett), Tony Cervino (James Island PSD), Jody Muldrow (Awendaw), Mike DiNunzio (City of Charleston), Edward Holton (Town of Hollywood), Randy Pierce (Town of Seabrook Island), Eric A. Lutz (City of Folly Beach), Aaron Pope (City of Folly Beach), Gary N. Alford (NCSD, NCD), Tyrone Aiken (Town of Lincolnville), Mark Bloomer (Town of Ravenel), Rob Rogerson (Town of Mount Pleasant), Mel Bennett (Mount Pleasant Waterworks), Mary Duke (Town of McClellanville), Wayne Carter (St. John's Fire District), Jim Palmer (Town of James Island), Rusty Lameo (Kiawah Island), Bruce Spicher (Town of Kiawah Island), Joe Henderson (Town of Sullivan's Island), Randy Robinson (Town of Sullivan's Island), Bob Maibach (City of Isle of Palms), Randy Beaver (College of Charleston), Ken Fisher (St. Andrews PSD), Robert Cochran (Town of Ravenel), Henry Holst (Town of Rockville)

Others in Attendance: Martin Erbele (Charleston County Building Inspection Services), William Horne (Charleston County Building Inspection Services), Rebecca Varner (Graduate Student Intern from the College of Charleston), Mel Campos (Graduate Student Intern from the College of Charleston), Janet Key (Community Member)

Opening Comments and Introduction: Martin Erbele called the meeting to order at 3:00 p.m. and thanked everyone for their attendance at the meeting. Martin explained that the public and media had been notified of the meeting and that all members of the public were welcome. Martin then introduced the other representatives from Charleston County. All attendees introduced themselves. Martin then thanked the participants for their assistance throughout the update process as well as the Graduate Student Interns for their help with the Plan.

Approval of the minutes of the meeting of July 25, 2012: Martin Erbele asked for a motion to approve the minutes of July 25, 2012 meeting. Ellie Brabham made a motion to approve the minutes. The motion was seconded by Rob Rogerson and carried unanimously with no discussion.

Discussion of The 2008-2012 five year plan: Martin briefly discussed the status of the 5 year plan FEMA approval process and anticipated timeline for plan adoption in coming months. He explained that while Charleston County treats every year as an opportunity to re-examine and update the Regional Hazard Mitigation Plan, FEMA is largely concerned with a five-year timeframe. The 2012 Planning Meeting largely concluded the 2008-2012 cycle and Martin briefed the group that after several revision requests, FEMA has accepted the Plan and the County expects to receive FEMA's formal approval in the next 45-60 days. Following that, each entity's Council or appropriate governing board must adopt the Plan to ensure continued availability of federal disaster reimbursement funding for the next 5 years.

Discussion of the 2013-2014 Hazard Mitigation Plan and Revisions: Martin went over the major changes that were made to the Plan in the last year for the yearly update to the Plan. A handout was provided listing these changes. Changes included the addition of James Island following the town's incorporation, updated weather and hazard occurrences, clarifications on the planning process, and various tables to reflect the most current data.

Martin and the Graduate Student Intern Mel Campos discussed some relevant upcoming changes to the Community Rating System, and a handout was provided detailing this information. Martin discussed a “revitalization” of Project Impact to align with changes in the Community Rating System.

Mark Bloomer made the motion to approve and finalize the Hazard Mitigation Plan and the motion was seconded by Randy Robinson. There was no discussion and the motion carried with unanimous approval.

Other Discussion: Mr. Erbele asked if there was any other business the committee needed to discuss and hearing none, the meeting was adjourned at 3:33pm.

Respectfully Submitted,

Martin Erbele, CFM
Asst. Floodplain Coordinator
Charleston County Building Services

A.6 - Charleston Regional Hazard Mitigation Plan Summary of Changes 2013-2017

Summary of Changes Made to the Charleston Regional Hazard Mitigation Plan for 2017-2018 Update:

Cover Pages

- Updated the artwork and title.
- Added the physical address to the “Contact Us about the Plan” page.

Section 1: Introduction

- Background (1.1): Updated the number of activities in the PIP.
- Community Profile (1.2): Added Figure 1.1, Figure 1.2 to the Climate section.
 - Reworded “The People” section to include more up to date demographics and data of the area including growth, age, employment and race. Added Figures 1.3-1.6.
 - Reworded “The Government” section to include how the County to structured and the elected positions.
- Goals (Section 1.3): Moved Goals section up from 1.5 to follow the rest of the order and renumbered appropriately.
- The Planning Process (1.4): Updated language about the most recent survey.
 - Added wording on the PIP and how it has evolved in the last year.
- Hazard Assessment (1.6): Updated language to coincide with the latest survey findings.
- Problem Assessment (1.7): Updated the building count due to vulnerability.
- Project Impact Org Chart (A 1-A): Updated the organizational chart to reflect the bylaws.

Section 2: Goals

- Updated the number of partners in Project Impact.
- Reordered the goals for the Plan based on the latest survey.

Section 3: Planning Process

- Pre Planning Request for Input (3.1): Updated language about the survey including the biggest hazard threats to the area.
- Public Input (3.3): Included language about the addition of emergency preparedness and resiliency of communities to the surveys.
- Local Jurisdiction Adoption (3.4): Updated when the readoption process would occur.
- Planning Process Summary (3.6): Added the most recent public meetings about the Plan.
- Updated all of the tables and attachments for this section.

Section 4: Hazard Assessment

- Prioritization (4.1): Updated all survey results and wording.

- Added an emergency preparedness subsection to explain the new questions added to the survey this year.
- Included a table of all hazard events occurring in 2016-2017.
- Reordered sections based on the priority results of the survey.
- Hurricane (4.2): Added a wind definition under the Classification section.
 - Updated the Occurrences and the probability for this past year.
- Flooding (4.3): Updated Historical Occurrences and Probability for this past year.
- Sea Level Rise (4.4): Added this entire section based off the survey.
- Hazardous Materials (4.7): Updated historical occurrences for this year.
- Terrorism (4.8): Updated historical occurrences for this year.
- Wildfire (4.9): Updated historical occurrences for this year.
- Rip Currents (4.12): Updated historical occurrences for this year.
- Severe Storm (4.13): Updated historical occurrences for this year.
- Drought (4.14): Updated historical occurrences for this year.
- Updated the following tables: Table 4.1, 4.2, 4.3.

Section 5: Problem Assessment

- Table 5-1: Update to reflect the new hazard of Sea Level Rise and remove Avian Flu.
- Vulnerable Buildings (5.2): Updated wording to reflect the latest survey results.
 - Updated building numbers to reflect most recent SFHA and repetitive loss report
- Infrastructure Vulnerability (5.3): Updated the wording to reflect the latest survey results.
 - Added sea level rise to the analysis with flooding.
- Known Flood Damages (5.4): Updated the repetitive loss data.
 - Updated Table 5-9.
- Critical Facilities (5.7): Updated the number of critical facilities in the County.
 - Updated wording based on most recent survey results.
- Natural and Beneficial Functions of Floodplains (5.8): Added wording on the functions of a floodplain, why they are needed and how they work. Two pictures were also included.
- Development and Population Trends (5.9): Updated population information for the County.
- Resiliency to Hazards (5.11): Added this section in to cover the responses given to the questions asked in the survey from this year.
- Added Table 5-12.
- Updated the following attachments: 5-A, 5-B, 5-C, 5-D, 5-E and 5-F.

Section 6: Possible Activities

- Prioritizing Projects (6.1): Updated language based on the survey.
- Public Information Plan (6.2): Made the document more concise and referred to Appendix 1 where whole PIP is located within this document.
- Preventative Actions (6.3): Reference Appendix 1 and explained what the committee does.
- Public Information Plan Activities (6.8): Added language to reference Appendix 1.

- Updated Table 6-1, 6-2, 6-3, 6-4, 6-5, and 6-6 to include all Preventative activities in the County.
- Updated Attachment 6-C to include all drainage projects.
- Removed Attachment 6-D as it will be included in Appendix 1.

Section 7: Adopting Resolution and Jurisdiction-Specific Action Plans

- Included status reports for 2016-2017 and action plans for 2017-2018 for the following plan signatory jurisdictions:
 - Unincorporated Charleston County
 - Town of Awendaw
 - College of Charleston
 - Charleston Water System
 - Charleston County Parks & Recreation Commission
 - Charleston County School District
 - City of Charleston
 - Cooper River Parks & Playground Commission
 - City of Folly Beach
 - Town of Hollywood
 - City of Isle of Palms
 - Town of James Island
 - James Island Public Service District Commission
 - Town of Kiawah Island
 - Town of Lincolntonville
 - Town of McClellanville
 - Town of Meggett
 - Town of Mt. Pleasant
 - Mt. Pleasant Water Works Commission
 - City of North Charleston
 - North Charleston District
 - North Charleston Sewer District
 - Town of Ravenel
 - Town of Rockville
 - Roper St. Francis
 - St. Andrews Parish Parks and Playground Commission
 - St. Andrews Public Service District
 - St. Johns Fire Service District
 - St. Paul's Fire Service District
 - Town of Seabrook Island
 - Town of Sullivan's Island

Section 8: Appendices

- Added Appendix 1 (Overview of the Public Information Plan) and renumbered the subsequent appendices appropriately.
- Overview of CRS (A.2): Updated the CRS classes for the community and added a summary table (A.2-1).
- Public Meeting Notices 2013-2017 (A.4): Added the announcements for this year's 3 meetings.
- Previous Yearly Meeting Minutes (A.5): Added the meeting minutes for this year's 3 meetings.
- CRHMP Summary of Changes 2013-2017 (A.6): Added the summary of changes for this plan.

Summary of Changes Made to the Charleston Regional Hazard Mitigation Plan for 2016-2017 Update:

Section 1: Introduction

- Retitled Section I to “*Introduction*”
- Added three additional sub-sections 1.1 *Background*; 1.2 *Community Profile* and 1.11 *Implementation of Plan*
- Added Attachment 1A to Section 1- *Project Impact Organizational Chart*

Section 2: Goals

- Restructured table of contents moving “*Goals*” from Section 5 to Section 2 and all subsequent sections moving downward
- Adjusted numerical sequence of tables, attachments and maps respectively

Section 3: Planning Process

- Updated references to the latest public survey, public notices and meeting, and yearly comments from the public
- Edited / updated formatting and numbering of tables and attachments
- Implemented a second Hazard Mitigation questionnaire (Attachment 3-A1) *General Public Questionnaire* to identify areas of public concern and get feedback
- Revised Attachment 3-A2 the governmental questionnaire
- Updated Attachment 3-B, 3-C, and 3-D listing of the HMP and Public Information Plan committee members and Participating Partners
- Added Attachment 3-E, Project Impact Committee members

Section 4: Hazard Assessment

- Added sub-section titled “*Prioritization*” numbered 4-1
- Response data from the governmental questionnaire incorporated into overview of Hazard Assessment.
- Edited/updated formatting and numbering of tables / maps
- Updated occurrences of hurricane events to cover period from May 1, 2013 – April 30, 2016.
- Updated historical occurrences of flood data to cover period from May 1, 2013 – April 30, 2016.
- Updated Coastal Flood/ Flash Flood and Flood events to include data from May 1, 2015 – April 30, 2016.
- Historical occurrences data for Wildfires events capture period from 2013-2015
- Updated Fire incidents to include information from May 1, 2015- April 30, 2016
- Updated Tornado events to include information from May 1, 2013- April 30, 2016 and new event probability
- Updated Earthquake events to include information from May 1, 2013- April 30, 2016 and new event probability
- Updated Hazardous Materials incidents to include data from May 1, 2013- April 30, 2016
- Updated Rip Currents events to include information from May 1, 2013- April 30, 2016
- Updated Severe Storm events to include information from May 1, 2015- April 30, 2016
- Updated Weeks of Drought events to include information from May 1, 2015- April 30, 2016
- Removed two maps providing duplicate information
- Updated Terrorism events to include information from May 1, 2015- April 30, 2016

Section 5: Problem Assessment

- Restructured plan layout “Problem Assessment” now Section 5 (instead of Section 4)
- Edited/updated formatting and numbering of tables and maps
- Updated Tables 5.2 – 5.6 with current data (2013)
- Removed six tables – incorporated data into narrative
- Added Table 5-8 to reflect flood elevations in event of breach of Santee Dam
- Removed Attachment (formerly 4B) with Critical Facilities listing, added directives for requesting this information instead

Section 6: Possible Activities

- Added a sub-section titled “Prioritizing Projects” numbered 6.1 sequentially
- The Program for Public Information (PPI) was renamed the Public Information Plan (PIP)
- Section 6.2 on Public Information Plan (PIP) to include goals and a mission statement
- Edited PIP Section to include 10 topics for 10 messages in the narrative instead of as an attachment.
- Attachment 6-D is now a list of PIP outreach projects
- Formatted all tables and attachments with headings in the Table of Contents for quick reference
- Updated drainage improvement projects in Attachment 6-C

Section 7: Adopting Resolutions and Jurisdiction Action Plan

- Included status reports for 2015-2016 and action plans for 2016-2017 for the following plan signatory jurisdictions:
 - Unincorporated Charleston County
 - Town of Awendaw
 - College of Charleston
 - Charleston Water System
 - Charleston County Parks & Recreation Commission
 - Charleston County School District
 - City of Charleston
 - Cooper River Parks & Playground Commission
 - City of Folly Beach
 - Town of Hollywood
 - City of Isle of Palms
 - Town of James Island
 - James Island Public Service District Commission
 - Town of Kiawah Island
 - Town of Lincolville
 - Town of McClellanville
 - Town of Meggett
 - Town of Mt. Pleasant
 - Mt. Pleasant Water Works Commission
 - City of North Charleston
 - North Charleston District
 - North Charleston Sewer District
 - Town of Ravenel
 - Town of Rockville

- Roper St. Francis
- St. Andrews Parish Parks and Playground Commission
- St. Andrews Public Service District
- St. Johns Fire Service District
- St. Paul's Fire Service District
- Town of Seabrook Island
- Town of Sullivan's Island

Section 8: Appendices

- Removed list of abbreviations used in the HMP Plan
- Removed Overview of CARE Program and Grant
- Updated public meeting notices to Appendix A-3
- Updated HMP meeting minutes to Appendix A-4
- Added current 2016 Summary of Changes to HMP and PIP Update

Summary of Changes Made to the Charleston Regional Hazard Mitigation Plan for 2015-2016 Update

Section 1: Executive Summary

- Added references to Roper St. Francis joining as a plan participant in May 2015
- Updated dates to reflect 2015-2016 information on homes in flood zones
- Added references to the 2015-2016 Action and Status report information

Section 2: Planning Process

- Updated references to the latest public survey, public meeting and yearly comments from the public
- Edited formatting for all tables
- Updated Attachment 2-C to include Roper St. Francis and committee member changes for Town of Kiawah Island and Town of McClellanville
- Updated Attachment 2-D to include Roper St. Francis

Section 3: Hazard Assessment

- Edited/updated formatting of all tables and maps
- Added reference to there being no new Hurricane events from May 1, 2014- April 30, 2015
- Changed Hurricane Floyd category from 4 to 2
- Updated Flood events to include information from May 1, 2014- April 30, 2015 and new event probability
- Updated Wildfire events to include information from May 1, 2014- April 30, 2015

- Updated Tornado events to include information from May 1, 2014- April 30, 2015 and new event probability
- Updated Earthquake events to include information from May 1, 2014- April 30, 2015 and new event probability
- Updated Hazardous Materials events to include information from May 1, 2014- April 30, 2015
- Updated Rip Currents events to include information from May 1, 2014- April 30, 2015
- Updated Severe Storm/Wind events to include information from May 1, 2014- April 30, 2015
- Updated Drought Heat Advisory events to include information from May 1, 2014- April 30, 2015 and new event probability
- Removed two maps showing a period of drought in 2014
- Added two U.S. Drought Monitor maps showing drought conditions in 2015. One map of the entire U.S. and one map of just South Carolina.
- Added reference to there being no new Winter Weather events from May 1, 2014- April 30, 2015
- Updated Terrorism events to include information from May 1, 2014- April 30, 2015
- Added reference to there being no Tsunami events through April 30, 2015

Section 4: Problem Assessment

- Edited/updated formatting of all tables and maps
- Updated references to questionnaire to include the 2014-2015 questionnaire
- Added Table 4-10
- Added Table 4-11
- Added Map 4-12
- Added Table 4-13
- Table 4-10 was changed to Table 4-14
- Table 4-11 was changed to Table 4-15
- Table 4-12 was changed to Table 4-16
- Updated the tables in section 4.10 to include current (2015) information on largest employers in the area from the Center of Business Research
- Updated Attachments 4-C, 4-D, 4-E, and 4-F to include information from 2014-2015

Section 6: Possible Activities

- Updated references to the questionnaire to include the 2014-2015 questionnaire
- Added titles to all tables and edited/updated formatting of all tables and attachments
- Updated drainage improvement projects in Attachment 6-C

- Reformatted Attachment 6-D to include bullet points

Section 7: Adopting Resolutions and Jurisdiction Action Plan

- Included status reports for 2015-2016 and action plans for 2016-2017 for the following plan signatory jurisdictions:
 - Unincorporated Charleston County
 - Town of Awendaw
 - College of Charleston
 - Charleston Water System
 - Charleston County Parks & Recreation Commission
 - Charleston County School District
 - City of Charleston
 - Cooper River Parks & Playground Commission
 - City of Folly Beach
 - Town of Hollywood
 - City of Isle of Palms
 - Town of James Island
 - James Island Public Service District Commission
 - Town of Kiawah Island
 - Town of Lincolnton
 - Town of McClellanville
 - Town of Meggett
 - Town of Mt. Pleasant
 - Mt. Pleasant Water Works Commission
 - City of North Charleston
 - North Charleston District
 - North Charleston Sewer District
 - Town of Ravenel
 - Town of Rockville
 - St. Andrews Parish Parks and Playground Commission
 - St. Andrews Public Service District
 - St. Johns Fire Service District
 - St. Paul's Fire Service District
 - Town of Seabrook Island
 - Town of Sullivan's Island

Appendices

Added 2015-2016 meeting notices and meeting minutes to Sections A.3 and A.4

Summary of Changes Made to the Charleston Regional Hazard Mitigation Plan for 2014-2015 Update:

Preface:

- The Preface was moved from the beginning of the Plan to the Appendices located at the end of the Plan.

Section 1: Executive Summary

- Section was changed from Roman numeral I to the number 1.
- Each sub section was numbered 1-9.
- Edits were changed to represent all changes in Sections, Tables, Attachments, & Appendices.

Section 2: Planning Process

- Section was changed from Roman numeral II to the number 2.
- Sub sections A-G were changed to numbers 1-7.
- Table II-1 was edited to a new format.
- Table II-1 was changed to Table 2-1.
- Attachments II-A, II-B, II-C, II-D were edited in a new format
- Attachments were changed to be labeled 2-A, 2-B, 2-C, & 2-D.
- Edits were changed to represent all changes in Sections, Tables, Attachments, & Appendices.

Section 3: Hazard Assessment

Everything was removed. New formats for tables were created. Subsections Background, Classification, Location, Historical Occurrences, & Probability were all added.

Table III-3 became Section 3.15

Table III-4 became Section 3.16

- Updated Hurricane events to include information from May 1 201- April 30th 2013
- Updated Flood events to include information from May 1 2012- April 30th 2013
- Updated Wildfire events to include information from May 1 2012- April 30th 2013
- Updated Tornado events to include information from May 1 2012- April 30th 2013
- Updated Earthquake events to include information from May 1 2012- April 30th 2013
- Updated Hazardous Materials events to include information from May 1 2012- April 30th 2013
- Updated Rip Currents events to include information from May 1 2012- April 30th 2013
- Updated Severe Storm/Wind events to include information from May 1 2012- April 30th 2013
- Updated Drought Heat Advisory events to include information from May 1 2012- April 30th 2013
- Updated Terrorism events to include information from May 1 2012- April 30th 2013

Section 4: Problem Assessment

- Section was changed from Roman numeral IV to the number 4.
- Sub sections A- I were changed to numbers 1-10.
- Tables IV-1 through IV-10 in sub section A changed to Table 2-1 through 2-9.
- Table IV-10 was moved to Hazard Assessment section 3.17.

- Table IV-3 in sub section B was changed to 2-10.
- Table IV-4 & IV-5 in sub section H was changed to 2-11, & 2-12.
- All Tables were edited to a new format.
- Attachments IV-A & B were removed.
- Attachments IV-C through IV-H was changed to 4-A through 4-F.
- Edits were changed to represent all changes in Sections, Tables, Attachments, & Appendices.
- Hazard information on Pages 282 – 286 was removed.

Section 5: Goals

- Section was changed from Roman numeral V to the number 5.
- Attachment V-A was removed.
- Edits were changed to represent all changes in Sections, Tables, Attachments, & Appendices.

Section 6: Possible Activities

- Section was changed from Roman numeral VI to the number 6.
- Attachments VI-A through VI-D was changed to 6-A through 6-D.
- Updated Drainage Projects and Studies (Attachment 6-C)
- Edits were changed to represent all changes in Sections, Tables, Attachments, & Appendices.

Section 7: Adopting Resolutions and Jurisdiction Action Plan

2013 Adopting Resolutions were added.

Included status reports for 2013-2014 and action plans for 2014-2015 for the following plan signatory governments:

- Unincorporated Charleston County
- Town of Awendaw
- College of Charleston
- Charleston Water System
- Charleston County Parks & Recreation Commission
- Charleston County School District
- City of Charleston
- Cooper River Parks & Playground Commission
- City of Folly Beach
- Town of Hollywood
- City of Isle of Palms
- Town of James Island
- James Island Public Service District Commission
- Town of Kiawah Island
- Town of Lincolnville
- Town of McClellanville
- Town of Meggett
- Town of Mt. Pleasant
- Mt. Pleasant Water Works Commission
- City of North Charleston

- North Charleston District
 - North Charleston Sewer District
 - Town of Ravenel
 - Town of Rockville
 - St. Andrews Parish Parks and Playground Commission
 - St. Andrews Public Service District
 - St. Johns Fire Service District
 - St. Paul's Fire Service District
 - Town of Seabrook Island
 - Town of Sullivan's Island
-

Summary of Changes Made to the Charleston Regional Hazard Mitigation Plan for 2013-2014 Update:

I. Executive Summary

- Noted and explained the addition of the Town of James Island following the town's incorporation (pages 4, 12)

II. Planning Process and Description

- Added Section II-G: Planning Process Summary in response to FEMA recommendations following the five year review of the 2007/08 – 2012/13 Hazard Mitigation Plan (page 25-27)

III. Hazard Assessment

- Updated Hurricane events to include information from May 1 2012- April 30th 2013 (*pages 143-151*)
- Updated Flood events to include information from May 1 2012- April 30th 2013 (*pages 152-158*)
- Updated Wildfire events to include information from May 1 2012- April 30th 2013 (*pages 158-169*)
- Updated Tornado events to include information from May 1 2012- April 30th 2013 (*pages 169-174*)
- Updated Earthquake events to include information from May 1 2012- April 30th 2013 (*pages 175-181*)
- Updated Hazardous Materials events to include information from May 1 2012- April 30th 2013 (*pages 181-211*)
- Updated Rip Currents events to include information from May 1 2012- April 30th 2013 (*pages 212-215*)
- Updated Severe Storm/Wind events to include information from May 1 2012- April 30th 2013 (*pages 215-234*)

- Updated Drought Heat Advisory events to include information from May 1 2012- April 30th 2013 (*pages 234-245*)
- Updated Terrorism events to include information from May 1 2012- April 30th 2013 (*pages 255-262*)

IV. Problem Assessment

- Updated Special Flood Hazard Area tables (attachments E,F,G, & H) and hazard vulnerability based on this year's data (*pages 386-389*)

VI. Possible Activities

- Updated Drainage Projects and Studies (*pages 420-437*)

VII. Adopting Resolutions and Jurisdiction

Included status reports for 2012-2013 and action plans for 2013-2014 for the following plan signatory governments:

- Unincorporated Charleston County (*pp. 460*)
- Town of Awendaw (*pp. 494*)
- College of Charleston (*pp. 519*)
- Charleston Water System (*pp. 529*)
- Charleston County Parks & Recreation Commission (*pp. 553*)
- Charleston County School District (*pp.559*)
- City of Charleston (*pp. 564*)
- Cooper River Parks & Playground Commission (*pp. 576*)
- City of Folly Beach (*pp. 582*)
- Town of Hollywood (*pp. 595*)
- City of Isle of Palms (*pp. 615*)
- Town of James Island (*pp. 625*)
- James Island Public Service District Commission (*pp. 638*)
- Town of Kiawah Island (*pp. 659*)
- Town of Lincolnville (*pp.674*)
- Town of McClellanville (*pp. 695*)
- Town of Meggett (*pp. 712*)
- Town of Mt. Pleasant (*pp. 740*)
- Mt. Pleasant Water Works Commission (*pp. 765*)
- City of North Charleston (*pp. 769*)
- North Charleston District (*pp. 804*)
- North Charleston Sewer District (*pp. 814*)
- Town of Ravenel (*pp. 827*)
- Town of Rockville (*pp. 852*)
- St. Andrews Parish Parks and Playground Commission (*pp. 880*)
- St. Andrews Public Service District (*pp. 885*)
- St. Johns Fire Service District (*pp. 891*)
- St. Paul's Fire Service District (*pp. 901*)
- Town of Seabrook Island (*pp. 907*)
- Town of Sullivan's Island (*pp. 933*)

Summary of Changes Made to the Charleston Regional Hazard Mitigation Plan for 2012-2013 Update:

I. Executive Summary

- Explained the removal of the Town of James Island from this year's plan (*pp. 12*).
- Added Hazard Identification and Risk Assessment (HIRA) section, indicating that the *Charleston Regional Hazard Mitigation Plan* also serves as the HIRA Report (*pp. 13*).

II. Planning Process Description

- Updated the list of members of the Charleston Regional Hazard Mitigation Project Committee. (*pp. 35-36*)

III. Hazard Assessment

- Updated Hurricane/Tropical Storm section to include information on local effects from hurricanes and Tropical Storms (*pp. 64, 173*).
- Updated Flood section with new local flooding incidents (*pp. 182-183*).
- Updated information on wildfires that occurred during this update cycle, including occurrences, fire totals, and the large 2,600-acre fire that affected parts of Charleston County in March of 2011 (*pp. 69, 73-75, 188-189, 191-192*).
- Updated Tornado section with a discussion of tornadoes that occurred during this update cycle (*p. 79, 198*).
- Updated Earthquake section for this cycle in the Charleston region (*pp. 204-205*).
- Updated Hazardous Materials section regarding hazardous spills that occurred during this update cycle (*pp. 230-232*).
- Updated Rip Currents section to reflect rip current reports during this update cycle (*pp. 235*).
- Updated Severe Storms/Wind Storms/Hail/Other Hazard Events to include incidents that occurred during this update cycle (*pp. 97, 245-246, 251*).
- Updated Drought/Heat Advisory/ Global Warming (Climate Change) section to include information on International/State/Local activities regarding drought and water resources during the year. In addition, the Plan includes information on a number of record breaking temperatures on a state and local level (*pp. 113-115, 255-260*).
- Updated Terrorism section with discussion on new initiatives and incidents on a state and local level during this update cycle (*pp. 276-277*).
- Added table III-4, Historical Extent of Hazards to clearly outline the range of hazards that have impacted Charleston County (*pp. 281-283*).

IV. Problem Assessment

- Updated Problem Assessment Section A. to include the updated 2008 State of South Carolina Hazard Assessment Report from the Office of the Adjutant General. This updated report takes into account the likelihood of a natural disaster event, the established frequency of these events, but also includes the social vulnerability. A fifteenth category 'Transportation' was added after the State Emergency Management Department uniquely identified and quantified the category (*pp. 294-303*).
- Added table outlining frequency previous incidences of hazard events as well as outlining the probability of future events. (*pp. 304-307*)

- Updated HAZUS Earthquake Simulation to reflect changes in population, the built environment, growth, and refinements in the software program (pp. 317-318).
- Updated Attachment E, F, G, H, and I Charleston Region Buildings Vulnerable to Flooding Due To Location in the Special Flood Hazard Area (SFHA) as well as valuations of manufactured homes and other building in flood zones (pp. 407-409).

VI. Possible Activities

- Addition of the Program for Public Information (PPI) (pp. 419-420)
- Updated Attachment VI-C, Drainage Improvement Projects and drainage studies to reflect updates to projects (pp.441-453).
- Updated list of completed drainage projects as of March 31, 2012 (pp. 466-467).
- Addition of Attachments for Program for Public Information (PPI) reflecting the program goals and objectives, the target audiences, and the methods for outreach (pp. 468-480).

VII. Adopting Resolution and Jurisdiction-Specific Action Plans

Appendix H

Added list of attendees at the July 20, 2011 meeting of the planning committee (pp. 991)

Appendix K

Added changes made to the Plan during the 2011-2012 update cycle (pp. 1017-1020)

Added changes made to the Plan during the 2012-2013 update cycle (pp. 1021-1021)

Added notice of public meeting and agenda for 2012-2013 update meeting (pp. 1024-1026)

Included status reports for 2011-2012 and action plans for 2012-2013 for the following plan signatory governments:

Unincorporated Charleston County (pp. 497)

Town of Awendaw (pp. 526)

College of Charleston (pp. 550)

Charleston Water System (pp. 557)

Charleston County Parks & Recreation Commission (pp. 576)

Charleston County School District (pp.582)

City of Charleston (pp. 588)

Cooper River Parks & Playground Commission (pp. 604)

City of Folly Beach (pp. 624)

Town of Hollywood (pp. 640)

City of Isle of Palms (pp. 660)

James Island Public Service District Commission (pp. 674)

Town of Kiawah Island (pp. 693)

Town of Lincolnville (pp.705)

Town of McClellanville (pp. 723)

Town of Meggett (pp. 740)

Town of Mt. Pleasant (pp. 764)

Mt. Pleasant Water Works Commission (pp. 793)

City of North Charleston (pp. 800)

North Charleston District (*pp. 829*)
North Charleston Sewer District (*pp. 837*)
Town of Ravenel (*pp. 847*)
Town of Rockville (*pp. 872*)
St. Andrews Parish Parks and Playground Commission (*pp. 894*)
St. Andrews Public Service District (*pp. 897*)
St. Johns Fire Service District (*pp. 904*)
St. Paul's Fire Service District (*pp. 911*)
Town of Seabrook Island (*pp. 917*)
Town of Sullivan's Island (*pp. 940*)