HORRY COUNTY MULTIJURISDICTIONAL ALL-HAZARDS MITIGATION PLAN

WORK DRAFT

EMERGENCY MANAGEMENT DEPARTMENT
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HORRY COUNTY HAZARDS MITIGATION PLAN

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1 PREREQUISITES

1.1 ADOPTION BY THE LOCAL GOVERNING BODY

On behalf of the Horry County Mitigation Task Force, the Horry County Public Safety Committee, and the Horry County Emergency Management Department, the Horry County Council passed a resolution to adopt this plan on _____as the official Mitigation Plan of Horry County.

A copy of the Resolution adopting the plan is located at the end of this plan.

1.2 MULTI-JURISDICTIONAL PLAN ADOPTION

Below is a chart of specific jurisdictions and special purpose districts represented in this plan. From this point forward the special purpose districts will be included when referring to the jurisdictions. The chart also summarizes the jurisdictions that have formally adopted this plan along with the updates as the official All Hazards Mitigation plan.

Resolutions of Adoption		
Jurisdiction	**Adopted**	**Date of Adoption**
Horry County	**Yes**	
Bucksport Water System	**Yes**	
City of Conway	**Yes**	
City of Loris	**Yes**	
Grand Strand Water & Sewer	**Yes**	
Horry County School District	**Yes**	
Horry Electric Cooperative	**Yes**	
Horry Telephone Cooperative	**Yes**	
Murrells Inlet – Garden City Fire District	**Yes**	
Town of Aynor	**Yes**	
Town of Atlantic Beach	**Yes**	
Town of Briarcliffe Acres	**Yes**	
Town of Surfside Beach	**Yes**	

Copies of the official resolutions signed by each jurisdiction adopting the plan are located at the end of this plan document titled Resolutions.

1.3 MULTI-JURISDICTIONAL PLANNING PARTICIPATION

Each jurisdiction mentioned above was involved in the planning process and formation of the plan. The City of Myrtle Beach and the City of North Myrtle Beach, also jurisdictions in Horry County, were involved in the planning process even though they have approved Hazard Mitigation Plans for their respective jurisdictions. Every jurisdiction in Horry County participated in the Horry County Mitigation Task Force.

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The following chart documents the attendance record for each jurisdiction throughout the planning process.

JURISDICTION	MEETINGS		
	June 18, 2020	July 9, 2020	August 20, 2020
Town of Aynor	?		
Town of Atlantic Beach	?	X	
Town of Briarcliffe Acres			
City of Conway	X	X	
City of Loris	X	X	
City of Myrtle Beach	X	X	
City of North Myrtle Beach	X	X	
Town of Surfside Beach			
Bucksport Water System			
Grand Strand Water & Sewer		X	
Horry Electric Cooperative	X	X	
Horry Telephone Cooperative		X	
Murrells Inlet/Garden City Fire District	X	X	
Horry County Code Enforcement	X	X	
Horry County Community Development	X	X	
Horry County Emergency Management	X	X	
Horry County Fire/Rescue	X	X	
Horry County Human Resources & Risk Management	X	X	
Horry County Maintenance	X	X	
Horry County Planning & Zoning	X	X	
Horry County Public Information	X	X	
Horry County Storm Water Management	X	X	
Santee Cooper	X	X	

This chart depicts the jurisdiction's participation in the National Flood Insurance Program.

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These communities maintain and will continue to maintain compliance with the NFIP requirements to ensure good standing within the program. The Horry County Code Enforcement office ensures compliance is maintained through the NFIP. The Floodplain Manager is also housed in the Code Enforcement division and ensures compliance through the local flood ordinance and the IBC (International Building Code).

Jurisdiction	NFIP Participation
Town of Aynor	YES
Town of Atlantic Beach	YES
Town of Briarcliffe Acres	YES
City of Conway	YES
City of Loris	YES
Town of Surfside Beach	YES
Horry County	YES

Each jurisdiction participated in the development of the Horry County All Hazard Mitigation Plan. "Participation" is defined as any combination of at least two of the following activities:

Personal Meetings, as needed [P]
Telephone conversations [T]
Completing assigned projects for incorporation in the Plan [C]

The thirteen (13) jurisdictions' level of participation in the development of the Plan is summarized in the Table below:

	ACTIVITY		
Jurisdiction	P	T	C
Town of Aynor		X	X
Town of Atlantic Beach	X	X	X
Town of Briarcliffe Acres		X	X
City of Conway		X	X
City of Loris		X	X
Town of Surfside Beach			X
Murrells Inlet – Garden City Fire District			X
Grand Strand Water & Sewer		X	X
Bucksport Water System	X	X	X
Horry County School District	X	X	X
Horry Electric Cooperative		X	X
Horry Telephone Cooperative		X	X
Horry County	X	X	X

Participation from each jurisdiction occurred mainly through the Horry County Mitigation Planning Task Force led by the Horry County Emergency Management Department. The Task Force was made up of representatives from participating jurisdictions and county representatives. The Mitigation Task Force had oversight of each phase of the planning process, reviewed the risk assessment findings and mitigation strategy. The jurisdictions reviewed all information as researched by the Emergency Management staff for their communities prior to inclusion in the plan as well as providing a large portion of the informational update themselves. The Mitigation Planning Task Force was led by the Horry County Mitigation & Recovery Program Manager. The Emergency Management staff was responsible for establishing plan maintenance procedures and approves plan content.

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2. THE PLANNING PROCESS

2.1 PRE-PLANNING HAZARD MITIGATION QUESTIONNAIRE

At the beginning of the original planning process a questionnaire, included as [TAB 4] to this section, was distributed by email to representatives from county, state, and federal agencies, local governments, non-profit organizations and academia for their input. The recipients of the questionnaire via email were considered to be knowledgeable regarding hazards experienced in Horry County and the potential vulnerabilities of these hazards. Completion of the questionnaire was considered to be one form of participation in the planning process. This questionnaire asked the respondents to assess the hazards inherent to Horry County, assess the vulnerability of critical facilities and provide any existing hazard related mitigation plans to the mitigation task force. Those responses were reviewed by the Mitigation Planning Task Force.

MITIGATION PLANNING TASK FORCE 2020		
NAME	REPRESENTING	POSITION/TITLE
Allison Hardin	City of Myrtle Beach	Planner
Anna Strickland	Santee Cooper	Santee Cooper
Ashley Carroll	Horry County Emergency Management	Deputy Director
Ashley Webb	Horry County GIS	Development Project Manager
Barbara Taylor	Murrells Inlet-Garden City Fire	MIGC Fire
Benjamin Quattlebaum	Town of Atlantic Beach	Town Manager
Billy Floyd	North Myrtle Beach Fire	Division Chief of Fire Training
Brandon Harrelson	City of Loris	Chief Inspector
Carissa Medeiros	Coastal Carolina University	Director of Emergency Management
Chris Teems	Horry Electric Cooperative	Manager of Special Services
Christine Ellis	Winyah River Foundation	Executive Director
Christy Everett	Grand Strand Water & Sewer	Chief Operating Officer
David Beaty	Horry County Schools	Coordinator of School Safety & Security
Debra Mumford	Horry County Human Resources	Risk Management
Dennis Drozdak	City of Loris	Interim City Administrator
Drake Carroll	South Carolina Forestry Commission	WUI Coordinator
Elizabeth Tranter	Horry County Community Development	Deputy Director
Emily Hardee	City of Myrtle Beach	Permit Services Supervisor
Eric Hasara	Horry County Stormwater	Horry County Stormwater
Fred Kisner	Little River Water & Sewer	Executive Manager
Garry Spain	North Myrtle Beach	Fire Chief
Huston Huffman	Briarcliff Acres	Resident/Emergency Manager
J.R. Haney	Murrells Inlet-Garden City	Fire Chief
Janae Davis	American Rivers	Winyah Bay Coordinator
Jeff Kosto	Murrells Inlet-Garden City	MIGC Fire
Jeremy T Carter	City of Conway	Assistant Fire Chief
John Barnhill	Horry County Maintenance	Department Head

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Joseph Tanner	Horry County Fire/Rescue	Chief & Department Head
Justin Schools	Horry County IT/GIS	Applications Manager
Katie Moore	Horry County Planning and Zoning	Planning
Keith Collins	Bucksport Water System	Director
Kevin Otte	Town of Surfside Beach	Fire Chief
Lauren Harrelson	Horry County Code Enforcement	Flood Hazard Reduction Control Officer
Leigh Kane	Horry County Planning and Zoning	Principal Planner
Linda Johnson	McLeod Health	Assoc. VP of Quality & Safety
Marion Moore	Horry Telephone Cooperative	Safety and Security Coordinator
Matt Tumbleson	Grand Strand Health	Director of Emergency Preparedness
Michael Norket	Horry County Fire/Rescue	Deputy Fire Chief
Mike Puckett	McLeod Health	Corporate Director of Emergency Mgmt
Myron Cox	Horry County Code Enforcement	Deputy Director
Neeraj Patel	Grand Strand Water & Sewer	GSW&SA
Nicholas Baxter	Horry County Code Enforcement	Code Enforcement
Nicole Clemons	Grand Strand Water & Sewer	Engineering/Operations Supp. Supervisor
Patrick Devlin	Tidelands	Director of Safety, Security & Em Preparedness
Patrick Owens	Horry County Human Resources	Director
Paul Partin	Horry Electric Cooperative	Special Services Investigator
Phillip L. Hendrick, Jr.	City of Conway	Fire Chief
Randy Webster	Horry County Emergency Management	Director/Assistant Administrator
Roberto Antonucci	Horry County Schools	Horry County Schools
Sam Hodge	Conway Medical Center	Director of Emergency Management
Terri Fox	Grand Strand Water & Sewer	Safety Manager
Thomas Bell	Horry County Public Information	Public Information Officer
Tom Roth	Horry County Stormwater	Department Head
Tom Zimpleman	Murrells Inlet-Garden City Fire Dept	MIGC Fire
Tommy Smith	Horry County Code Enforcement	Chief Inspector
Tony Godsey Jr	Town of Aynor	Town Manager
Trapper Myers	Grand Strand Water & Sewer	Field Operations
Wanda Squires	Horry County Emergency Management	Mitigation and Recovery Program Mgr

The original findings from the responses were reviewed at the time of the plan update in 2015 and again in 2020 and considered to be relevant and up to date with the consensus of the Mitigation Planning Task Force. Originally, responses were received from twenty-nine (29) of the recipients of the e-mail questionnaire. The highest response rate was from the local jurisdictions and county departments, followed by private sectors, non-profit organizations, and academia and ending with South Carolina agencies and Federal agencies. All the responses received were considered in the data analysis of the plan and during deliberations of the Mitigation Planning Task Force meetings.

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In the update to the plan, terrorism was considered as an all-encompassing term referring to all types of terrorism; such as but not limited to: chemical, biological, radiological, nuclear, explosive, cyber, etc.

Among the rankings terrorisms was ranked low as a serious threat to Horry County and participating jurisdictions. HazMat was also considered in the questionnaire, however, the risk associated with HazMat ranked higher among participants than terrorism.

2.2 THE HORRY COUNTY MITIGATION TASK FORCE

The Horry County Mitigation Planning Task Force was established by the Horry County Emergency Management Department to enhance the planning process and updates to the plan. The Planning Task Force was led by Horry County Emergency Management. The Task Force included representatives from each participating jurisdiction, interested special purpose districts, and county government department representatives. The Planning Task Force for 2020 consisted of fifty eight members displayed on the previous page. Prior to the first Mitigation Planning Task Force Meeting, a work plan was formulated.

The updating process began with the Risk Assessment. Horry County Emergency Management provided the Mitigation Planning Task Force with updated historical and technical information to assist them in the updating process. The additional information led the task force to add man-made hazards to the risk assessment. The task force also profiled additional events and updated the vulnerability assessment. All previous hazards were also reviewed and updated along with the all the critical facilities comprehensive list and information.

In addition each jurisdiction was presented a multi-jurisdictional risk assessment and a map of their area with the existing flood zones, storm surge, and wildfire hazard areas as previously defined by the group. The jurisdictions reviewed the risk assessment and the maps for any updates to the prior information and made corrections or additions as they deemed appropriate. There were some jurisdictions with map updates and additions. Other jurisdictions & special purpose districts evaluated and verified the information displayed on their maps and determined no changes needed.

Horry County Emergency Management staff reviewed and updated the vulnerability assessment by researching past Emergency Management records, analyzing the data collected with the Hazard Mitigation Survey, and collecting data from the Horry County Comprehensive Plan. The charts were discussed and made available for review to the Mitigation Planning Task Force.

The Mitigation Strategy was reviewed and updated by the Mitigation Planning Task Force on the findings of the hazard profiles and vulnerability assessment of this plan. The Hazard Mitigation Goals were also reviewed and agreed upon. Each jurisdiction presented new, revised or renewed actions they would like to implement based on their risk assessment findings and public input. The actions were then ranked by the Mitigation Task Force based on the cost-benefit review put forth by the Mitigation Task Force. A mitigation technique category was also assigned to the appropriate action.

The Mitigation Planning Task Force developed a method to ensure that regular review and update of the Hazard Mitigation Plan occurs. Unanimously, the Mitigation Planning Task Force agreed to meet quarterly to monitor and evaluate the plan. The quarterly meeting will coincide with the Horry County Local Emergency Planning Committee (LEPC) meetings, which are publicized and open to the public. Meetings to update the plan will be held annually, post disaster or as Task force members see necessary.

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The yearly update meetings will be held separately from the LEPC.

Each of the Mitigation Planning Task Force meetings were held virtually via WebEx due to limited congregate meetings in the COVID 19 environment. Meeting documentation notes, minutes, maps, attendance records, and information reviewed has been documented for all meetings and has been filed at the Horry County Emergency Management Office.

While working on the updating process for the plan, the Horry County Emergency Management office devised with the Threat and Hazard Identification and Risk Assessments (THIRA) in 2012 and they were then incorporated into the plan under each respective threat. These elements were also re-reviewed in July 2014 and July 2020 for continued validity and relate-ability to the jurisdiction participating in the plan. Of course a good majority of elements of the prior plan were considered in the rewrite and left a part of the plan as they are considered relevant and a true reflection of the various elements that make up the community. The elements that were addressed were which man-made hazards to incorporate into the plan. Everyone agreed to the following list of hazards: HazMat, Terrorism (CBRNE), and Cyber terrorism. Also addressed were critical facilities and the way in which to identify them throughout Horry County and participating jurisdictions. Critical facilities will be addressed through the plan in levels, which will be explained in those sections to which they pertain.

2.3 OPEN PUBLIC INVOLVEMENT

As always the opportunity for public involvement took precedence in the plan updating process. The Local Emergency Planning Committee meetings were open to the public, additional public meetings were conducted and copies of the plan were distributed to the local libraries in the area to make available to the public. During the revision of the plan for the 2015 re-write several different public entities participated in the plan update. During this update the Mitigation Planning Task force had a few new participants such as local health care providers and several of the local natural preservation non-profits. These groups attended several of the Mitigation Task Force re-write meetings and discussions.

The LEPC is an existing committee that forms partnerships with local industries and governments as a resource for enhancing all-hazard preparedness. All meetings are provided to the local media and advertised in the local newspaper and the county website. The LEPC was utilized to provide an update on the critical facilities throughout the county; approval of the Horry County Flood Oridance, which will be incorporated in this plan; approval of the identified hazards and drafts. The public comments were incorporated mostly in the action section of the plan during development and priority ranking. The LEPC helped to relay the public input it received to the Mitigation Planning Task force for incorporation into the actions and Profiling Hazards sections of the plan.

For the 2015 update a public hearing was held Wednesday February 25, 2015 at the ML Brown Public Safety Building at 9:00 am to give the public a chance to review the plan and recommend changes they may feel are appropriate prior to plan approval. Meeting notices were given to the local media, advertised in the local paper and the county website. Drafts of the plan were provided and input was encouraged. Because of limitations to public gatherings due to COVID 19, more virtual means of public input had to be established for the 2020 review. Access to a draft of the Plan was placed on the County website from August 6, 2020 – August 21, 2020. All jurisdictions were invited to share this link through various social media platforms and Horry County Government/Horry County Emergency Management posted the link

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on Facebook and Twitter. The public input opportunity was also shared in the County weekly updates which is shared with local media and the public.

Further public involvement and input was incorporated into this plan and 2020 update from the Horry County Resiliency Project. The goal of the Horry County Flood Resilience Plan is to identify long-term strategies that will reduce flood risks and vulnerabilities along the Waccamaw and Pee Dee Rivers and the Intracoastal Waterway in unincorporated Horry County. The County acquired the services of a consulting firm to develop a plan that identifies mitigation and flood control options that address repetitive flood loss areas both within and outside of the regulatory flood zone. The first week of intensive public engagement for the Resiliency Project was conducted in the third full week of October 2019. Horry County Public Information Officer led the public outreach initiative to increase local awareness of the project and to encourage participation in community meetings. Several interviews on the topic were covered by local media including a full press release on October 2, 2019 announcing the upcoming meetings. Additionally, staff went door to door with flyers in flood-impacted areas of Socastee, Bucksport, Longs/Aberdeen and Red Bluff to announce the meetings. The Community Development Director provided an overview of the project to Horry County Council on October 15th, 2019, as well as a preview of the public engagement sessions to occur the following week. Public engagement workshops were held on October 22, 2019 at Socastee High School, October 23, 2019 at North Strand Recreation Center, and October 24, 2019 at James R. Frazier Community Center to provide an overview of the project, to review preliminary data, and to solicit information and feedback from members of each community. Each of these meetings was held from 6 to 8 pm. Attendees numbered 88 in Socastee, 93 in Longs and 84 in Bucksport. Each meeting involved small group discussions with flood maps and facilitators.

In addition to evening meetings with targeted communities, stakeholder meetings were held during the mornings and afternoons with representatives from Infrastructure and Public Safety organizations (October 22nd), Volunteer Organizations Assisting in Disasters (VOADs, October 22nd), Boards and Commission members (October 23rd), Conservation Practitioners and Ambassadors (October 23rd), and the development community (October 24th). Sixty one (61) individuals attended these meetings and provided preliminary feedback related to the goals and objectives of the project, as well as preliminary analysis provided by Sherwood and its partners.

Representatives from Horry County Council, County Administration, Engineering, Code Enforcement, Planning & Zoning, Finance, Pubic Information, Emergency Management, and Community Development attended the community meetings, and representatives from County Departments attended stakeholder meetings to engage with the public and the Sherwood Team regarding community input. A total of 326 individuals participated in public meetings, and 114 participants completed detailed surveys regarding the damage they experienced during Hurricanes Joaquin, Matthew, Florence, and Dorian. This data was analyzed by the Sherwood Team and input integrated into the planning process for the project.

2.4 REVIEW AND INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS, TECHNICAL INFORMATION.

In order to update the plan the Mitigation Planning Task Force and Horry County Emergency Management Division reviewed pertinent mitigation material, including current mitigation studies and reports. Emergency Management Staff also researched and reviewed relevant studies, reports, technical

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information along with GIS information obtained through local communities and State and Federal agencies. Information reviewed included information obtained from National Data sources and universities related to natural hazards. As appropriate, these materials were incorporated into the plan and were documented throughout. Currently, only two of our local jurisdictions, the City of Myrtle Beach and the City of North Myrtle Beach, have existing hazard mitigation plans. Both plans were reviewed and were incorporated as appropriate into this plan. Emergency Management Staff also reviewed and provided additional information to include in this plan based on the current Horry County plans such as the Horry County EOP (which includes Hurricane Annex, Tsunami Annex, Riverine and Coastal Flood Annex, Earthquake Annex), Floodplain Ordinance/Code and the Horry County Comprehensive Plan which includes current land use maps and natural resource element plan. Additionally, a few of the South Carolina State plans were included also as necessary; like the Southern Wildfire Risk Assessment Report from the SC Forestry Commission as well as the SC Dept. of Public Safety Risk Management of Hazardous Materials Action Plan.

Inclusion of existing plans documents and technical information is documented throughout the plan as it was reviewed. Please see table on the below and on the next page which includes all of the plans referenced in the creation and revision of this document.

Local Governments are encouraged to incorporate the Hazard Mitigation Plan into their respective comprehensive plans, which are required to be updated every ten years, according to the State Statute. Additionally, local ordinances dealing with flood management, drainage, lot coverage, etc. should be amended to incorporate the recommendations contained in this Plan.

Jurisdiction	Plan/Ordinance Reviewed
Federal Government/DHHS (ATSDR)	Managing Hazardous Material Incidents Volume III
FEMA	Guidelines For HazMat/WMD Response, Planning & Prevention Training
	Guidelines for Public Sector Hazardous Materials Training
SC Dept of Public Safety & State Transport Police Division	Risk Management of Hazardous Materials Transportation in South Carolina: An Action Plan
South Carolina Forestry Commission	Southern Wildfire Risk Assessment Summary Report
Town of Aynor	Flood Ordinances & Hurricane Plan
	Comprehensive Plan
Town of Briarcliffe	Open Burning Ordinances
	Comprehensive Plan
Bucksport Water System	Vulnerability Assessment
	Emergency Response Plan
City of Conway	Storm Water Management Plan
	Storm Utility Ordinance
	Local Flood Ordinances
	Comprehensive Plan
Grand Strand Water & Sewer	Water System Standards & Specifications
Horry County Government	Emergency Operations Plan
	HC Local Comprehensive Beach Management Plan
	Field Response to HazMat Incidents (Work Safety Plan)

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	Storm Water Management Plan
	Comprehensive Plan
	Hurricane Annex
	Riverine & Coastal Flood Annex
	Local Flood Ordinances
Horry Electric Cooperative	Emergency Response Plan
Horry County School District	Comprehensive Emergency Plan
Horry Telephone Cooperative	Emergency Action Plan
	Spill Containment and Countermeasure Plan
City of Loris	Flood Damage Prevention Ordinance
	Drought Management Plan & Response Ordinance
City of Myrtle Beach	Hazard Mitigation Plan
	Hurricane Plan
	Comprehensive Plan
Murrells Inlet/Garden City Fire District	Hurricane Plan & Emergency Response Plan
City of North Myrtle Beach	Hazard Mitigation Plan
	Comprehensive Plan
Town of Surfside Beach	Emergency Response Plan
	Hurricane Plan
	Local Flood Ordinances
	Comprehensive Plan

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3. RISK ASSESSMENT

All Components of this Risk Assessment were developed using the best available data in the Horry County. During the Hazard Identification process, Emergency Management staff used GIS resources and FEMA Publication 386-2, Understanding Your Risk, *Section 1, Identify Hazards* to identify hazards that affect Horry County. Once the hazards were identified, updated and reviewed, the Horry County Mitigation Planning Task Force discussed the information. In the identification process, new hazards incorporated in the plan were evaluated through public participation in the LEPC quarterly meetings. Some information regarding hazards and their affects were created in addition to data collected by the Emergency Management staff. Staff researched local records of the Emergency Management office, local newspapers, local officials, public accounts, and community members.

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3.1 IDENTIFYING HAZARDS

Horry County is vulnerable to a wide variety of natural and man-made hazards that threaten life and property. The natural and man-made hazards that affect Horry County are summarized in the following table.

NATURAL HAZARDS THAT SIGNIFICANTLY IMPACT HORRY COUNTY		
HAZARD	**HOW IDENTIFIED**	**WHY IDENTIFIED**
Hurricane	* Review of Past Disaster Damage from FEMA * Local Emergency Management Office Records * Review of Hazard Data from the NCDC Website.	* 1989 thru present five Presidential Disaster Declarations * The Coastal location of Horry County in the Southeastern US
Flooding	* Review of Past Disaster Damage from FEMA * Local Emergency Management Office Records * Public Input * Review of FIRM Maps	* Varied Impacts – Severe to Minor * The Geographical Features show many streams, rivers * Maps show many flood prone areas * Review of Existing Reports
Tornados	* Review of Past Disaster Damage * Review of Hazard data from the NCDC website * Public Input * Wind Zone Map of United States	* Numerous Past Events * The NCDC website show all of Horry County affected * Local Records identified events * Wind Zone Maps identifies region in the Zone III Wind Area of + 200mph.
Severe Thunderstorms	* Review of Past Disaster Data from the NCDC website * Hazard Assessment Survey * Local Emergency Management Records	* Many documented past events in the county * NCDC data shows extensive property damage
Winter Storms	* Review of Past Disaster Damages from FEMA * Hazard Assessment Survey * Local Emergency Management Records	* Severe past events in County * Variety of events including * Snow and Ice Storms
Storm Surge	* Review of coastal repetitive loss properties * Local Emergency Management Records * Review of Hazard data from NCDC website * Hazard Assessment Survey	* The Coastal location of Horry County * Storm Surge Maps show a moderate risk area * Many repetitive loss properties in the storm surge risk area
Earthquake	* Review of the South Carolina Earthquakes by the SC Seismic Network * Hazard Assessment Survey	* The location of a fault line through Charleston, South Carolina * The PGA shows Horry County as a PGA of 5%
Wildfire	* Local Emergency Management Records * Hazard Assessment Survey * County Fire Records * Southern Wildfire Risk Assessment Summary Report	* Past Presidential Declaration * Large part of the county is Prime Forestland * 95% of the soils in Horry County have high or Moderate soil productivity potential.
Lightning	* Review of NCDC Website * Local Emergency Management Records	* Records indicate a high number of events with significant human and property loss.

Drought	* Review of Past Disaster Damage	* NCDC data shows 6 events from 1950-2004
Extreme Heat	* Hazard Assessment Survey * Review of NCDC website	* Local input identified the potential effect to the water table in the County.
Tsunami	* Tsunami hazard maps * Review of NCDC website	* Identified threat from Canary Islands & Puerto Rico

MAN MADE HAZARDS THAT SIGNIFICANTLY IMPACT HORRY COUNTY		
HAZARD	**HOW IDENTIFIED**	**WHY IDENTIFIED**
HazMat	* Hazard Assessment Survey * Local Emergency Management Records	* Several Hazardous Material Sites throughout Horry County * National Response Center (NRC)
Terrorism (CBRNE)	* Hazard Assessment Survey * Local Explosive Ordnance Disposal Team Records	* Heightened sense of security since September 2001
Cyber Terrorism	* Information Technology records	* Several attacks on Horry County IT department

The Horry County Mitigation Planning Task Force identified these Hazards based on the historical evidence gathered from the South Carolina State Climatologic Center, the National Climatic Data Center, FEMA's Hazard Mapping website, and the South Carolina Geological Survey. GIS information and historical data were also gathered and provided to the local jurisdictions. The local jurisdictions also had a wide range of data that identified what hazards affected the region based on the past experiences.

Through this process, there were hazards that were determined to not significantly affect Horry County, and therefore are not discussed further in the plan. This determination does not preclude the plan from including these hazards in future updates of the plan as new information is discovered concerning these types of hazards. The Mitigation Planning Task Force will include any new information on hazard identification in future updates of this plan.

HAZARDS THAT DO NOT SIGNIFICANTLY AFFECT HORRY COUNTY		
HAZARD	**HOW IDENTIFIED**	**WHY IDENTIFIED**
Dams/Levees	* Review the State Hazard Assessment * DHEC Regulated Dams	* No Historical Damages * No High Hazard Dams in Horry County
Hail	* Review of National Climatic Data Center (NCDC) website * Local Emergency Management Records	* NCDC data shows numerous events but very minor associated property and crop damage

The hazards that do affect Horry County were split into two different categories: spatially defined hazards and non-spatially defined hazards. Spatially defined hazards are characterized by their ability to affect a certain area without affecting others due to the topography of the land. The spatially defined hazards identified by the Mitigation Planning Task Force are flooding,

storm surge, wildfire and tsunami. Therefore, when addressing the non-spatially defined hazards in the risk assessment, all information presented will include the unincorporated Horry County and the participating jurisdictions while being referred to as "Horry County".

It is significant to note that during the 2020 review of this Plan, Coronavirus 2019 (COVID 19) remains active. COVID 19 is a virus (more specifically, a coronavirus) identified as the cause of an outbreak of respiratory illness first detected in Wuhan, China December 2019 that spreads from person to person. As of July 27, 2020 the reported numbers by CDC (Center for Disease Control) are below:

	United States	South Carolina	Horry County
Total positive cases to date	4,296,461	82,071	7,548
Reported deaths to date	148,076	1,452	104

The impacts of this virus have effected every aspect of life in our communities including first responders, government operations, schools and universities, the judicial system, childcare facilities, hospitals and medical providers, transportation, parks and recreation, business and workplaces, and faith based organizations. At this time there continues to be a daily rise in persons testing positive for the virus and there is currently no vaccination. The State of South Carolina issued a State of Emergency on March 13, 2020 and all public schools were closed on March 15, 2020. Mandatory shut downs of restaurants and bars as well as limitations to public gatherings was also initiated in March. On March 27, 2020 President Trump approved South Carolina's disaster declaration. Further orders and mandates include restriction on travel, closing of non-essential businesses and a "home or work" order. In May 2020 some restrictions began to be lifted under strict Center for Disease Control (CDC) and South Carolina Department of Health and Environmental Control (SCDHEC) guidelines including social distancing, masks, capacity limitations and sanitation recommendations.

On March 14, 2020 Horry County declared a State of Emergency and local jurisdictions followed with the same actions. On March 18, 2020 Horry County Emergency Management activated a virtual Emergency Operation Center and government buildings closed to the public. All government services continue, though, through virtual, drive through, or appointment only means. The Comprehensive Emergency Operations Plan was and continues to be reviewed for updates and responses during the COVID environment. Specific attention is given to the Hurricane annex and multiply virtual meetings were conducted with local and state partners regarding operations such as sheltering and transportation during an evacuation in a COVID environment.

3.2 PROFILING HAZARDS

The following section provides a profile of each identified hazard in Horry County. This portion of the plan identifies the following information:

1. A description of each identified hazard in the planning area and the location and

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extent that this hazard can affect the area.

2. A historical background on each identified hazard in the planning area and the probability of future hazard events occurring.
3. Maps of the locations and portions of the planning area affected by hazard events.

The following Hazard Profiles have been created using the best available data from a variety of resources, including but not limited to the National Climatic Data Center, FEMA Hazard Mapping website, National Response Center (NRC), Environmental Protection Agency (EPA), Homeland Security Department (DHS), National Weather Service, National Hurricane Center, NASA, United States Landfall Probability Webpage, Federal Emergency Management, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, South Carolina State Climate Office, South Carolina Department of Health and Environmental Control, South Carolina Forestry Commission, South Carolina Department of Natural Resources, Horry County Flood Mitigation Plan, newspaper articles, and personal accounts. Emergency Management staff researched and provided updated GIS hazard maps and historical documentation to the Mitigation Planning Task Force and the Local Emergency Planning Committee for review.

The hazard maps were provided to the Mitigation Planning Task Force for review and approval. Each jurisdiction reviewed and updated their maps pertaining to each individual hazard and jurisdictional risk assessment, as they deemed suitable. As hazards were addressed, past events were also discussed focusing on how those events affected and impacted the community at that particular time.

For the purpose of ranking hazards affecting Horry County, in order of importance for mitigating their effects, a hazard index was assigned (see Table 3.2.a) on a scale of 1-5, with 5 being the highest priority for considering mitigation goals (highest, high, medium, low and lowest). This index takes into account the anticipated frequency of occurrence (see Table 3.2.b), the specific consequences of impact (see Table 3.2.c) and if there has been a past declaration for the particular hazard. This is not meant to be a scientific process, but will serve as a way to prioritize mitigation goals based on the potential frequency and likely extent of damage from hazards known to affect the County. During the update of the plan the hazard index tables were reviewed for continued accuracy and relevance. All members of the Mitigation Task Force agreed that the tables still accurately reflect the assigned hazard index.

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Table 3.2.a

Hazard Index Ranking				
Impact ➡ / Frequency of Occurrence ⬇	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 (Highest)	4 (High)	4 (High)	3 (Medium)
Likely	5 (Highest)	4 (High)	3 (Medium)	2 (Low)
Possible	4 (High)	3 (Medium)	2 (Low)	1 (Lowest)
Unlikely	3 (Medium)	2 (Low)	1 (Lowest)	1 (Lowest)
Highly Unlikely	2 (Low)	1 (Lowest)	1 (Lowest)	1 (Lowest)

Source: FEMA, 1997

Table 3.2.b

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.

Source: FEMA, 1997

Table 3.2.c

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.

Source: FEMA, 1997

Table 3.2.d

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Hazard Ranking Assessment				
Hazard	**Past Federal Declarations**	**Frequency**	**Impact**	**Hazard Ranking**
Natural Hazards				
Hurricane	Yes	Highly Likely	Critical	4
Storm Surge	No	Possible	Negligible	1
Earthquake	No	Highly Unlikely	Catastrophic	2
Wildfire	Yes	Highly Likely	Negligible	3
Flooding	Yes	Highly Likely	Negligible	3
Tornados	No	Likely	Negligible	2
Severe Thunderstorms	No	Highly Likely	Negligible	3
Lightning	No	Likely	Negligible	2
Winter Storms	No	Likely	Limited	3
Drought	No	Possible	Negligible	1
Extreme Heat	No	Possible	Negligible	1
Tsunami	No	Highly Unlikely	Negligible	1
Man Made Hazards				
Hazardous Materials	N/A	Highly Likely	Negligible	3
Terrorism-Chemical/Radiological	N/A	Highly Unlikely	Negligible	1
Terrorism-Biological	N/A	Highly Unlikely	Negligible	1
Terrorism-Nuclear	N/A	Highly Unlikely	Negligible	1
Terrorism-Explosives	N/A	Unlikely	Limited	1
Cyber Terrorism	N/A	Likely	Negligible	2

In addition to ranking hazards it is also important to define the items being analyzed within the Consequence Analysis. Below each area of potential impact is defined as to what perspective was analyzed.

Responders: refers to those individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence and the environment (Homeland Security Presidential Directive/HSPD-8).

Critical Infrastructure: Assets, systems, and networks, whether physical or virtual, so vital to Horry County that the incapacity or destruction of such assets, systems or networks would have a debilitating impact on security, public health or safety or any combination of those matters. (DHS)

Environment: A condition capable of posing an unreasonable risk to air, water, or soil quality and to plants or wildlife. (NFPA 471, 1997, p.8)

Delivery of Services: Process and activities which, if interrupted, will cause a business or organization to sustain a severe economic loss, or jeopardize the continued existence of the organization.

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Public Confidence in Governance: To make and administer the public policy and affair.

Facilities: "Public facility" means the following facilities owned by a State or local government: (A) any flood control, navigation, irrigation, reclamation, public power, sewage treatment and collection, water supply and distribution, watershed development, or airport facility. (B) Any non-Federal-aid street, road, or highway. (C) Any other public building, structure, or system, including those used for educational, recreational, or cultural purposes. (D) Any park. (Stafford Act, June 2006 (FEMA 592), p.15)

Public: A group of people or population residing in Horry County that shares a government.

Property: all land, structures, firmly attached and integrated equipment, anything growing on the land, and all "interest" in the property which may be the right to future ownership.

Economic Condition: The financial state of the county based on the productivity of the following industries: tourism, transportation, healthcare, construction, real estate, and agriculture.

Tourism: a collection of activities, services and industries which deliver a travel experience comprising transportation, accommodation, eating and drinking establishments, retail shops, entertainment businesses and other hospitality services provided for individuals or groups traveling away from home.

Agriculture: Cultivation of livestock, crops and other products used to sustain life.

According to the FEMA website for data visualization, Horry County has had 26 disasters since 1953. This data includes 15 hurricanes, 3 fires, 3 severe ice storms, 2 biological, 2 flood and 1 severe storm. Coinciding with the Risk Assessment, Horry County has 18 declared disasters as listed below. The chart below depicts the type of disaster and year of occurrence.

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Disaster Title	Year of Declaration Date	Declaration Number
Hurricane Hugo	1989	843
Severe Winds/Flood w/ Fran	1996	1140
Hurricane Bonnie	1998	1243
Hurricane Floyd	1999	1299
SC-Long Bay Fire	2001	2388
SC-Legends Fire	2002	2426
Hurricane Charley	2004	1543
Severe Ice Storm	2004	1509
Tropical Storm Frances	2004	1566
Hurricane Katrina	2005	3233
Highway 31 Fire	2009	2816
Severe Winter Storm	2014	4166
Severe Storms & Flooding	2015	4241
Hurricane Matthew	2016	4286
Hurricane Irma	2017	4346
Hurricane Florence	2018	4394
Hurricane Dorian	2019	4464
COVID 19 Pandemic	2020	4492

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3.2.1 HURRICANE

The planning team reviewed and analyzed this section in January 2012; a hazard profile worksheet and consequence analysis was added. This section was again reviewed in January 2015 and June 2020 to ensure all information was updated and relevant.

The hazard profile and consequence analysis worksheets were completed based on the probability of a category three hurricane affecting Horry County. The following analysis is based on the conditions of a category three affecting our coast, not a direct hit. The probability of a direct hit to Horry County would be an unrealistic and inaccurate for this type of analysis because even a near miss of such a storm could cause damage as if we were hit directly. Therefore to keep the analysis realistic the following worksheets were based upon the effects of a category three storm affecting our coast.

Definition

A hurricane is a tropical cyclone with winds that exceed 64 knots (74 mi/hr) and circulate counter-clockwise about the center in the Northern Hemisphere (clockwise in the Southern Hemisphere). A hurricane develops over warm waters and is caused by atmospheric instability created by the collision of warm air with cooler air.

Hurricane intensity is measured using the Saffir-Simpson Hurricane Wind Scale, ranging from 1 (minimal) to 5 (catastrophic). The scale categorizes hurricane intensity linearly based upon maximum sustained winds and minimum barometric pressure, which are combined to estimate the potential flooding and damage to property given a hurricane's estimated intensity (see Saffir-Simpson Hurricane Wind Scale below).

Category	Wind Speeds	Effects
One	74-95 mph	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal road flooding and minor pier damage.
Two	96-110 mph	Some roofing material, door, and window damage to buildings. Considerable damage to vegetation, mobile homes, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of center. Small craft in unprotected anchorages break moorings.
Three	111-130 mph	Some structural damage to small residences and utility buildings with a minor amount of curtain wall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain continuously lower than 5 feet ASL may be flooded inland 8 miles or more.
Four	131-155 mph	More extensive curtain wall failures with some complete roof structure failure on small residences. Major erosion of beach. Major damage to lower floors of structures near the shore. Terrains continuously lower than 10 feet ASL may be flooded requiring massive evacuation of residential areas inland as far as 6 miles.
Five	greater than 155 mph	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Major damage to lower floors of all structures located less than 15 feet ASL and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5 to 10 miles of the shoreline may be required.

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Non-Hurricane Classifications		
Tropical Storm	39-73 mph	The convection in tropical storms is usually more concentrated near the center with outer rainfall organizing into distinct bands.
Tropical Depression	0-38 mph	Has a closed circulation.

History of Hurricanes

FEMA, Hurricane Hazel

Horry County is subject to Hurricanes and Tropical Storms frequently throughout the tropical season. Although many tropical systems have affected Horry County, the last time the eye of a hurricane directly impacted Horry County was in 1954, with Hurricane Hazel, a Category 4 hurricane. Hurricane Hazel affected the northern portion of Horry County. It destroyed buildings and infrastructure, as well as negatively impacted the local economy. Hurricane Hugo, a category three hurricane, graced South Carolina's coast on September 22, 1989 and the statistics are staggering: 264,000 people evacuated, $2 billion in agricultural damage, and 20 dead in South Carolina alone. Damage from Hurricane Hugo dwarfs all other disasters in South Carolina's history. The entire storm itself lasted roughly 12 hours; however the impact has lasted years. This disaster was the second largest claim event in the history of the National Flood Insurance Program. Luckily its worst fury was spent on a relatively undeveloped area north of Charleston and south of Conway.

On August 26, 1998, the center of Hurricane Bonnie came within 70 miles of the Horry County coast as the storm tracked north during the afternoon and early evening. Highest wind reports were from the NNW, ranging as high as 82 MPH at the Cherry Grove pier, while at the Myrtle Beach Pavilion the highest gust was 76 MPH. Rainfall ranged from 2 to nearly 4 inches. Widespread damage was heaviest in the northeast part of the county - mainly downed trees, wires and structural damage. Property damage was estimated at $3.8 million. Ocean levels rose 2-3 feet above normal with no over wash. The area was declared a Federal Disaster.

Tropical Storm Andrea crossed Florida and scraped along the coast of Georgia before the center of the storm neared Hilton Head Island on June 7, 2013. As the storm passed coastal Horry County we received heavy amounts of rainfall and brief tropical storm force winds. There were two impacts as a result of the system in Horry County. The first of which was a surfer who ventured into the water at 42nd Ave in Cherry Grove and was never found and a mobile home off Wiley Drive was damaged by a tree falling on its structure.

At the beginning of October 2015, Hurricane Joaquin brushed by South Carolina impacting the Horry County coastline and residential communities with significant rainfall and flooding. While Horry County was spared from tropical winds, Hurricane Joaquin produced record rainfall across most of South Carolina and eastern North Carolina. Horry County received in excess of 20 inches of rain in 48 hours which overburdened drainage capabilities throughout the county resulting in flash flooding and ultimately the third highest crest on record for the Waccamaw River. It was determined through the Damage Assessment Teams (DAT) surveys that at least 334 homes were impacted by flood waters with an estimated $9,683,725

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in damage. Significant beach erosion occurred along the Grand Strand and damage assessments were coordinated with State DATs, FEMA, and The United States Army Corp of Engineers (USACE) to determine the level of damage to Horry County beaches. An estimated 660,000 cubic yards of sand was lost along the grand strand due to high waves and significant storm-water run-off. On October 11, 2015 the Waccamaw River crested at 16.23 feet. The crest following Hurricane Floyd in 1999 was 17.60 feet and the flood of record in 1928 crested at 17.80 feet. Additional rain fell a week later which contributed to extenuating flood conditions along the Waccamaw River and extended road closures. The Little Pee Dee River crested on October 10, 2015 causing minor flood conditions in the western portion of the county. Both Rivers remained at flood stage for an additional week due to slow flood water recession.

Hurricane Matthew impacted Horry County during the month of October 2016. The National Hurricane Center indicated that Hurricane Matthew made landfall on October 8th North of Charleston, SC as a Category 1 hurricane and traveled through the Horry County area later that same day. Governor Haley ordered a coastal evacuation for the State of South Carolina which included Zone A for Horry County. Storm damage exceeded $130 Million in Horry County. Winds from Hurricane Matthew toppled trees, caused extensive power outages and demolished the Springmaid and Surfside Beach piers. Excessive rainfall once again caused record breaking flooding and the National Weather Service in Wilmington issued its first-ever flash flood emergency for Horry County as flooding became widespread and life-threatening. Most of the impacts from Matthew were felt in-land and on the back-side of the hurricane as it moved through. Residents along the Intracoastal Waterway and the Waccamaw River were still recovering from the 2015 Hurricane Joaquin flooding a year earlier. The excessive rain caused tremendous in-land flooding along the Little Pee Dee River especially in the Marion County Town of Nichols which borders Horry County along the Little Pee Dee River. As flood water moved down stream, all of the major highways and bridges that cross the river along the Horry County border where under a high threat of becoming impassable. The Bucksport community sits along a point where the Little Pee Dee River, the Great Pee Dee River, the Waccamaw River and the Intracoastal Water merge together. For the first time in recent history, the rising water from these rivers flooded the Bucksport Community prompting emergency evacuations for folks living in that area. The flooding directly impacted over 5000 residential properties throughout the county and indirectly close to an additional 20,000.

On September 6, 2017, Horry County Emergency Operations moved to Opcon 4 to monitor Hurricane Irma which made landfall in Barbuda as a Category 5 Hurricane. Though reduced to a Tropical Storm on September 11, 2017 before reaching Horry County, the Grand Strand area was faced with powerful wind gusts and heavy downpours, causing coastal flooding, power outages, rough surf, rip current conditions and wind damage. The Emergency Operation Center was not activated, but staff monitored closely until returning to Opcon 5 on September 12, 2017.

On September 8, 2018 Horry County activated the Emergency Operations Center in preparation of the arrival of Hurricane Florence. With the combined track and intensity of the storm, Governor Henry McMaster ordered the evacuation of the South Carolina coast on September 10th to take effect on September 11th at 8 AM. The Evacuation Order included all three evacuation zones in Horry County,

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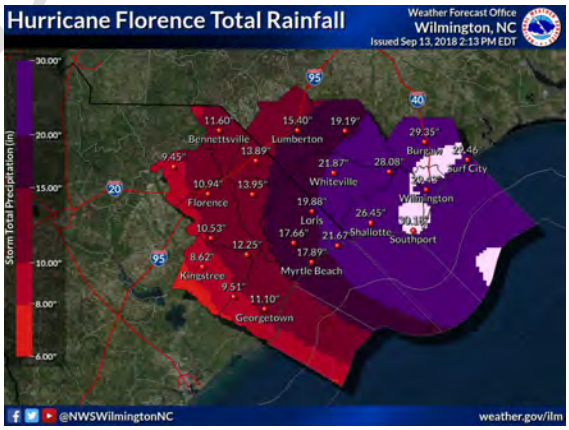
something that had never been done before. Once Hurricane Florence made landfall, it took 24 hours for the storm to move across Horry County producing bands of torrential rainfall. Heavy rains occurred throughout the County for three days whereby 23.63 inches of rain was observed near Loris while areas to the north of Horry County received up to 35 inches of rain. During the height of the landfall, there were several tornado warnings including one reported sighting of a funnel cloud less than a half mile away from the Emergency Operations Center (EOC). During the initial flash flooding from the hurricane, a hazardous materials incident occurred about a quarter mile from the EOC. Water from the flash flooding interacted with chemicals located in a dry storage area thus causing toxic fumes to be released. Prior to the landfall of the hurricane, Grand Strand Regional Medical Center was required to evacuate and close. This along with the flooded and damaged roads caused tremendous hardships for emergency medical care and overwhelmed the remaining medical facilities. After the initial flash flooding, the EOC had to prepare for anticipated record breaking riverine flooding. The flooding resulted in over 260 impassable roads that threatened to isolate Horry County from the rest of the region as well as cut the county in two for an estimated period of 7-10 days due to flooding on major highways leading in and out of the county. When the actual flooding occurred, two routes running into and out of the county remained open, four of the five major highways and over 260 secondary roads running through Horry County were impacted for a period of 8-10 days. This resulted in significant transportation delays and hardships during that time. Several new records were established in the wake of Hurricane Florence. The Horry County Emergency Operations Center activated for 26 days, surpassing the old record of 22 with Hurricane Matthew. The flood from Florence set the new record in Conway of 21.16 feet also surpassing the old record of 17.89 feet set by Hurricane Matthew. There were 1,941 homes impacted and the reported cost of damage from Hurricane Florence flooding was $41.5 Million in Horry County. To date, Horry County has $14.1 Million in expenses related to the event. During the EOC activation, the phone bank handled a record 20,920 calls. Horry County Emergency Management Department had social media records were set as well. We reached 1,252,526 people on Facebook by sharing 352 text, photo, video, and link posts and on Twitter, our 202 tweets were seen by users more than 920,000 times.



Hurricane Dorian was the second most powerful storm ever recorded. It made landfall in the Bahama Islands on September 1 & 2, 2019 as a powerful Category 5 Hurricane with maximum sustained winds of 185 mph. After battering the Bahamas, Hurricane Dorian stalled due to a collapse in the weather pattern that had been steering the storm. As a result, Dorian upwelled cold water and went through an eyewall replacement cycle, which caused the storm to weaken to a Category 2 hurricane on September 3. Hurricane Dorian started moving again on September 3 and rode up the east coast of the United States, staying just offshore. During this time, Hurricane Dorian gained and lost strength before finally making final landfall in Cape Hatteras North Carolina on September 6 as a Category 1 storm. Governor McMaster ordered a coastal evacuation for the State of South Carolina which began at noon on Monday, September 2 and included Zone A for Horry County. As a result of the evacuation order, Horry County issued a State of

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Emergency on September 2, well ahead of any impacts from the storm. Horry County was fortunate with the impacts that it experienced during Hurricane Dorian. The overall damage was much more minimal than had been in the previous two storms. Hurricane Dorian dropped 12.77 inches of rain in Myrtle Beach with lower amounts in the western parts of the county. Conway received around 9.96 inches of rain, and Socastee received 10.18 inches of rain. As is typical, during the event, the heavy rainfall created periods of flash flooding in low lying areas in Horry County. A few neighborhoods near Conway were impacted by the flash flooding, and some commercial parking lots on the south end of the county flooded as well. Storm surge associated with Hurricane Dorian did impact those properties directly along the coast, but it did not reach the levels that the National Hurricane Center had predicted. In Garden City, storm surge covered parts of Atlantic Avenue and Waccamaw Drive during the storm, but the beach only sustained minimal erosion. The Horry County Emergency Operations Center activated for 5 days in support of response and recovery operations for Hurricane Dorian. To date, Horry County Government has submitted to the State a public assistance reimbursement request for $490,000.00 in damages.

The Hazard Mitigation Planning Task Force was interrupted completing updates to this Plan due to Hurricane Isaias on August 3-4, 2020. Hurricane Isaias hit the Grand Strand with 75 mile per winds making it a Category 1 hurricane with winds reaching 85 mph. In North Myrtle Beach Sea Cabin Pier was damaged and severe erosion occurred in Cherry Grove. Many dunes had 8-10 foot cliffs washed out. Cars were flooded out, trees down and power outages throughout the county. The storm surge came in at the 3rd highest record for Springmaid Pier. Both Garden City and Surfside were area was hit with flooded road and some beach erosion. The Apache Pier near North Myrtle Beach also experienced some damage. Isaias made landfall just 20 miles north of Horry County in Ocean Isle, North Carolina. The preliminary rainfall totals are a high in neighboring Georgetown County of 6.54, 3.66 in Myrtle Beach, 3.61 in Little River and 3.03 in Conway. There was also at least one possible tornado in the Longs area which is not yet confirmed by the National Weather Service. Damages assessments are ongoing.

The map following this section provides insight to tropical systems and Hurricanes that have affected Horry County. The data is from 1999-2019 and shows dates and category of storm at the most intense.

Summary and Conclusions of the Hurricane Profile

The probability of a hurricane directly affecting our area is unlikely; however the probability of the effects of a hurricane affecting our area is highly likely. Although Horry County has not had a direct impact since Hurricane Hazel in 1954; many hurricanes/tropical systems' peripheral effects have impacted our coast without a direct impact.

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Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Hurricane	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Hurricane Season begins June 1st and ends November 30th. Typically hurricanes effect the coast in August and September when the coastal waters are at their warmest. However hurricane season can begin and has begun earlier and ended later.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to Hurricanes.
PROBABLE DURATION
A hurricane itself usually last hours but the effects can last hours, days, months or even years depending on the size and landfall.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• National Hurricane Center • National Weather Service • Horry County Emergency Management

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Consequence Analysis	
HAZARD: Hurricane	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

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Consequence Analysis	
HAZARD: Hurricane	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

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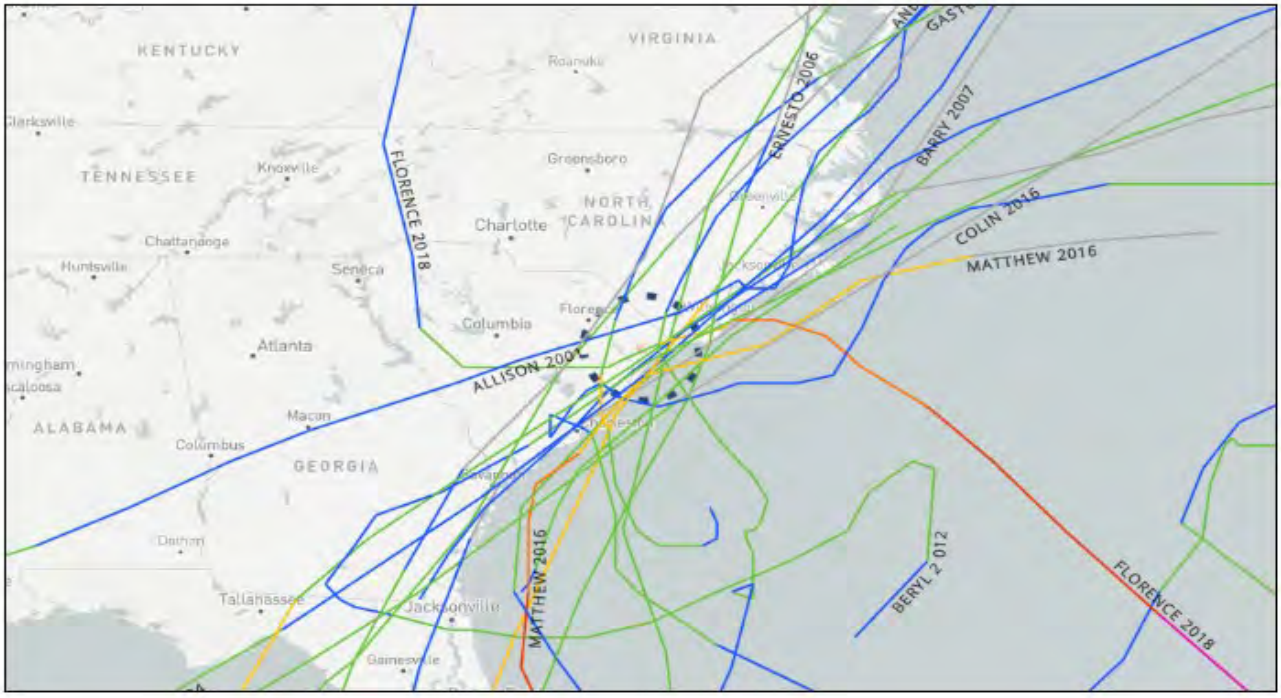
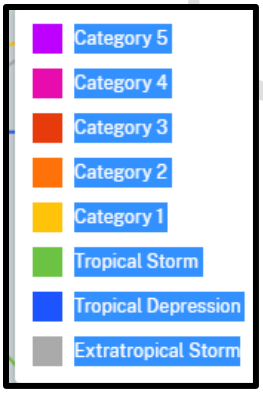
Historical Hurricane & Tropical Storm Tracks for Horry County from 1999-2019

Hurricane List





Legend

Map and data by NOAA at coast.noaa.gov

Historical Hurricane & Tropical Storm data for Horry County from 1999-2019

Name	Year	Dates	Type Storm and Category at strongest point
Dorian	2019	Aug 22 – Sep 9	Cat 5 Hurricane
Chantal	2019	Aug 16-Aug 24	Tropical Storm
Florence	2018	Aug 30-Sep 18	Cat 4 Hurricane
Not named	2017	Aug 27-Aug 29	Extratropical
Matthew	2016	Sep 28-Oct 10	Cat 5 Hurricane
Hermine	2016	Aug 28-Sep 8	Cat 1 Hurricane
Colin	2016	Jun 5-Jun 8	Extratropical
Bonnie	2016	May 27-Jun 9	Tropical Storm
Ana	2015	May 6-May 12	Tropical Storm
Andrea	2013	Jun 5-Jun 8	Tropical Storm
Beryl	2012	May 25-Jun 2	Tropical Storm
Hanna	2008	Aug 28-Sep 8	Cat 1 Hurricane
Barry	2007	May 31-Jun 5	Tropical Storm
Ernesto	2006	Aug 24-Sep 4	Cat 1 Hurricane
Alberto	2006	Jun 10-Jun 19	Tropical Storm
Gaston	2004	Aug 27-Sep 3	Cat 1 Hurricane
Charley	2004	Aug 9-Aug 15	Cat 4 Hurricane
Bonnie	2004	Aug 3-Aug 14	Tropical Storm
Kyle	2002	Sep 20-Oct 12	Cat 1 Hurricane
Allison	2001	Jun 5-Jun 19	Tropical Storm
Helene	2000	Sep 15-Sep 25	Tropical Storm
Gordon	2000	Sep 14-Sep 21	Cat 1 Hurricane
Floyd	1999	Sep 7-Sep 19	Cat 4 Hurricane

Map and data by NOAA at coast.noaa.gov

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3.2.2 STORM SURGE

The planning team has reviewed and analyzed this section of the plan in January 2015 and June 2020 and verified the information to make sure it was up to date and relevant.

Definition

Storm surge is a large dome of water often 50-100 miles wide that sweeps across the coastline in close proximity to the landfall of a hurricane. The surge of high water topped by waves is devastating. Along the immediate coast, storm surge is the greatest threat to life.

Storm surge is a result of wind that pushes the ocean surface ahead of the storm; tides may be as high as 24ft above normal depending on storm size. Storm surge areas can be mapped by the probability of storm surge occurrences using Sea, Lake, and Overland Surges from Hurricane modeling (SLOSH).

History of Storm Surge

One of the most intense storms to directly impact the Horry County coastline, including the Town of Briarcliffe Acres, the Town of Surfside Beach and the unincorporated areas of Horry County was Hurricane Hazel on October 14, 1954. "Hazel" was a category 4 Hurricane with winds reaching 106 mph and tides greater than 16 feet at Myrtle Beach. The devastation along the northern coast of Horry County in the Little River and Cherry Grove areas was catastrophic.

The meteorologist in charge at the Weather Bureau in Raleigh gave the following description of the destruction along the beach: "All traces of civilization on that portion of the immediate water front from the South Carolina line to Cape Fear were practically annihilated. Grass covered dunes, some 10 to 20 feet high, along and behind beach homes, which had been built in a continuous line 5 miles long, simply disappeared, dunes, homes, and all."

The scope of damage from this storm included property damage mainly through the destruction of beach houses and businesses, as well as environmental changes along the coast such as the formation of new inlets and major beach and dune erosion.

Almost every pier and beachfront building from Pawley's Island to Ocean Isle Beach, North Carolina, was destroyed. Hurricane Hazel caused $27 million (1954 dollars) in damage after moving parallel to the coast and making landfall near Little River, South Carolina. The heaviest damage in South Carolina was from Pawley's Island northward. Hurricane Hazel was the second most costly storm in the US with $7 billion dollars in damages; $27 million (1954 dollars) was in South Carolina alone. She was also the eleventh most intense storm and the seventeenth

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deadliest storm with 95 deaths. (*NOAA. Technical Memorandum- NWS TPC-1] updated in October 2001).*

In September 1989, Hurricane Hugo, inundated the South Carolina coast with maximum storm tides of 20ft. These tides were observed in the Cape Romain-Bulls Bay Area of Charleston. Hurricane Hugo produced the highest tidal surge ever recorded in South Carolina, according to the US Army Corps of Engineers (Charleston District), tides reached 19.8 ft. above mean sea level.

Ten years later, on September 15, 1999, Hurricane Floyd hit Horry County. Winds gusted to 70 mph at Myrtle Beach and trees were down around the county. In Myrtle Beach, the cost due to tree and sign damage was over $250,000. The waves were as high as 15' and caused heavy damage to the Cherry Grove Pier. Rainfall was heavy; near 18 inches in eastern Horry County, causing major flooding in Conway. There was standing water waist-deep and many washouts from North Myrtle Beach to Garden City as drainage systems failed to accommodate the storm water. Power was out to about 100,000 customers. (NCDC)

During October 2015, Hurricane Joaquin brushed by South Carolina causing significant beach erosion along the Grand Strand. An estimated 660,000 cubic yards of sand was lost along the grand strand due to high waves and significant stormwater run-off.

Hurricane Matthew unleashed fury on the Grand Strand as it raged past Myrtle Beach on October 8, 2016, dumping more than a foot of rain, dragging down piers and toppling trees. The storm belted the area as a Category 1 hurricane with winds up to 75 mph as it went by tightly hugging the coast. Matthew also mixed with the high tide, created a dangerous storm surge. An estimated eight feet of storm surge washed ashore along the coastal Grand Strand. The gauge tracking the amount of surge was destroyed when Matthew pulled down the Springmaid Pier, so weather officials did not know just how high the surge reached.

According to the SC Department of Natural Resources Tropical Cyclone data, Hurricane Florence's landfall in September 2018 placed most of the SC Coast on the southerly side of the circulation with prevailing wind direction being offshore. The winds persisted for hours and caused the water to retreat from the coastline. As the storm crossed the state, the wind direction changed to an onshore flow, and water returned to normal levels and eventually increasing. A storm surge, combined with local tides of less than 2.5 ft. was measured and only minor beach erosion was reported.

Storm surge associated with Hurricane Dorian in September 2019 did impact properties directly along the coast, but it did not reach the levels that the National Hurricane Center had predicted. In Garden City, storm surge covered parts of Atlantic Avenue and Waccamaw Drive during the storm, but the beach only sustained minimal erosion.

On August 4, 2020 Category 1 Hurricane Isaias brushed by Horry County and made landfall 20 miles north in Ocean Isle, South Carolina. As of the writing of the updates to this plan, damage estimates are still underway. The Cherry Grove section of North Myrtle Beach felt the brunt of the storm for Horry County with storm surge estimated to be 4 to 5 feet with significant beach

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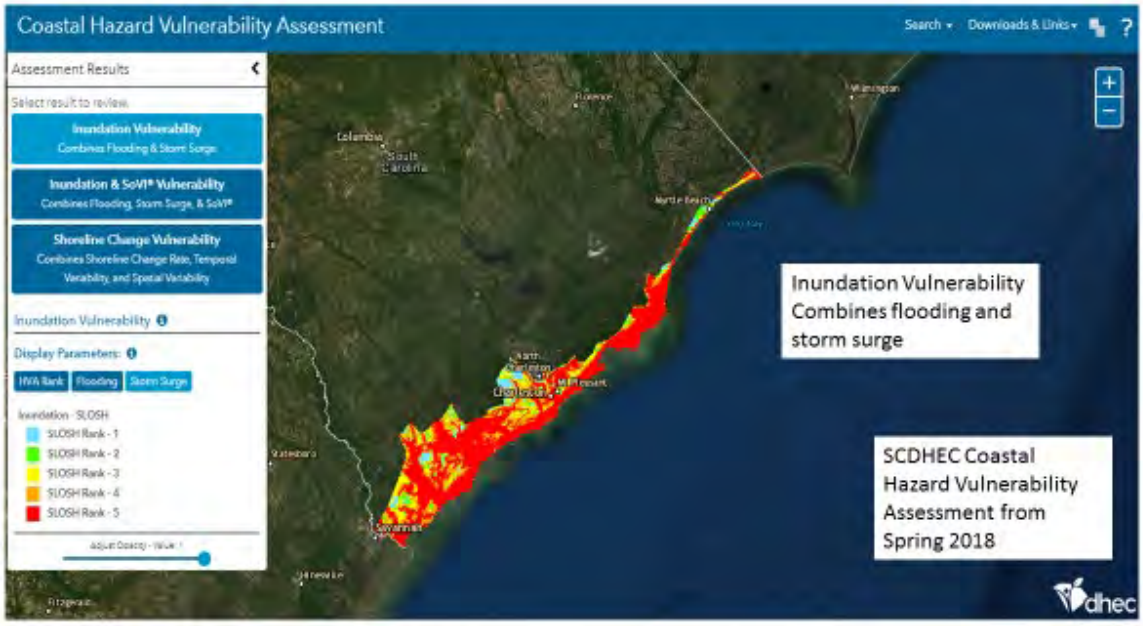
erosion.

The Myrtle Beach City Council enacted an ordinance in 1984 that created a coastal protection zone with a building control line based on location of the 50 year dune crest located 34 feet landward of the present ideal dune line. This ordinance also restricted activities that could occur in the zone in order to preserve natural beach, control erosion, and promote public safety. The City of Myrtle Beach's Zoning Administrator is responsible for enforcing the ordinance. The City of Myrtle Beach Hazard Mitigation Plan was reviewed and incorporated into this plan.

Horry Telephone Cooperative has two Universal Services Access Multiplexer (USAM) both located within the City of Myrtle Beach; 1601 Yaupon Drive South and 403 Unit 2, 19th Ave North. Both are susceptible to storm surge. Horry Telephone Cooperative identified both USAM sites as actions to minimize the impact of storm surge.

According to the South Carolina Department of Health and Environmental Control Department Beach Report 2003, beach erosion has been less since the refurbishing of the beaches began in 1998. In Spring of 2018 SCDHEC completed a Coastal Hazard Vulnerability Study. Below is a map depiction of Inundation Vulnerability for both storm surge and flooding along the South Carolina coast.



The only area of the coast that has not shown improvement or remains un-stabilized is located in the northern part of Horry County, in the Cherry Grove area. At 42nd Avenue North, the beach lost about 30 ft. of berm from the upper beach, but did gain an equal volume of sand on the lower profile. Another major loss was at 48th Avenue North about 50 ft. from the berm. However the majority of the lost sand is usually picked up further down the beach.

Although beach re-nourishment has reduced beach erosion since its inception in 2003, the beach still experiences storm surge on occasion. According to past occurrences of storm surge recorded by the National Data Center the chance of storm surge affecting our coast is likely within the

next 5 years.

The hazard profile and consequence analysis worksheets were completed based on the probability of average storm surge affecting Horry County. The following analysis is based on the conditions of storm surge along our coast, regardless if the system passes our coast or is a direct hit. Realistically storm surge affects the Horry County coastline even if a storm is far out to sea. Therefore the storm surge is analyzed on an average probability basis.

Summary and Conclusion of the Storm Surge Profile

According to the National Center for Environmental Information (NCEI), from 1955 to January 2020, 6 storm surge/tide/coastal flood incidents have taken place. Storm surge has accounted for more than $25 million in property damages and $50 thousand in crop damage in the county and participating jurisdictions.

Based on NCEI historical data, storm surge has occurred every 10.83 years in Horry County. This is calculated by dividing the number of years examined (65) by the number of occurrences (6). The probability of risk is 11% and is determined by the number of years in which storm surge occurred (6) divided by the number of years examined (60).

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Based on available historical information the anticipated "*Frequency of Occurrence*" of future storm surge is rated as ***"Possible",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

Based on available historical information the probable "*Consequence of Impact*" of future storm surge is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for storm surge in Horry County is ***"1" (Low).***

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Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Storm Surge	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Storm Surge is associated with tropical systems. The season for tropical systems is June 1st through November 30th.

AREAS LIKELY TO BE AFFECTED MOST

All areas east of US Business 17 (Kings Hwy) up to intersection with US 17 (Kings Hwy) and then all areas east of US 17 (Kings Hwy) to the northern county line. Also all flood prone areas along the Waccamaw River and the Great and Little Pee Dee Rivers and all mobile homes residents in the county. All areas south of Hwy 707 and Longwood Drive including all areas in Longwood Plantation (Blackmoor) to the Waccamaw River and all areas east of US 17 By-Pass (Mark Garner Hwy) to US 17 (N. Kings Hwy) and all areas east of US 17 (N. Kings Hwy) to the Northern county line. All areas between Hwy 701 and Hwy 544, south of Brown's Chapel Avenue and Hwy 814 plus all areas East of Highway 31 (Carolina Bays Pkwy) to Highway 90; and all areas East of Highway 90 to Highway 17 and all areas east of US 17 to the northern county Line.

PROBABLE DURATION

The duration of storm surge can last hours.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• National Hurricane Center • National Weather Service • SCEMD • Horry County Emergency Management

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Consequence Analysis	
HAZARD: Storm Surge	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

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Consequence Analysis	
HAZARD: Storm Surge	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

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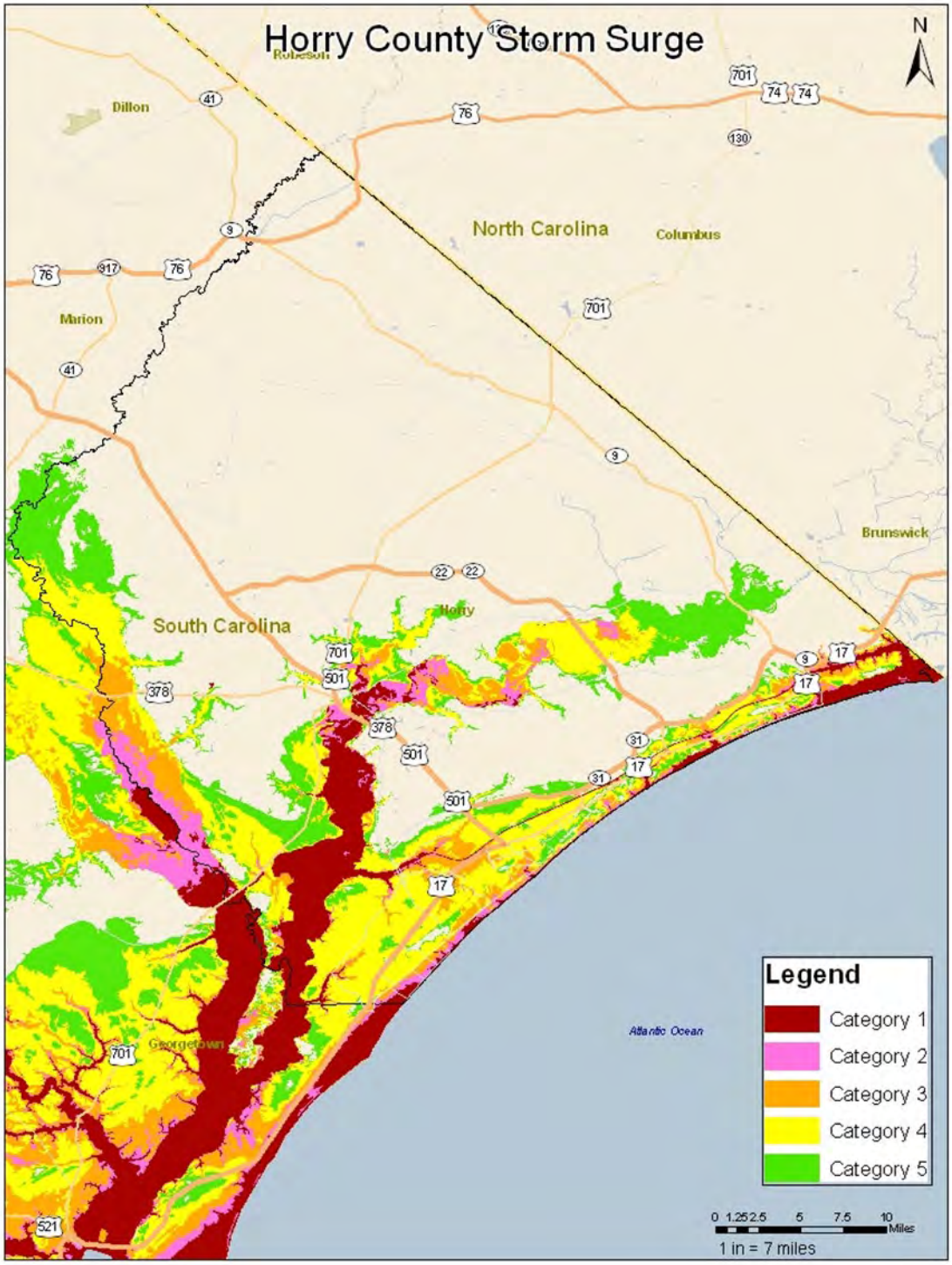
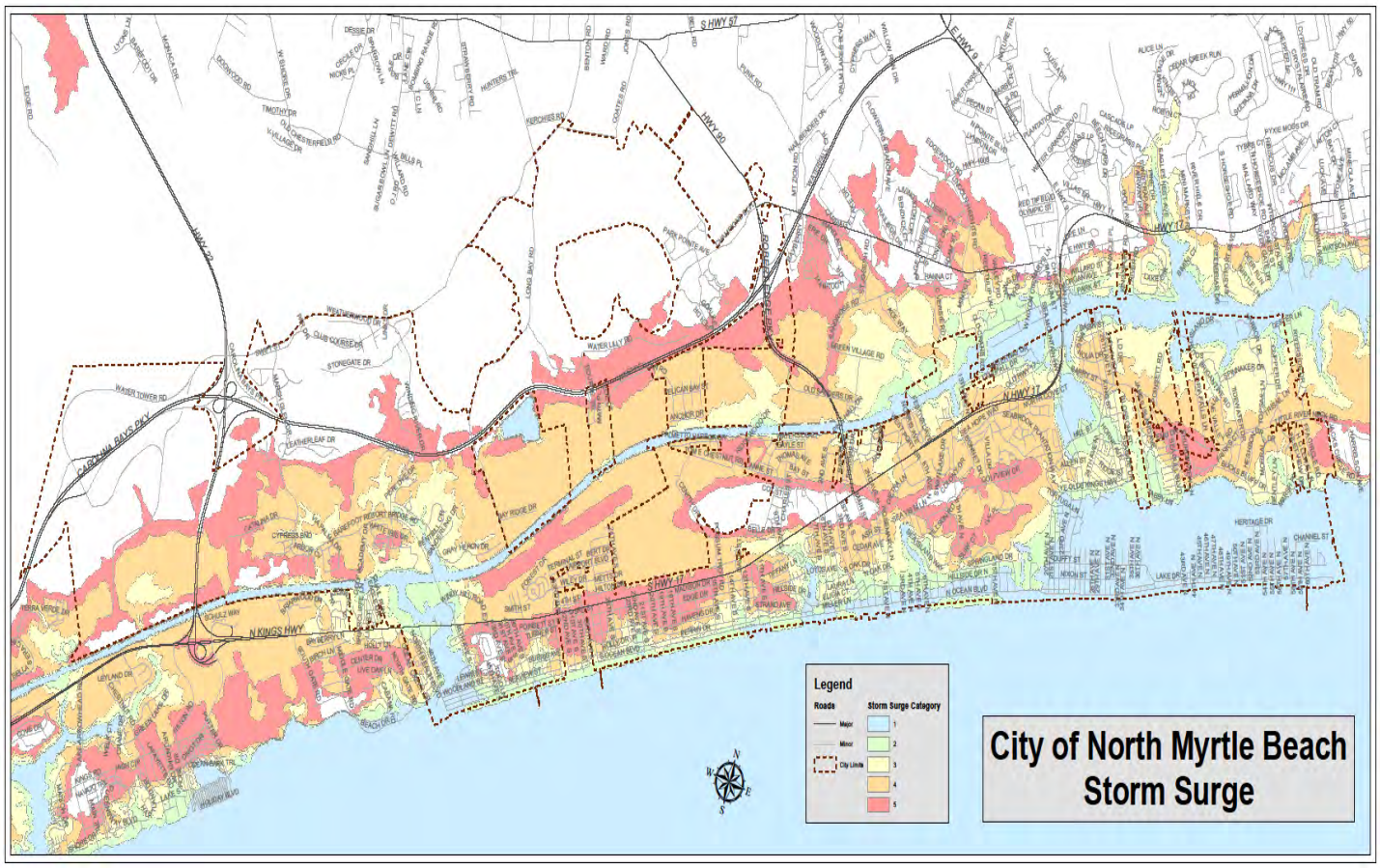
Horry County Storm Surge Map generated during the Hurricane Evacuation Study in 2012 performed by the US Army Corp of Engineers-Charleston District.



Map Generated by Horry County GIS Department



Map provided by City of North Myrtle Beach

3.2.3 EARTHQUAKE

The planning team has reviewed and analyzed this section of the plan in January 2015 and June 2020 verified the information to make sure it was up to date and relevant.

Definition

An earthquake is a sudden movement of the Earth, caused by the abrupt release of strain that has accumulated over a long time. When the accumulated energy grows strong enough, the plates break free. If the earthquake occurs in a populated area, it may cause many deaths and injuries and extensive property damage. (USGS)

Richter magnitudes increase logarithmically, meaning the energy increases 10 times for each magnitude number

Richter Magnitude	Mercalli Intensity	Description
2	I	Usually not felt, but detected by instruments.
	II	Felt by very few people.
3	III	Felt by many, often mistaken for a passing vehicle.
	IV	Felt by many indoors, dishes and doors disturbed.
4	V	Felt by nearly everyone. People awakened. Cracked walls, trees disturbed.
5	VI	Felt by all. Many run outdoors. Furniture moves. Slight damage occurs.
	VII	Poorly built buildings suffer severe damage. Slight damage everywhere else.
6	VIII	Moderate to major damage. Minor damage to specially designed buildings. Chimneys and walls collapse.
7	IX	All buildings suffer major damage. Ground cracks, pipes break, foundations shift.
	X	Major damage. Structures destroyed. Ground is badly cracked. Landslides occur.
8	XI	Almost all structures fall. Bridges wrecked. Very wide cracks in ground.
	XII	Total destruction. Ground surface waves seen. Objects thrown into the air. All construction destroyed.

Source: United States Geological Survey

History of Earthquakes

There has been no significant damage by an earthquake in Horry County including the participating jurisdictions in recent history, but there are recorded events of major earthquakes within South Carolina that have impacted the area.

The Charleston Earthquake, which occurred on August 31, 1886, was one of the largest historic earthquakes in eastern North America, and the largest earthquake in the southeastern United

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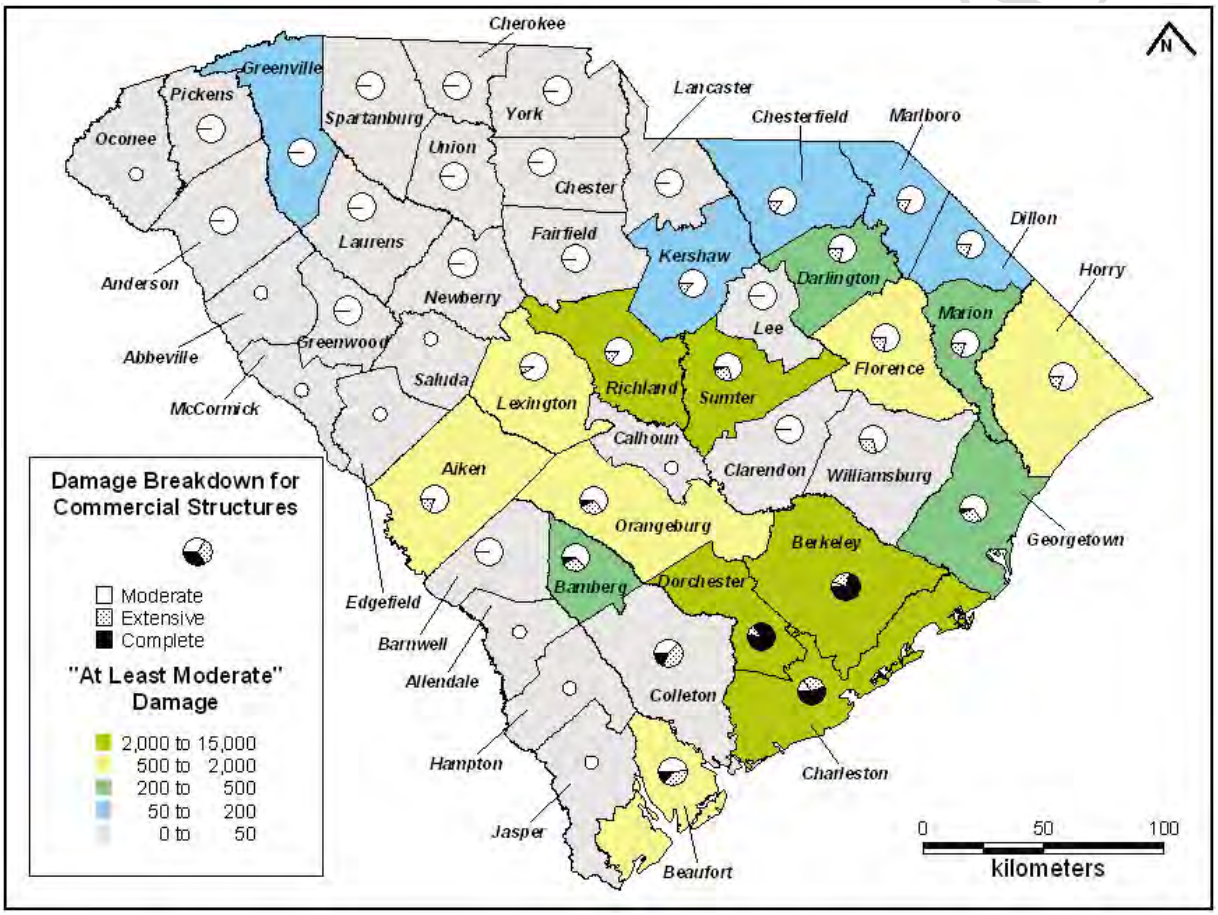
States.

The event took place before seismological instrumentation was available, but it is estimated that if the same earthquake occurred today it would register between 7.3-7.7 on the Richer Scale due to the substantial damage that occurred. This earthquake cause widespread damage and claimed the lives of approximately 60 people. The effects of this event on Horry County including the participating jurisdictions are recorded as having an intensity factor of 7 according the Modified Mercalli Intensity Scale.

Most buildings in the county were/are not built earthquake-proof. According to the HAZUS program, the map below estimates the degree and geographic extent of earthquake building damage across South Carolina based on inputs of building use, type, and construction materials.



Summary and Conclusions of the Earthquake Profile

Of 435 or more earthquakes reported to have taken place throughout all of South Carolina between 1754 and 1975, more than 300 were aftershocks that occurred in the first 35 years following 1886, none occurring in Horry County. Horry County and participating jurisdiction have no recorded earthquakes on file.

Therefore, assuming historic trends are to remain unchanged, Horry County and participating jurisdictions stand little chance of the occurrence of an earthquake in the next 5 – 10 years. This will be reevaluated again in the next 5-year update.

The anticipated "*Frequency of Occurrence*" of future earthquakes is rated as ***"Highly Unlikely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

However, the probable "*Consequence of Impact*" of future earthquakes is rated as ***"Catastrophic"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for earthquakes in Horry County is ***"1" (Low).***

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Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Earthquake	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	There are no seasonal patterns associated with an earthquake as they happen without warning. Horry County could experience negative effects from an earthquake in the immediate area or surrounding areas.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to earthquakes

PROBABLE DURATION
Usually earthquakes are short lived and dissipate in less than a few minutes. However, the potential impact could last for days, weeks and even months.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• USGS • National Weather Service • Horry County Emergency Management

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Consequence Analysis	
HAZARD: Earthquake	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
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Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

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Consequence Analysis	
HAZARD: Earthquake	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
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Limited	• Minor isolated instances of property damage
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POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
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POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

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3.2.4 WILDFIRE

The planning team has reviewed and analyzed this section of the plan in January 2012, January 2015, and June 2020 and made additional updates to the plan. Significant updates to this section due to the large Hwy 31 Wildfire Horry County had in April of 2009 and the Windsor Green Fire that occurred in March 2013 were made during the 2015 plan update.

Definition

A wildfire is an uncontrollable fire spreading through vegetative fuels, exposing and possibly consuming structures. They often begin unnoticed and spread quickly and are usually signaled by dense smoke that fills the area for miles around. According to FEMA Report No. 386-2 there are three fuel classifications. **Heavy Fuel** is vegetation consisting of round wood 3 to 8 inches in diameter. **Medium Fuel** is vegetation consisting of round wood 1/3 to 3 inches in diameter. **Light Fuel** is vegetation consisting of herbaceous plants and round wood less than ¼ inch in diameter.

Critical Fire Weather Frequency

Fuel Classification	< 1 Day/Year			2 to 7 Days/Year			> 8 Days/Year		
	Slope (%)			Slope (%)			Slope (%)		
	< 40	41-60	> 61	< 40	41-60	> 61	< 40	41-60	> 61
Light Fuel	M	M	M	M	M	M	M	M	M
Medium Fuel	M	M	H	H	H	H	E	E	E
Heavy Fuel	H	H	H	H	E	E	E	E	E
M = Moderate Hazard; H = High Hazard; E = Extreme Hazard *(Source: FEMA Report No. 386-2)*									

Source: Urban Wildland Interface Code: 2000

History of Wildfires
(see map following this section)

One of the most recent wildfires in Horry County occurred on April 22, 2009. In this fire there were 76 homes in the Barefoot Resort area that were completely destroyed. This community is located within the City of North Myrtle Beach; a jurisdiction not included in the plan. Fortunately, no lives were lost. On April 23, 2009 the fire was about 40% contained. Over the following weeks Horry County received significant rain which contained and controlled 100% of the fire. In total the fire burned 19,200 acres and an estimated 500 firefighters from thirty-five agencies aided in the fight. Estimates range in totals of 25 million dollars in personal property losses. This does not include the value of timber lost nor the cost incurred by the agencies who helped to battle this fire.

A brush fire impacted a community in Horry County occurred on March 16, 2013. The fire developed in some wildland adjacent to the Windsor Green Condominium Complex in Carolina

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Forest before spreading to the complex. There was a total of only 15 acres that burned of wildland however, the condominium complex was far less lucky. Twenty-six buildings burned totaling 110 condo units several families lost their pets and all their assets. Red Cross had to secure temporary housing for all the displaced people as a result of the fire.

On November 7, 2001, the area suffered from the Long Bay 1,500-acre fire. It was fought by over 150 firefighters from South Carolina and North Carolina. A major concern at the time was the afternoon sea breezes, which can boost winds and change directions and thereby enhancing the fire. Within a week the fire was 100% contained; however crews from around the state remained working to build fire lines and contain hot spots that might flare up. This fire threatened homes in the Wampee Community of Horry County, but none were damaged. During the duration of the fire, eleven homes were evacuated and one firefighter was taken to the hospital for dehydration.

The largest forest fire in South Carolina history occurred in Horry County in 1976. Caused by an unattended campfire, the fire raged for 5 days. More than 100 firefighters were needed to bring the 30,0000-acre blaze under control. Unconfirmed reports indicate that a much larger wildfire outbreak may have burned up to 3 million acres of forestland and caused several deaths in 1898.

The Highway 31 Wildfire that affected our area on April 22, 2009 was federally declared: FEMA-2816-FM-SC. The fire threatened residential areas and forced over 2,500 residents from their homes.

During the 2002 fiscal year, the unincorporated areas of the County had two federally declared fires: Long Bay Fire (FEMA 2388-EM-SC), and the Legends Fire (FEMA 2426-FS-SC). Both of these fires threatened residential areas and forced the evacuation of residents.

All three fire declarations that happened were in the areas of dense vegetation and occupy approximately 140,310 acres of the county. The three areas are comprised of mostly pine overstory with heavy palmetto understory. The areas affected by the fires also share a similar pocosin soil type. In addition to the natural factors that affect the wildfire risk there are also man-made issues. For instance, the rapid growth of the county's urban areas are impinging on these dense vegetation areas, which cause a high fire hazard. The South Carolina Forestry Commission has implemented a WUI (Wildland Urban Interface) Coordinator to help develop and promote the Federal Firewise USA® Program. WUI as a definition is the area where structures and human development meet and intermingle with wild land or vegetative fuels. With an increase in population the WUI substantially increases the risk to communities from wildfire. There are currently 15 communities and subdivisions in Horry County participating in the National Firewise USA® Program through the help of the South Carolina Forestry Commission *(see map following this section).* The Firewise USA® program is developed to help communities mitigate their risk for wild fires through up fitting existing structures and new construction with better material and landscaping choices; as well as maintenance and care for surrounding wildland. There will be two additional maps below that will illustrate this risk. The maps were obtained from the Southern Wildfire Risk Assessment. They illustrate the WUI Risk for Horry County and the Burn Probability for the county. Also the map of the City of Conway has been reviewed for correctness in depicting its high vegetation areas. According to past records and the Fire Chief, the City of Conway has not had a wildfire in recent history.

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In a study done by the South Carolina Emergency Management Division, *State of South Carolina Hazards Assessment, December 2009, Horry* County, including the participating jurisdictions, was ranked as the eleventh most vulnerable county in South Carolina for wildfires. March is historically the worst month for wildfires. The majority of South Carolina wildfires are caused by debris burning (30- 35%) and arson (40-45%). There is a distinct geographic burn pattern. The Midlands and Piedmont regions have smaller fires, while the outer coastal plain and the coastal counties have larger fires.

Summary and Conclusion of the Wildfire Profile

According to South Carolina Forestry Commission, the 50 year annual average for Horry County is roughly 233 wildfires in a year and approximately 3,016 acres burned.

Based on South Carolina Forestry Commission historical data, a wildfire has occurred multiple times a year in Horry County. This is calculated by dividing the number of years examined (65) by the number of occurrences (15712). The probability of risk is 100% and is determined by the number of years in which one or more wildfires occurred (65) divided by the number of years examined (65).

Based on available historical information the anticipated "*Frequency of Occurrence*" of future wildfires is rated as ***"Highly Likely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

Based on available historical information the probable "*Consequence of Impact*" of future wildfires is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for wildfires in Horry County is ***3"(Medium).***

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Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Wildfire	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Horry County fire season runs from January through mid-April. March is frequently the busiest month for wildfires.

AREAS LIKELY TO BE AFFECTED MOST
Although all of Horry county is susceptible to wildfires, there is a distant geographical burn pattern. The majority of wildfires happen in areas of dense vegetation near and surrounding the Carolina Forest Area.

PROBABLE DURATION
Wildfire duration above ground is roughly days; however wildfires in Horry County can continue to burn for months 6-8 feet underground due to the peat moss.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• National Weather Service • South Carolina Forestry Commission • Horry County Fire/Rescue • Horry County Emergency Management

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Consequence Analysis	
HAZARD: Wildfire	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critic al	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

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Consequence Analysis	
HAZARD: Wildfire	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

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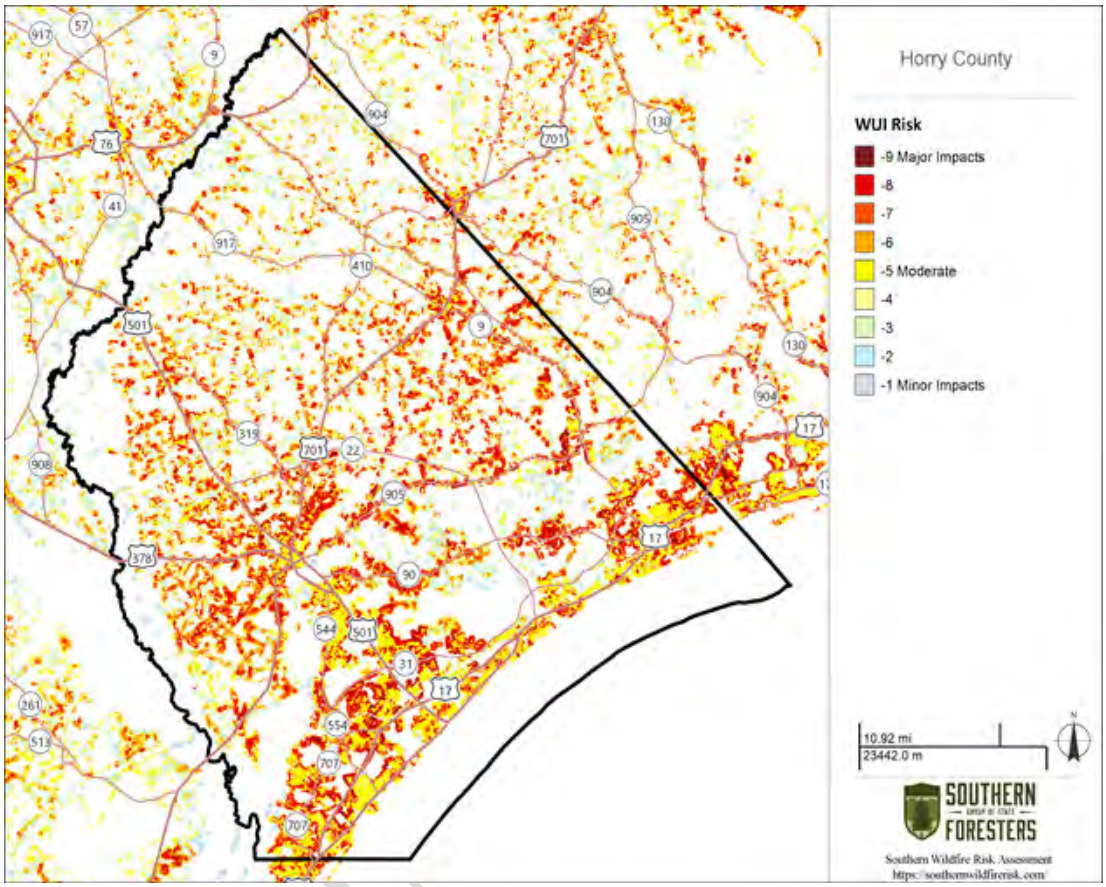

WUI Risk-Southern Wildfire Risk Assessment
Map Provided by South Carolina Forestry Commission (South WRAP)

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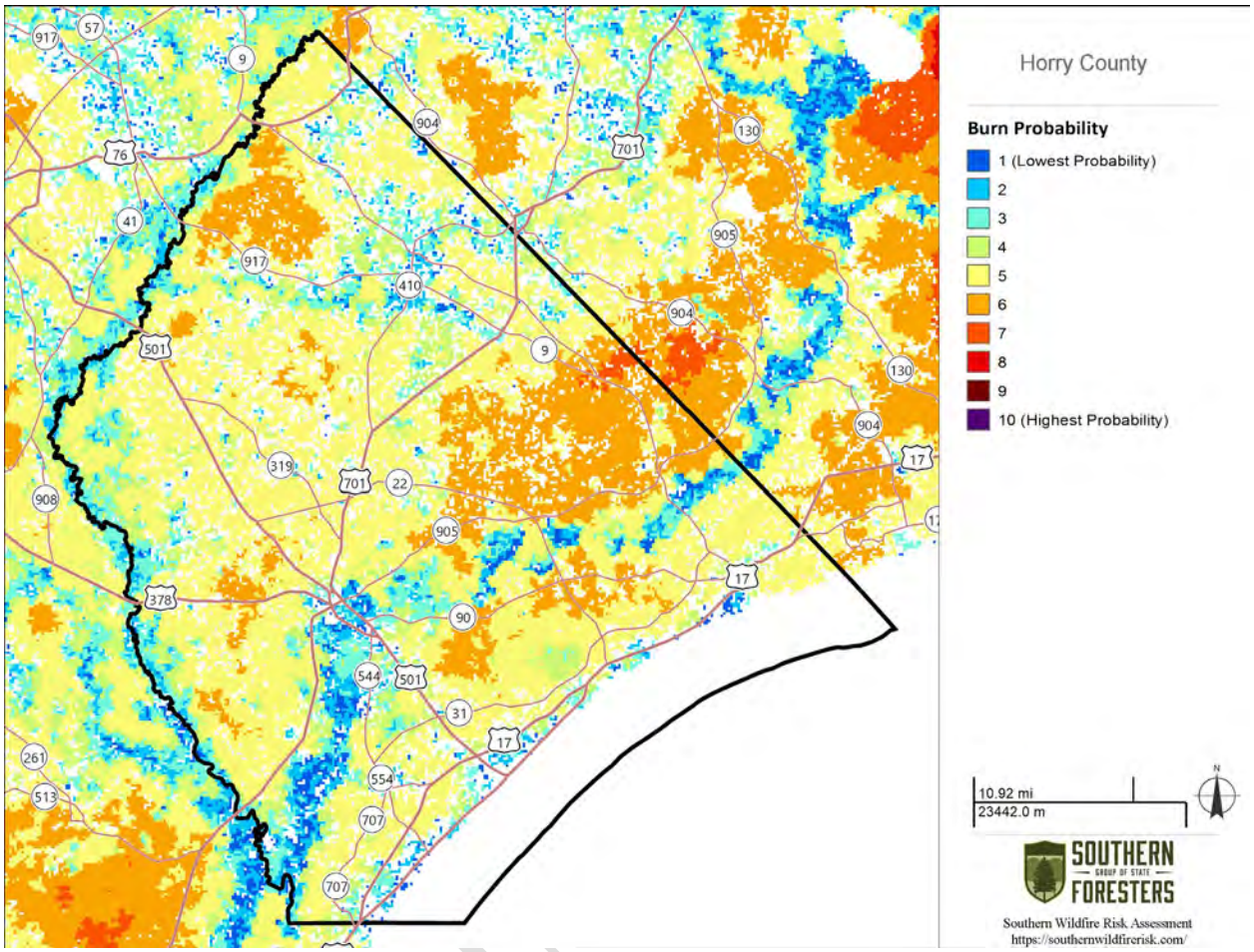

Burn Probability-Southern Wildfire Risk Assessment
Map Provided by South Carolina Forestry Commission (South WRAP)

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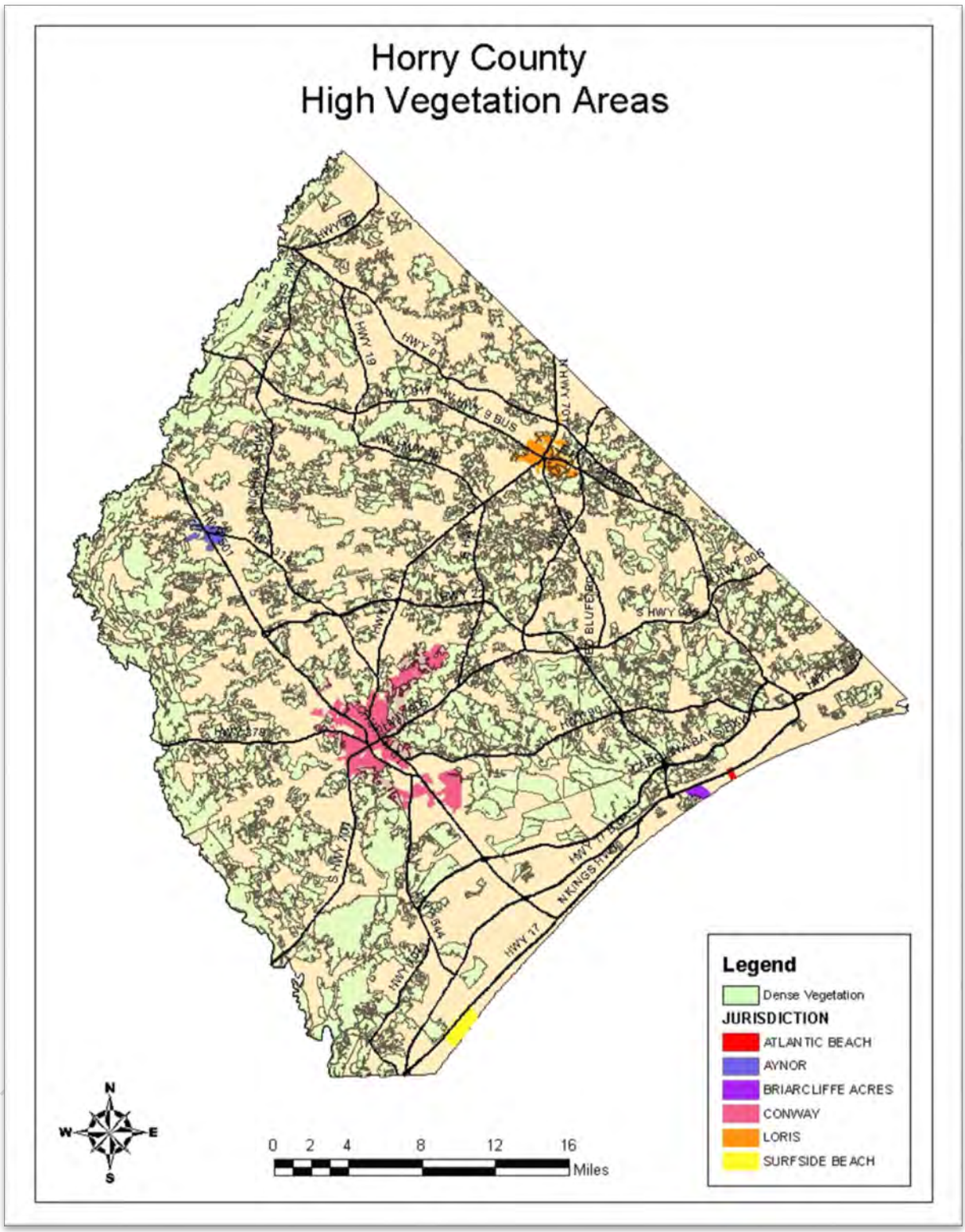
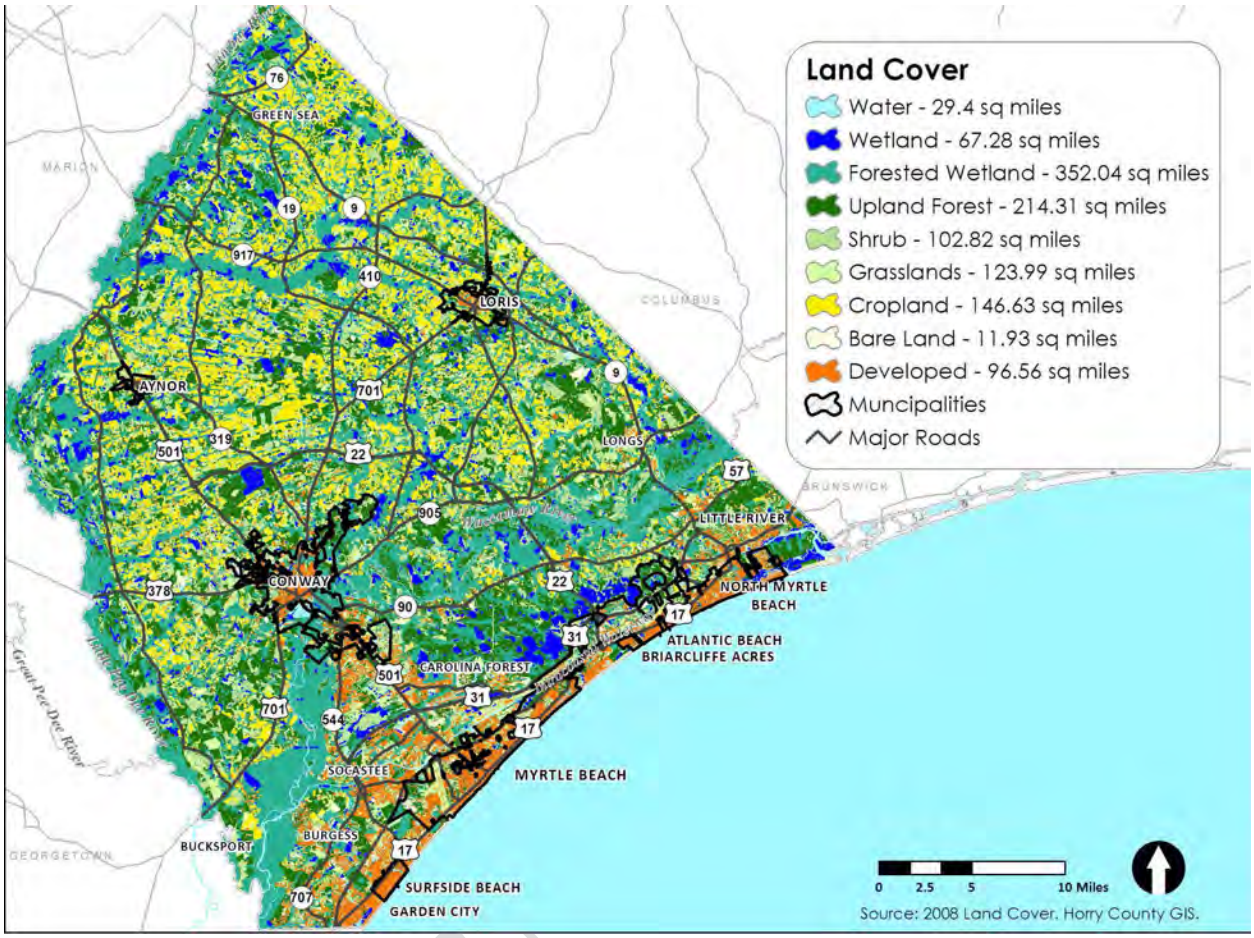
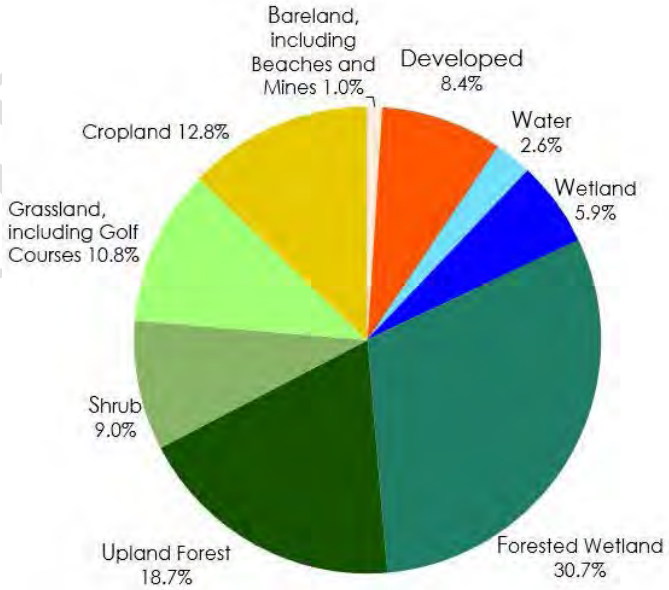
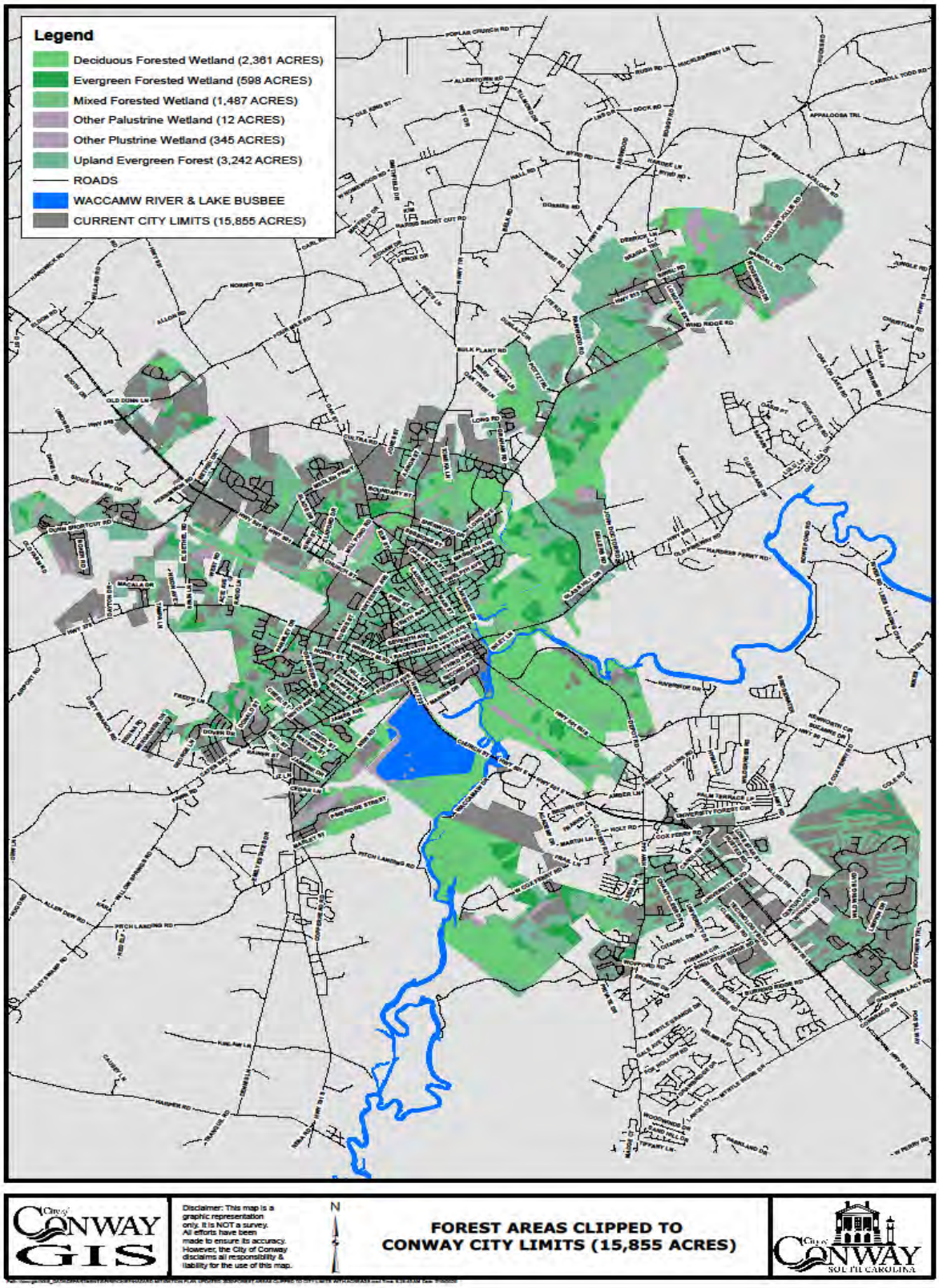


Map Generated by Horry County GIS Department

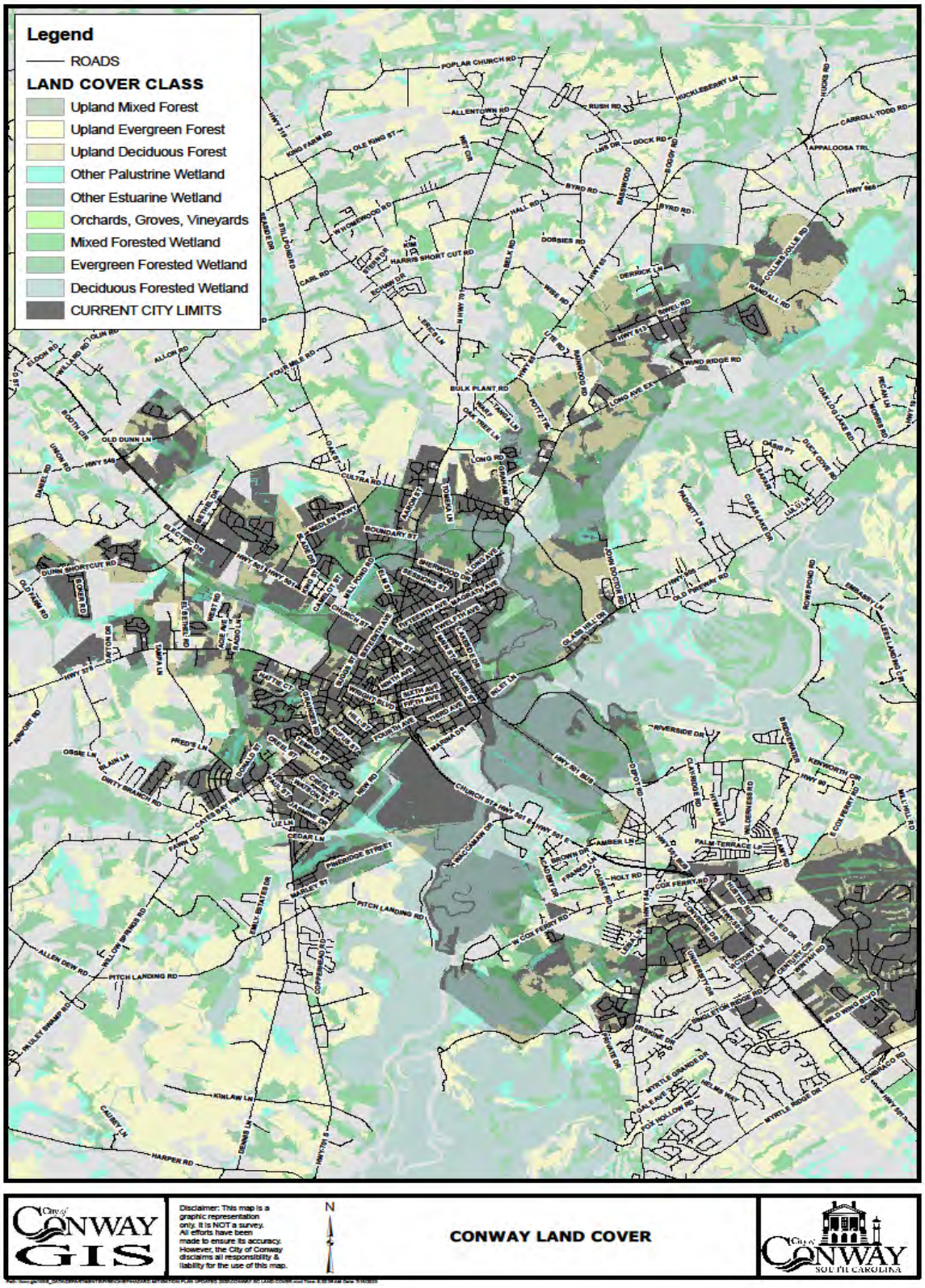




Land Cover Distribution in Horry County

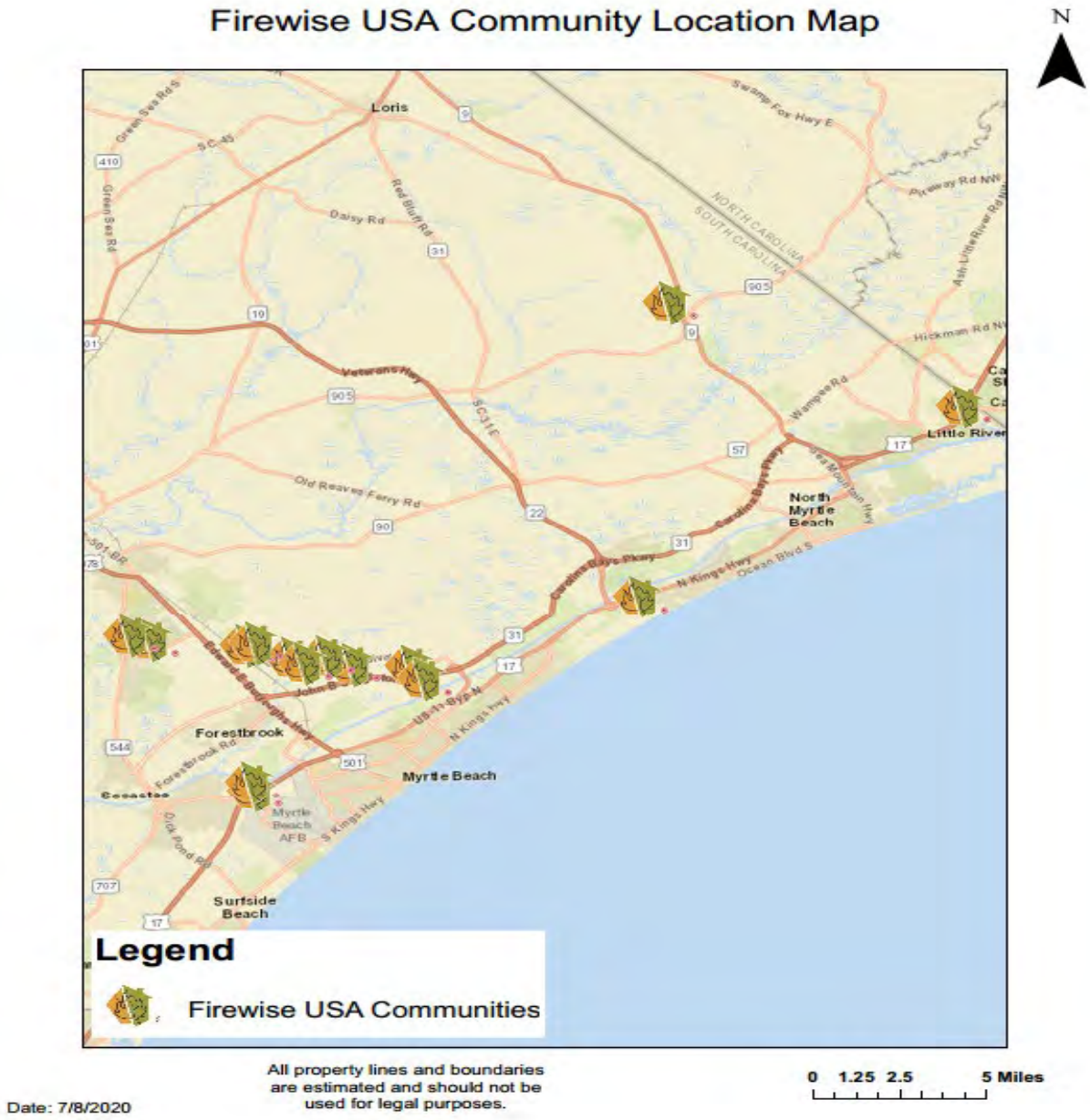


Map Provided by the City of Conway

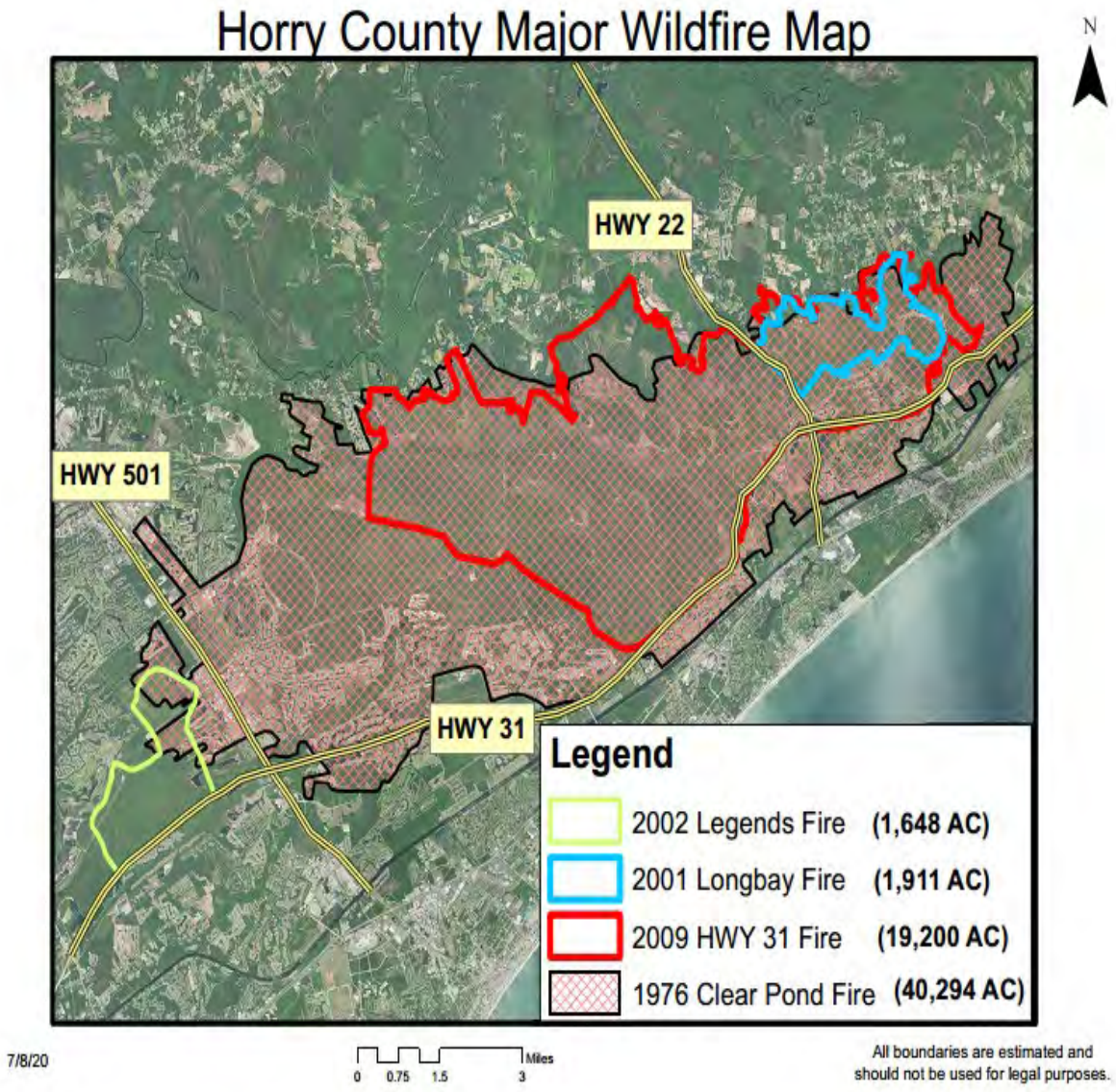


Map Provided by the City of Conway

Map of Hwy 31 Fire Burn Area
Map Generated by Horry County GIS Department



Map Provided by South Carolina Forestry Commission



Map Provided by South Carolina Forestry Commission

3.2.5 FLOODING

The planning team reviewed and analyzed this section of the plan in January 2015 and again in June 2020 to verify the information to make sure it was up to date and relevant. At that time the maps were reviewed by each jurisdiction and updated as necessary.

Definition

Floods are one of the greatest natural disasters known to mankind. Flooding occurs when water accumulates faster than soil can absorb it or rivers can carry it away. Floods are a temporary overflow of water onto lands not normally covered by water and that are used or usable by man, producing measurable property damage/destruction or forcing evacuation of people and vital resources.

Generally floods are the result of excessive precipitation, and are classified under two categories: **Flash flood** which is heavy localized precipitation in a short time period over a particular location and **general flooding**, which is caused by precipitation over a longer time period and over a given geographical area. The severity of a flooding event is determined by a combination of stream and river basin topography, precipitation and weather patterns, recent soil moisture conditions and the degree of vegetative clearing from the streams and rivers.

Flood discharges and elevation: The USGS has a network of 11 stream flow gauging stations that provided information on the rising floodwaters. The two gauges listed below are forecast points in the National Weather Service River Forecast System. These gauges gather data to forecast river levels and help to provide warning services in the event they are expected to exceed flood stage. This came out of the heavy rain associated with Hurricane Floyd. This real-time information was indispensable for Horry County Emergency Management and the rapid communication of flood information to National Weather Service river forecast centers, the U.S. Army Corps of Engineers, and the Federal Emergency Management Agency.

1. USGS 02110704 Waccamaw River at Conway Marina at Conway, SC
   Hydrologic Unit Code 03040206
   Latitude 33°49'47", Longitude 79°02'38" NAD27
   Drainage area 1,440 square miles
   Gage datum -5.06 feet above NGVD29

2. USGS 02135000 Little Pee Dee River at Galivants Ferry, SC
   Hydrologic Unit Code 03040204
   Latitude 34°03'25", Longitude 79°14'50" NAD27
   Drainage area 2,790 square miles
   Gage datum 23.95 feet above NGVD29

Station Number	*Station Name*
02110400	*BUCK CREEK NEAR LONGS, SC*
02110500	*WACCAMAW RIVER NEAR LONGS, SC*
02110550	*WACCAMAW RIVER ABOVE CONWAY, SC*

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02110701 CRABTREE SWAMP AT CONWAY, SC
02110704 WACCAMAW RIVER AT CONWAY MARINA AT CONWAY, SC
02110725 AIW AT HIGHWAY 544 AT SOCASTEE, SC
02110777 AIW AT HIGHWAY 9 AT NIXONS CROSSROADS, SC
02110802 WACCAMAW RIVER AT BUCKSPORT, SC
02134900 LUMBER RIVER AT NICHOLS,SC
02135000 LITTLE PEE DEE R. AT GALIVANTS FERRY, SC
02135200 PEE DEE RIVER AT HWY 701 NR BUCKSPORT, SC

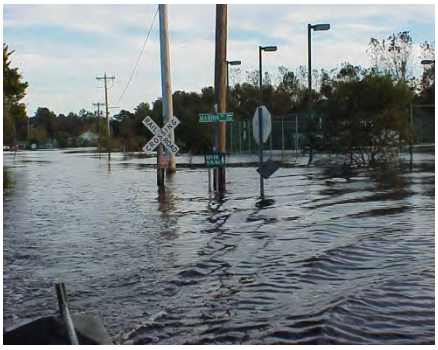
Stream flow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "stream flow" uniquely describes the discharge in a surface stream course. The term "stream flow" is more general than "runoff" as stream flow may be applied to discharge whether or not it is affected by diversion or regulation.

Gauge depth is the water-surface elevation referenced to the gauge datum. Gauge depth is often used interchangeably with the more general term "stage," although gauge depth is more appropriate when used with a reading on a gauge. Below is a table describing floodwater effects, which is based on the Conway river gauge on the Waccamaw River, obtained from the National Weather Service in Wilmington.

STAGE	Areas Affected
4.50	Bankfull stage, no damage.
7.00	Minor flooding. Flooding of swamps and natural boat lands will occur.
8.00	Moderate flooding. Flooding occurs at some warehouse and at the city along the south portion of the right bank. Swamps heavily flooded.
9.00	Moderate flooding of secondary road/Business 501 and highway 905 to the east. Floodwaters will affect 20 homes in the Savannah Bluff area with water 1 foot deep in some. Floodwaters will also affect a few homes on Oak Street and Pitch Landing.
10.00	Major flooding. Floodwaters affect residences and roads in the Lees Landing, Savannah Bluff, Pitch Landing, Jackson Bluff, and Bucksville areas.
11.00	Major flooding. Flooding will worsen in residential areas while flooding also occurs in the basement of the Government Building at 4th Avenue and Kingston. Conway Marina will flood and railroad trestles will flood at 11.5 feet.

Source: National Weather Service

History of Flooding



According to the National Center for Environmental Information (NCEI), Horry County and the participating jurisdictions have experienced 29 flood events since 1955. One of the most diverse was Hurricane Floyd, which brought three different floods to Horry County. During the storm, the intense rainfall could not drain away faster than it collected, flooding yards, parks, intersections, parking lots, building entrances and low lying areas. This water drained away as the rainfall

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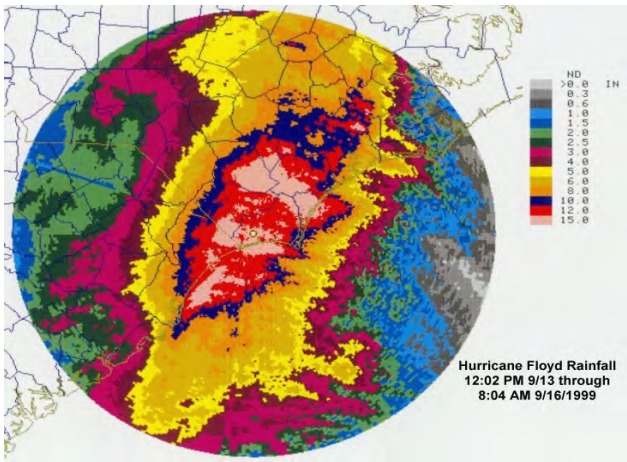
intensity decreased.

The second flooding event occurred in mostly the City of Conway on the following day as the Crabtree Swamp watershed responded to the large rainfall. Because this is a relatively small watershed, the runoff from Floyd's rain caused water to rise quickly. Since the Waccamaw River was still low, Crabtree Swamp drained quickly. Homes along the Swamp in the north part of the City were only flooded for a few hours. (Conway, FHMP-1999). The third flooding event started a few days after the storm when the runoff from the Waccamaw River watershed caused the river to rise.

Due to the fact that the Waccamaw watershed is so large and flat, it took days for the storm water runoff to collect and flow into the river. This flood had the added hazard of water that had been polluted by farm runoff that included livestock waste. The water was much dirtier and more noxious than the water in the other two floods. And it stayed in or under buildings for up to 45 days. It also flooded several sewer pump stations, including those that serve the Horry County Emergency Operations Center and the County Dispatch Center.



Hurricane Floyd brushed the eastern South Carolina coast and made landfall near Cape Fear, North Carolina on *September 16, 1999*. Up to 18-inches of rainfall was recorded in parts of Horry County. Record flooding was documented at gauging station 02110500 located at the Waccamaw River near Longs, S.C. The peak discharge was about 1.6 times higher than the 100-year flood recurrence interval discharge.

Flood loses: The full extent of the impact of Hurricane Floyd can never be completely measured due to secondary impacts that may never be recorded, but following is an overview of the impact this storm had in Horry County.

- More than 1,700 homes were damaged. Of those over 200 homes were substantially damaged which qualified them for assistance under the Hazard Mitigation Grant Program.
- An estimated 300 more homes had water in or near the crawlspaces but did not suffer any structural damage. However, many received damage to their outside air conditioning units, garages, and/or landscaping.
- Several sewer lift stations were damaged by flooding, in spite of a major sandbagging effort.
- Over 25 streets and bridges were closed. Backups of several miles were common on the state highways during the flood.
- An untold number of families and businesses were disrupted due to direct flood damage or closing of the streets.
- There were very few reports of health problems, in spite of the heavily polluted water.

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- An estimated $45 million in adverse economic impact to Horry County in tourism and business dollars. (*Myrtle Beach Chamber of Commerce)*

From 2015-2019 Horry County would experience flooding events each year. Flooding from the remnants of Joaquin would affect the area in 2015, Hurricane Matthew 2016, Hurricane Irma 2017, Hurricane Florence, 2018 and Hurricane Dorian 2019. Following the fragments of Joaquin, Horry County received in excess of 20 inches of rain in 48 hours which overburdened drainage capabilities throughout the county resulting in flash flooding and ultimately the third highest crest on record for the Waccamaw River. Excessive rainfall once again caused record breaking flooding from Hurricane Matthew in 2016 and the National Weather Service in Wilmington issued its first-ever flash flood emergency for Horry County as flooding became widespread and life-threatening. Hurricane Florence in 2018 produced heavy rains throughout the County for 3 days and rain totals in the Loris area reached 23.63 inches causing major flooding issues. Brush trucks, small boats and the National Guard high-water vehicles were utilized to help get over 100 residents out of their flooded homes. In addition to residential homes being effected, Loris City Hall also had extensive damage as a portion of the roof collapsed due to the rainfall. The flood from Florence set the new record in Conway of 21.16 feet also surpassing the old record of 17.89 feet set by Hurricane Matthew. There were 1,941 homes impacted and the reported cost of damage from Hurricane Florence flooding was $41.5 Million in Horry County. Hurricane Dorian in 2019 produced heavy periods of rain, but not to the extent experienced in the prior two storms. Some low lying areas of the County experienced flash flooding. More details regarding the effects of these storms are discussed in Section 3.2.1 Hurricanes.

The Task Force discussed the main potential causes for flooding in the our area and jurisdictions and agreed most of the flooding would be a result of a slow moving tropical system which could potentially dump large amounts of rainfall in a specific location overwhelming that area and the obvious storm surge inundation of the waterways and rivers. The other potential is due to a rise in a watershed which could cause fresh water flooding along the banks of the Waccamaw and Pee Dee River and their tributaries. The Mitigation Plan Task force understands the importance of natural floodplain functions and the need to preserve these areas and prevent additional structures from being built in these areas. The limitations on this type of mitigation are controlled by building codes and the local ordinances. The County and its participating jurisdictions provide educational and outreach materials for those individuals who inquire about Special Flood Hazard Areas and flooding as well as require elevation certificates for those people building or making substantial improvement in the SFHA.

The group also discussed less frequent flood types that might affect the area. One of those discussed was localized flooding attributed to a large wildfire. Although Horry County has had several significant wildfires with an associated loss of vegetation, fortunately there have been no flooding impact. However, the task force discussed there could be a small potential for impact. Anytime you have a significant wildfire burn the vegetation and understory in an area the ground cannot absorb the water as easily or rapidly and thus can cause more localized flooding. Those properties that are most affected by fires or are downstream from them are at the most risk for this type of flooding.

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Summary and Conclusions of the Flooding Profile

Per NCEI, in the past 25 years (1995 – 2020), Horry County and participating jurisdictions have experienced 29 flood events. These floods have accounted for more than $30 million dollars in property damage and $108,000 dollars in crop damage.

Based on the NCEI historical data, a flood has occurred every 0.86 years in Horry County. This is calculated by dividing the number of years examined (25) by the number of occurrences (29). The probability of risk is 24% and is determined by the number of years in which one or more flood occurred (6) divided by the number of years examined (25).

Based on available historical information the anticipated "Frequency of Occurrence" of future flooding is rated as ***"Highly Likely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

Based on available historical information the probable "Consequence of Impact" of future flooding is rated as ***"Limited"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for flooding in Horry County is ***"3" (Medium).***

The NCEI flood data was not collected prior to 1994. However, crest data has been documented for Horry County as far back as 1901.

The proceeding maps show the existing flood zones for Horry County and participating

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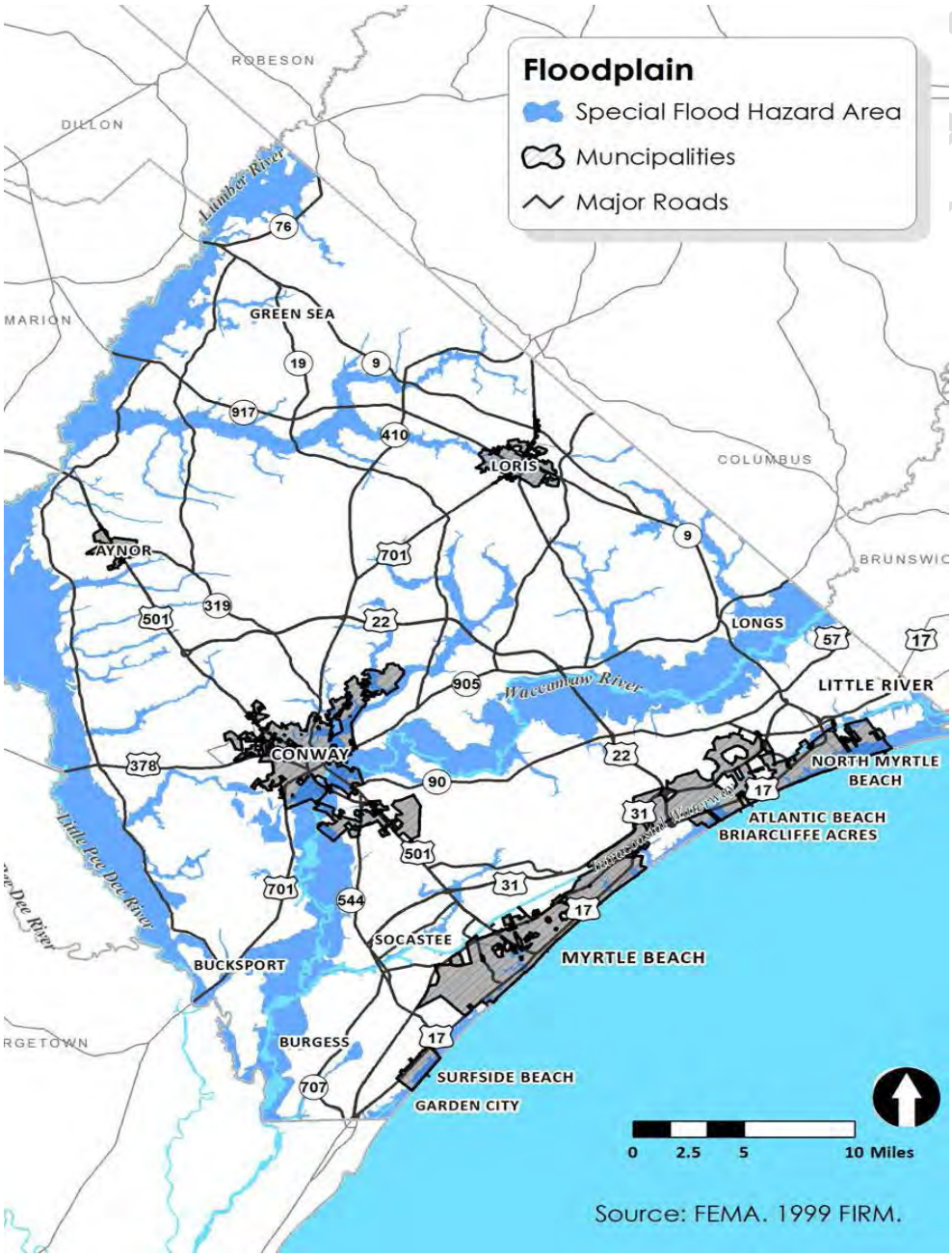
jurisdictions according to FEMA's Flood Insurance Rate Map (FIRM). In addition to the data from FEMA, the Mitigation Task Force members recognized flooding problem areas that exist outside of the Special Flood Hazard Areas as well. The City of Conway, the City of Loris and Grand Strand Water and Sewer Authority all identified flood prone areas based on past experiences that are illustrated in the maps following this section. Task Force members know from the history of these areas that these problem areas also need to be considered when developing strategies and goals related to flood mitigation projects. These areas primarily pertain to flash flooding and riverine flooding that occurs and damages roadways, bridges, and personal property.



Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Flood	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Intense coastal storms normally occur during the fall through early spring, but may occur anytime. In recent years, minor coastal flooding has occurred with astronomically high tides. Frequent precipitation increases the probability of flooding in Horry County, as soils become saturated and are unable to absorb additional water.

AREAS LIKELY TO BE AFFECTED MOST
Along the 30 miles of ocean front and along the river banks of the Waccamaw and the Little Pee Dee Rivers. Flooding could occur at the banks of the Atlantic Intercoastal Waterway.

PROBABLE DURATION
Generally flooding can last from a few hours to days and in some cases even exceeding a month in duration. When excessive rainfall is experienced in the area or along the impacting watersheds, flooding can occur.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning. **does not include localized and flash flooding	• National Weather Service (NWS) • U.S. Geological Survey (USGS) • Horry County Emergency Management • Horry County Stormwater/Engineering

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Consequence Analysis	
HAZARD: Flood	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Flood	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

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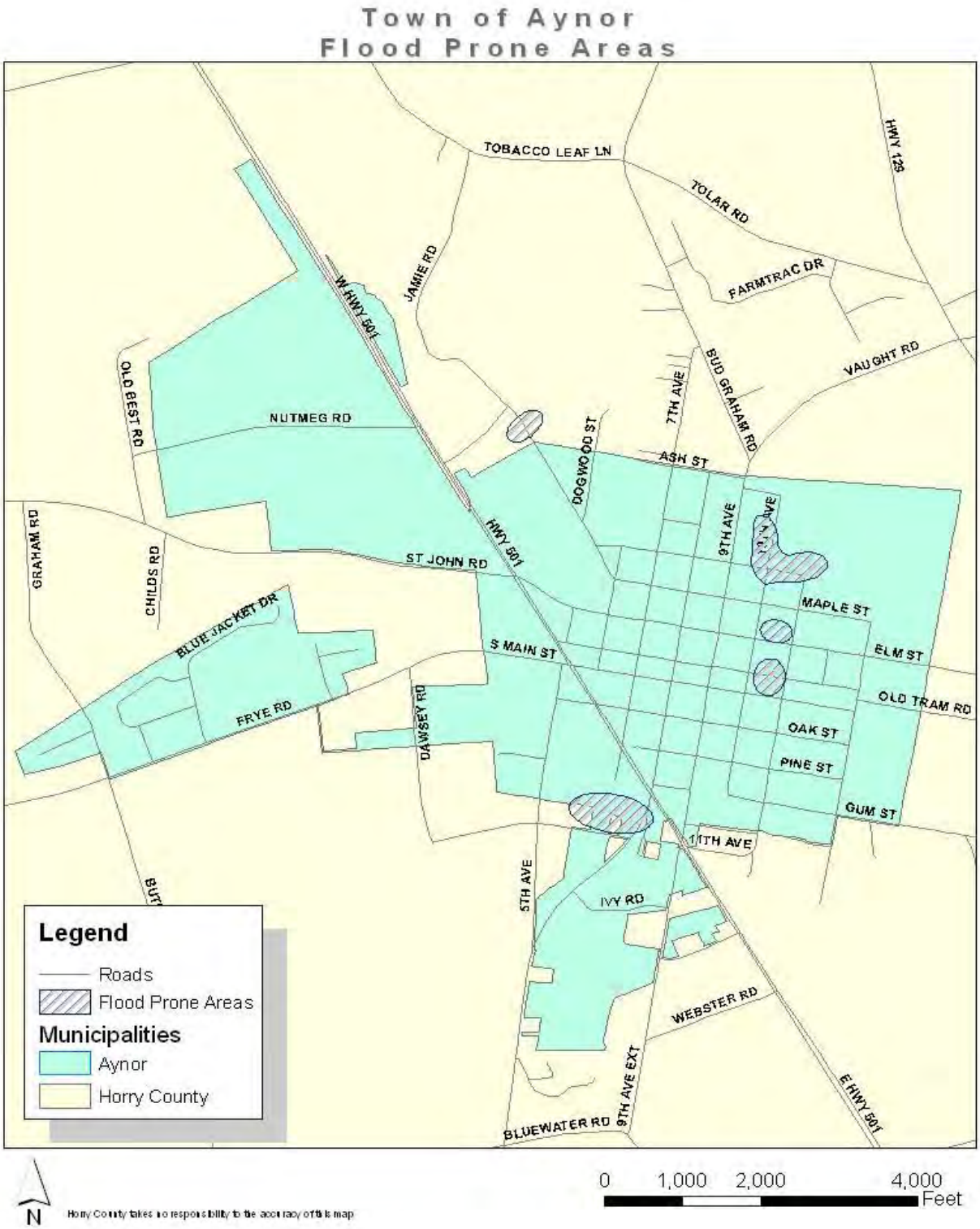
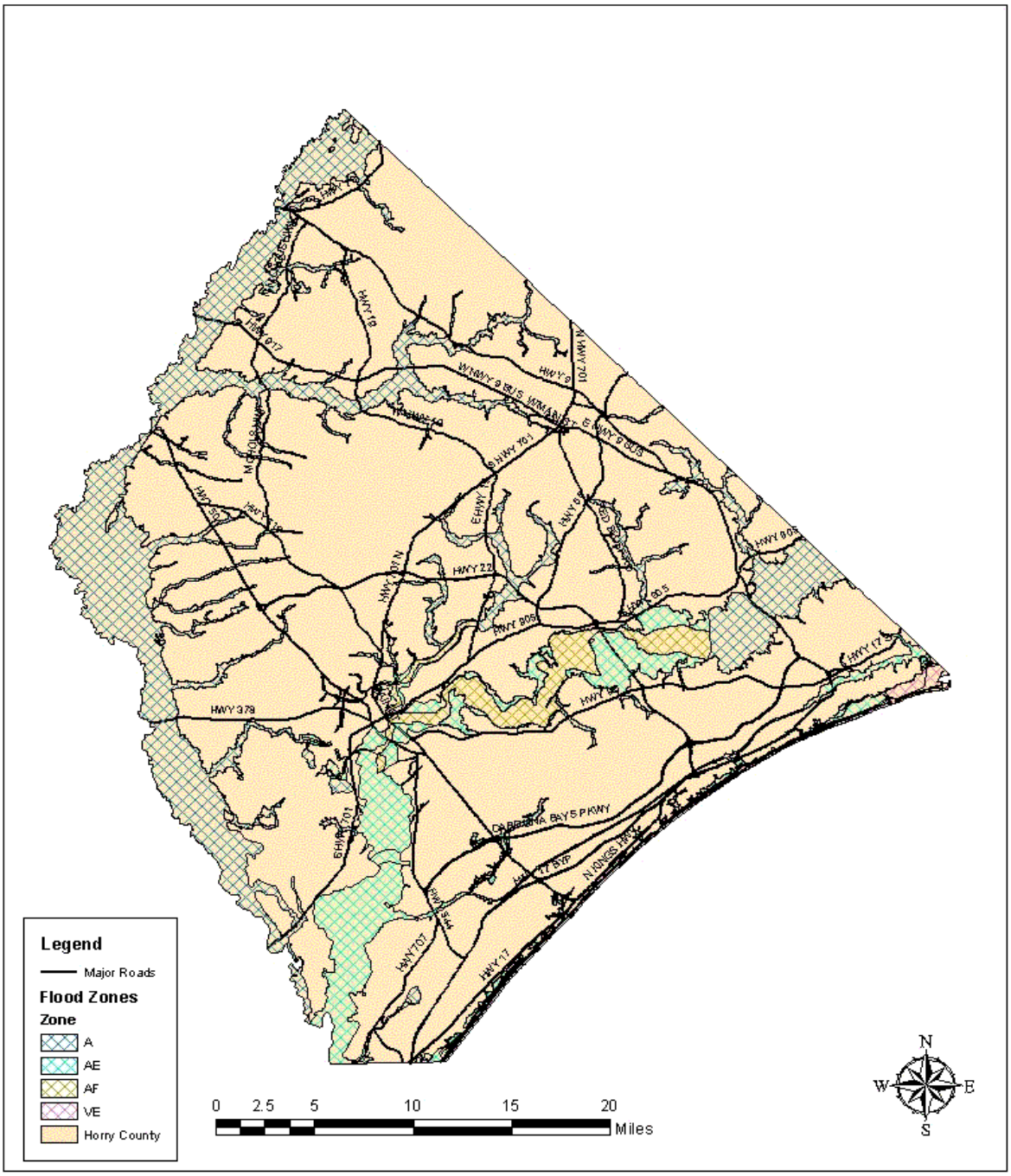


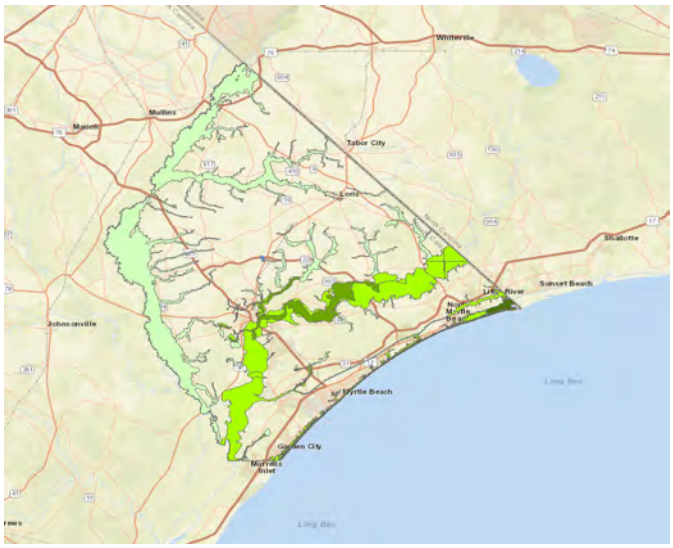
Map Provided by the Town of Aynor

Horry County, South Carolina
Existing Flood Hazard

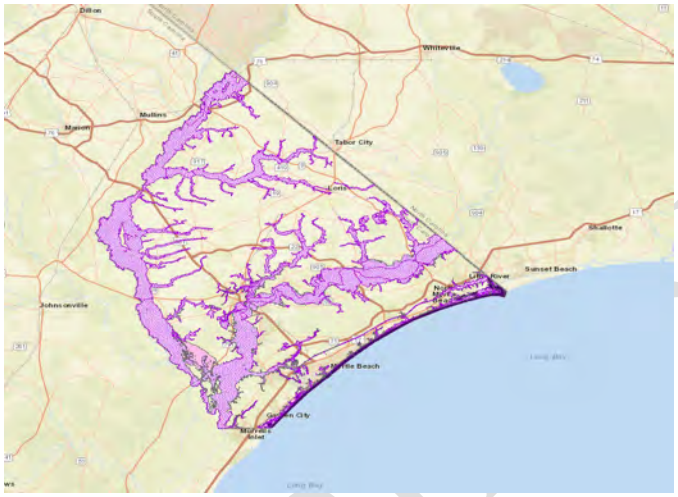


Map Generated by Horry County GIS Department

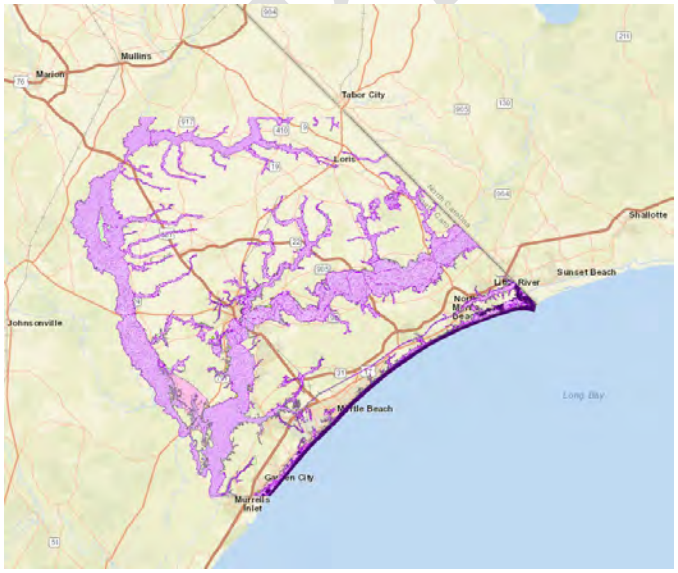
HORRY COUNTY FEMA FLOOD MAPS (Horry County GIS)



Current Flood Zones (1999)



Proposed Flood Zones (process of being updated)



Overlay of Current and Proposed

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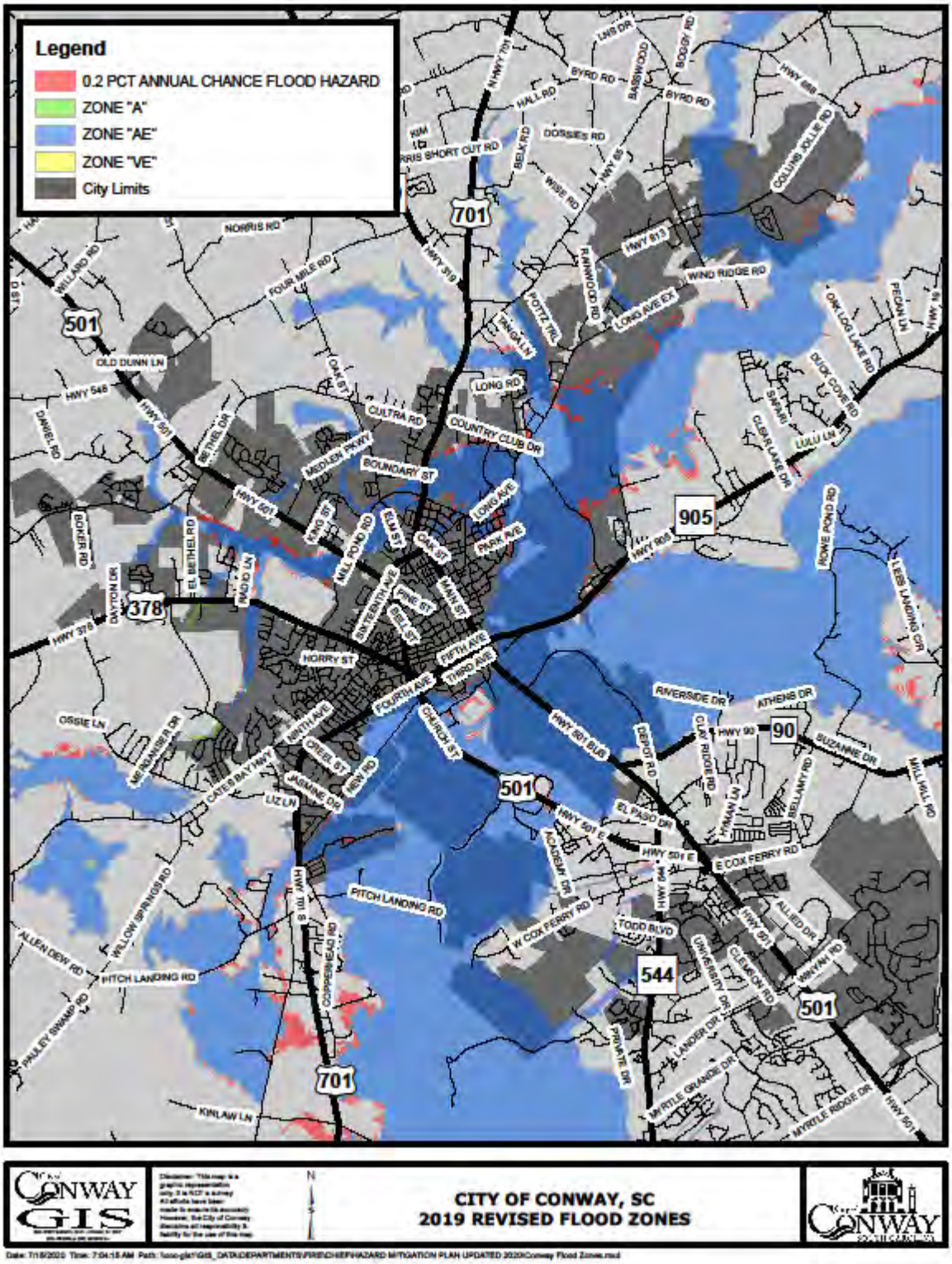
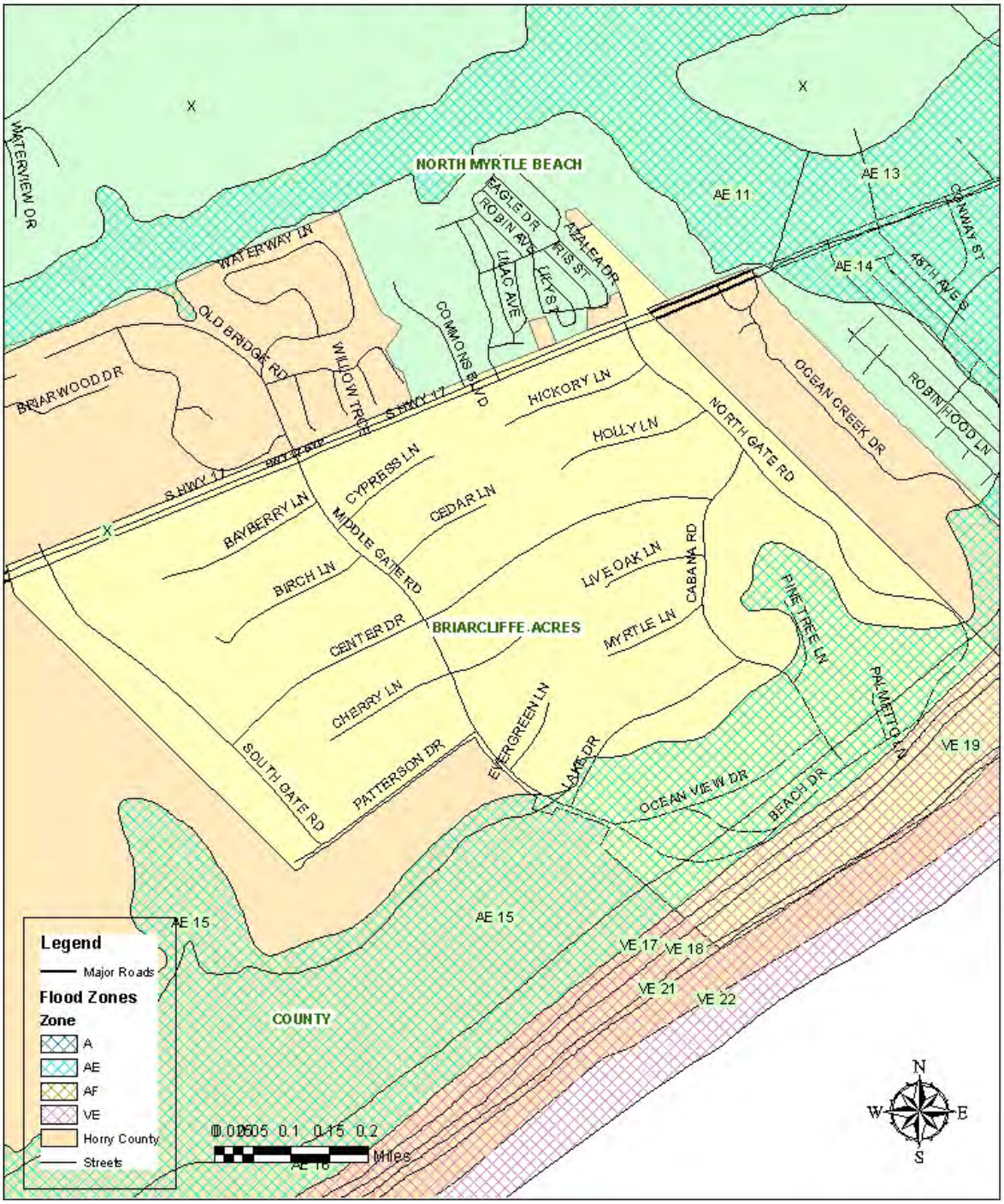


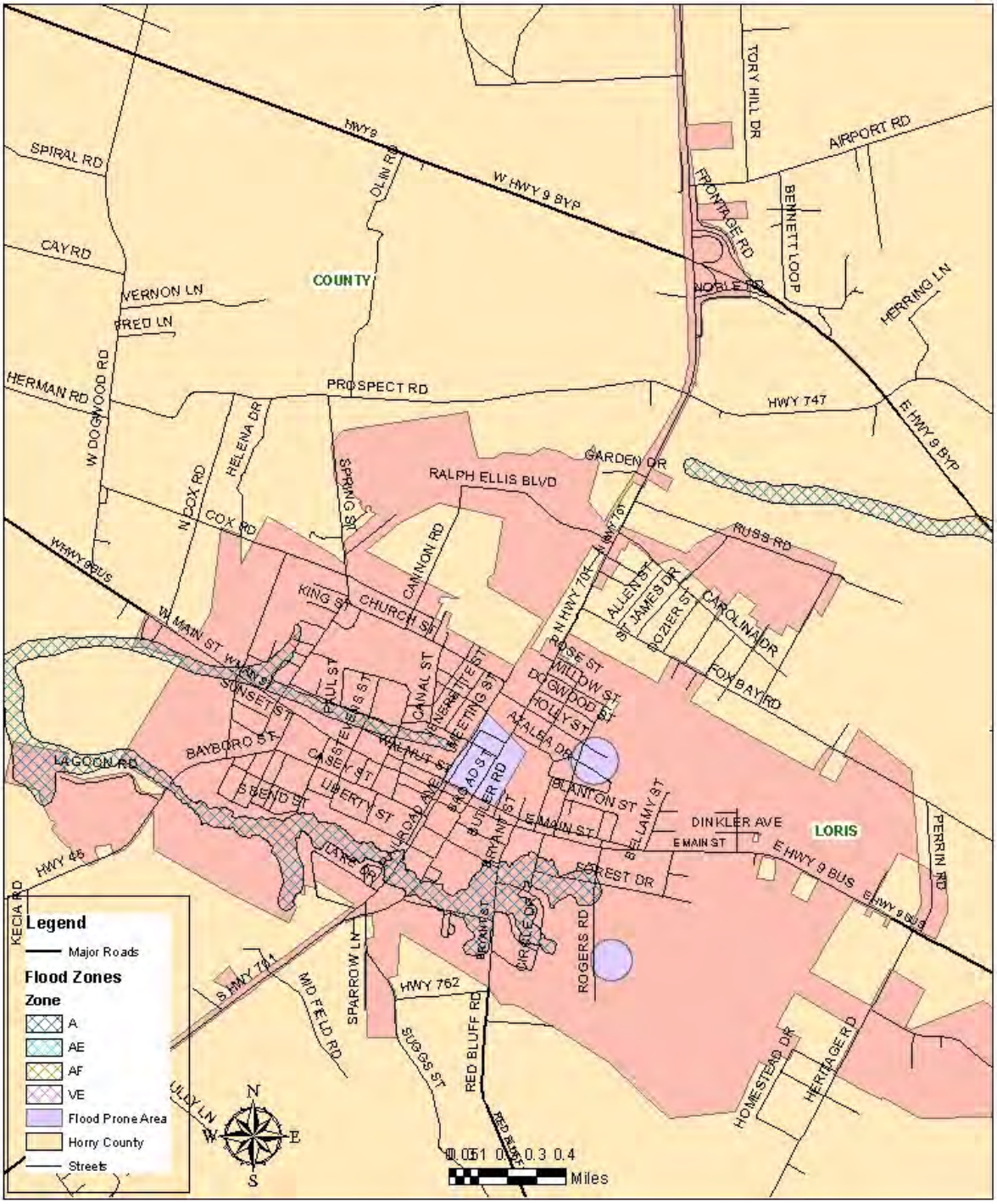
Map Provided by the City of Conway

Briarcliffe Acres, South Carolina
Existing Flood Hazard



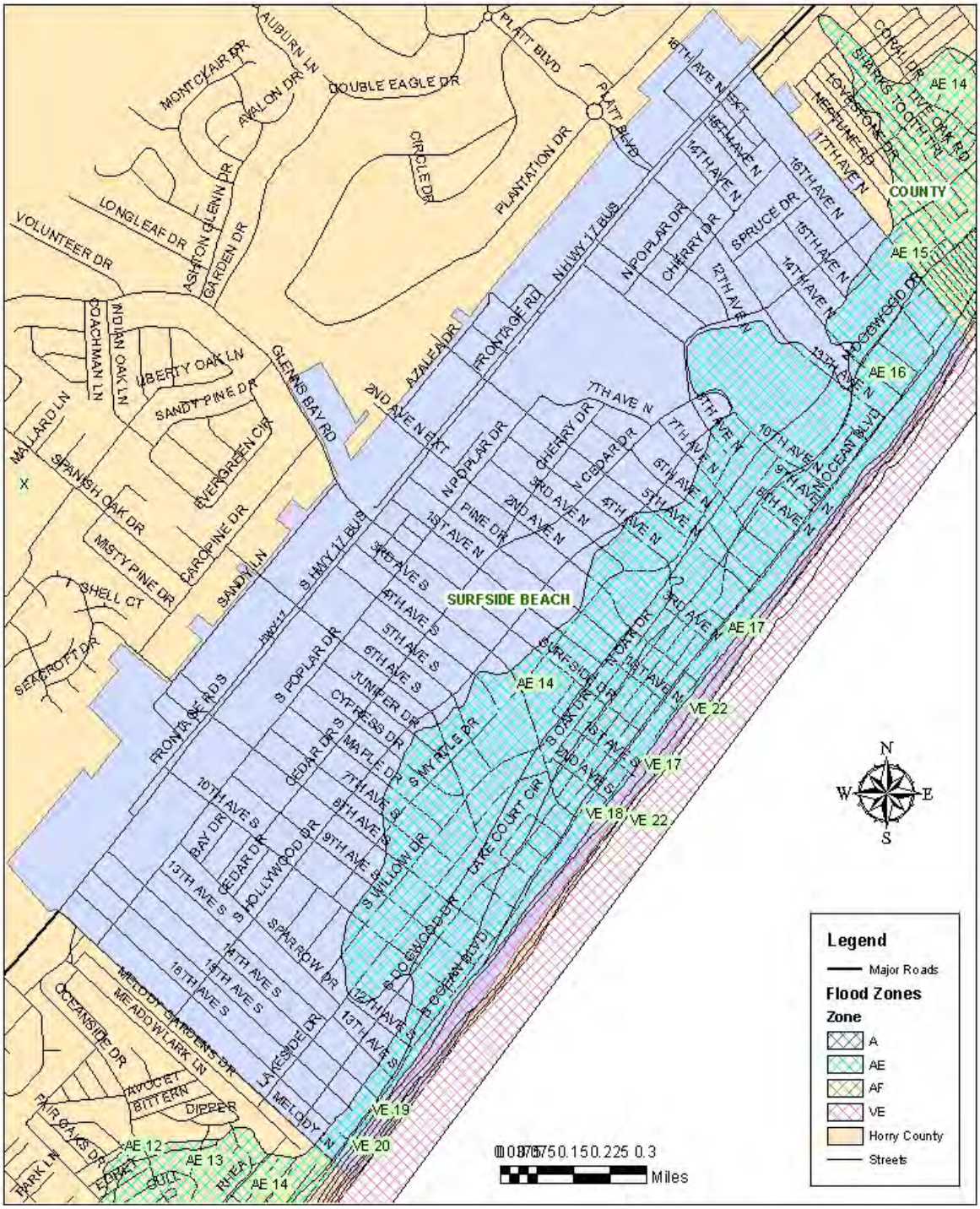
Map Generated by Horry County GIS Department

Loris, South Carolina
Existing Flood Hazard



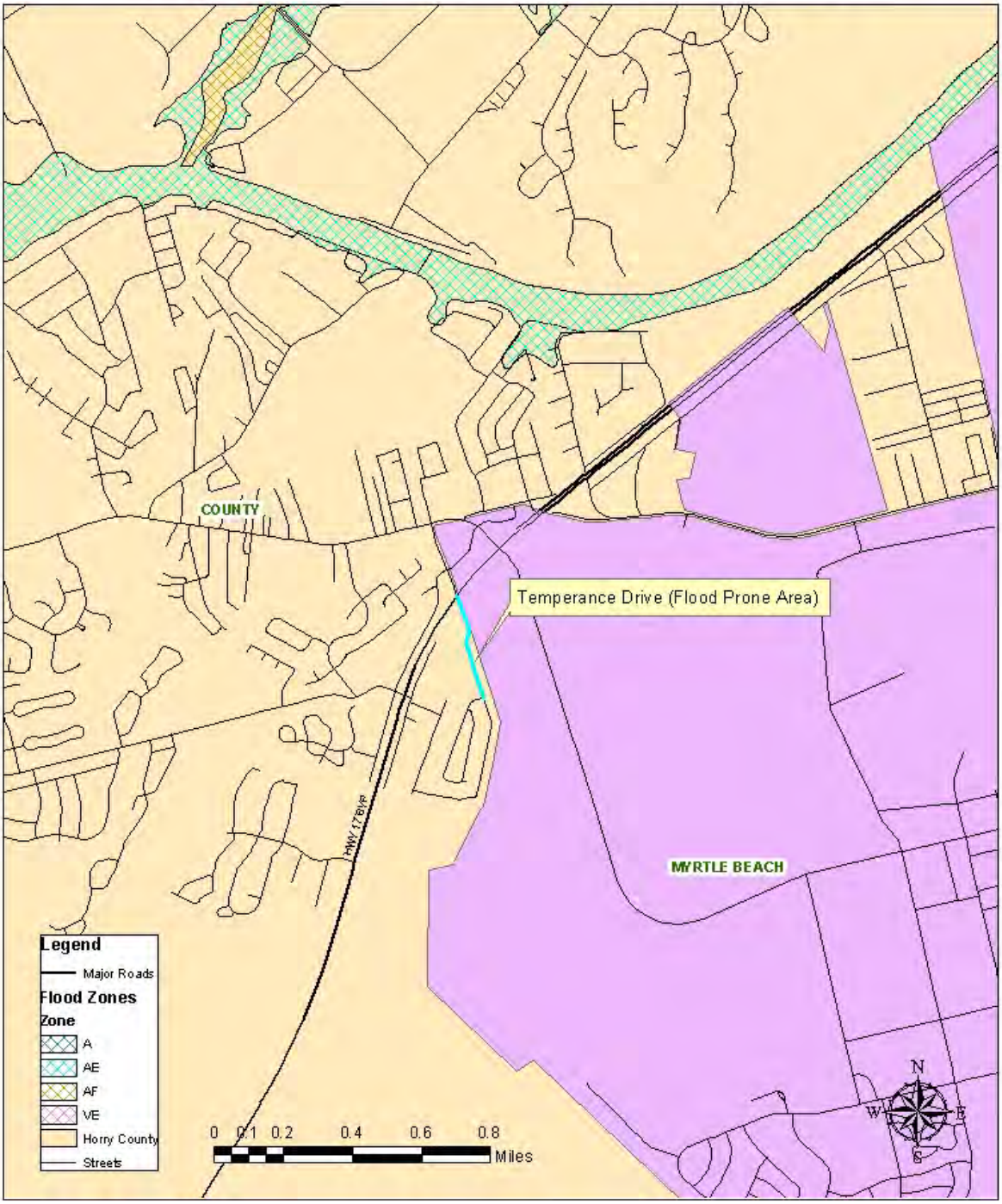
Map Provided by the City of Loris

Surfside Beach, South Carolina
Existing Flood Hazard



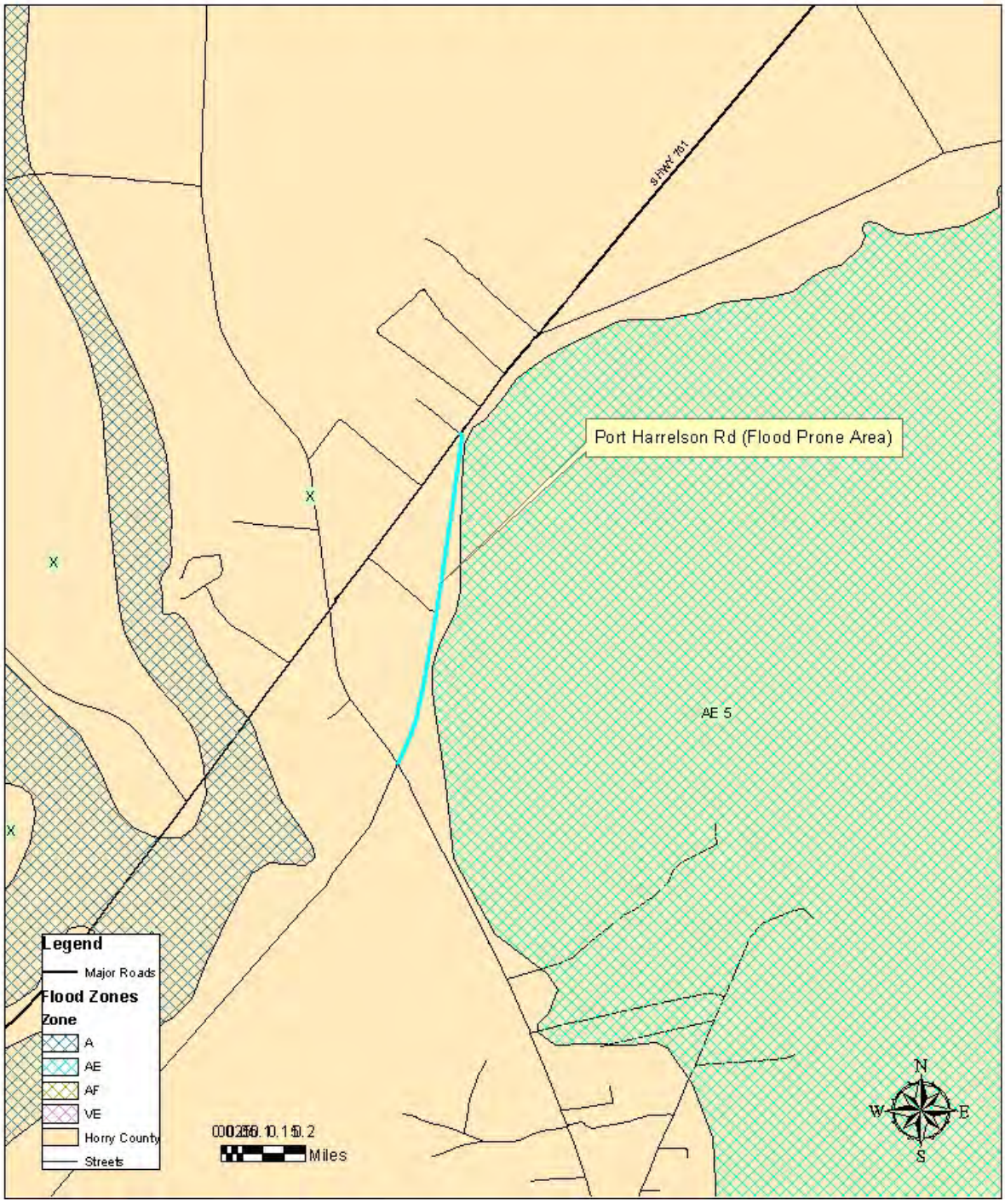
Map Provided by the Town of Surfside Beach

Horry County, South Carolina
Grand Strand Water and Sewer



Map Generated by Horry County GIS Department

Horry County, South Carolina
Grand Strand Water and Sewer



Map Generated by Horry County GIS Department

3.2.6 TORNADO

The planning team has reviewed and analyzed this section of the plan in January 2015 and June 2020 and verified the information to make sure it was up to date and relevant.

Definition

A tornado is a violently rotating column of air in contact with the ground and extending from the base of a thunderstorm. A condensation funnel *does not need to reach to the ground* for a tornado to be present; a debris cloud beneath a thunderstorm is all that is needed to confirm the presence of a tornado, even in the total absence of a condensation funnel.

Each year an average of 800-1000 tornadoes are reported nationwide and they are more likely to occur during the spring and early summer months of March through June. Tornadoes can occur at any time of day but are mostly likely to form in late afternoons and early evenings.

The Enhanced Fujita Scale for tornados was developed to measure tornado strength, and is shown below.

FUJITA SCALE			OPERATIONAL EF-SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	**EF Number**	**3 Second Gust (mph)**
0	40-72	45-78	**0**	**65-85**
1	73-112	79-117	**1**	**86-110**
2	113-157	118-161	**2**	**111-135**
3	158-207	162-209	**3**	**136-165**
4	208-260	210-261	**4**	**166-200**
5	261-318	262-317	**5**	**Over 200**

History of Tornados

Horry County and the participating jurisdictions have been impacted by 52 tornado events from 1950-June 2020 according to data from the National Center Environmental Information (NCEI). Most of those tornados were the result of a cold front meeting the warm coastal air; which produced heavy thunderstorms, finally developing into tornados.

A tornado touched down in Socastee on *October 8, 1996*, causing spotty damage, including

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downed trees and power lines. The National Weather Service described the tornado as a F0. The National Climatic Data Center (NCDC) estimated property damage from two subdivisions, Brandy Mill and Lakewood Park at $250,000. The Weather radio was alerted two minutes after the tornado occurred.

Paul Donovan of Springfield, Va., took this picture around 4:30 p.m. July 6, 2001, from the ninth floor of the Sandcastle Inn on Ocean Boulevard. It shows the funnel cloud as it moved south along the beach. The National Weather Service defined the tornado as F2. Five separate tornadoes spawned, and about 3 miles of beachfront were affected, but the epicenter of damage was among the high-rise beachfront hotels along Ocean Boulevard between 2nd Ave N and 2nd Ave S. enough evidence was found to support classifying it as a EF2 tornado strength. Tornados or funnel clouds were sighted as far inland as U.S. 17 Bypass near Broadway at the Beach, and a touchdown occurred at MYR, Myrtle Beach Airport, near 29th Ave S.

Many automobiles and multi-story hotels had their windows blown out. Several structures had damage to their roofs and stucco walls, and one wooden structure had its roof completely removed. Power lines were down and some large billboards were damaged. The most severe damage occurred when several vehicles were actually flipped over by the tornadoes, including two tourist trolleys. There was $8 million in damage to the area and about 12 people had minor injuries.

On February 15, 2017 a confirmed EF-1 tornado with maximum winds of 110 miles per hour touched town on the Adrian Highway and Allsbrook area of Horry County with about 5 miles of damage. There was reported damage from 40 structures including 6 homes with roof damage. Another EF-1 would be confirmed later that year on October 24, 2017 at the intersection of Old Reaves Ferry Road and Inman Circle. Damage occurred to several dozen trees.

Hurricane Florence in September 2018 produced a waterspout that came ashore as an EF0 tornado near 21st Ave in Myrtle Beach and another fast moving tornado was spotted on Highway 17 west causing minor tree damage.

During Hurricane Dorian in September 2019 a tornado impacted the Little River area with EF-1 damage and 105 MPH wind speeds. Damages included several hardwood trees and pines snapped, shingle, roof and siding damage to homes with an estimated damage amount of $200,000.

On January 13, 2020 an EF1 tornado blew through the Loris High School parking lot with winds up to 90 mph. As many as 72 vehicles at the school were tossed about, car windows blown out and a trailer was flipped over.

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During the writing of the updates to this plan, Horry County was responding to impacts from Hurricane Isaias which brushed by the coast on August 4, 2020. On August 5, 2020 the National Weather Service confirmed an EF 0 tornado with 80 mph winds in Garden City on the 800 block of South Waccamaw Drive.

Summary and Conclusion of the Tornado Profile

According to the National Centers for Environmental Information (NCEI), in the past 65 years (1955 to June 2020), 52 tornados events have occurred in Horry County. These tornados have accounted for 104 injuries and $22.379 million in property damages in the county and participating jurisdictions.

Based on the NCEI historical data, a tornado has occurred every 1.25 years in Horry County. This is calculated by dividing the number of years examined (65) by the number of occurrences (52). The probability of risk is 46% and is determined by the number of years in which one or more tornados occurred (30) divided by the number of years examined (65).

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Based on available historical information the anticipated "*Frequency of Occurrence*" of future tornados is rated as ***"Likely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

Based on available historical information the probable "*Consequence of Impact*" of future tornados is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for tornados in Horry County is ***"2" (Low).***

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Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Tornado	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Tornado "season" typically runs from March to June in the Spring, and from October to November in the Fall. In the recent past, tornadoes have occurred much earlier in the year. Thunderstorms, hail and lightning usually occur during the Spring and Fall months. However, given the right conditions, thunderstorms can occur anywhere, anytime.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to tornadoes.

PROBABLE DURATION
Usually tornadoes are short lived and dissipate in less than one hour. Thunderstorms can last days dropping a significant amount of rain, creating the potential for flooding.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• National Weather Service (NWS) • SKYWARN • Fire & Rescue • Police Department • Horry County Emergency Management

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Consequence Analysis	
HAZARD: Tornado	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
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Critical	• Many response functions impacted. Potential life safety issues for responders.
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Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
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Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

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Consequence Analysis	
HAZARD: Tornado	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

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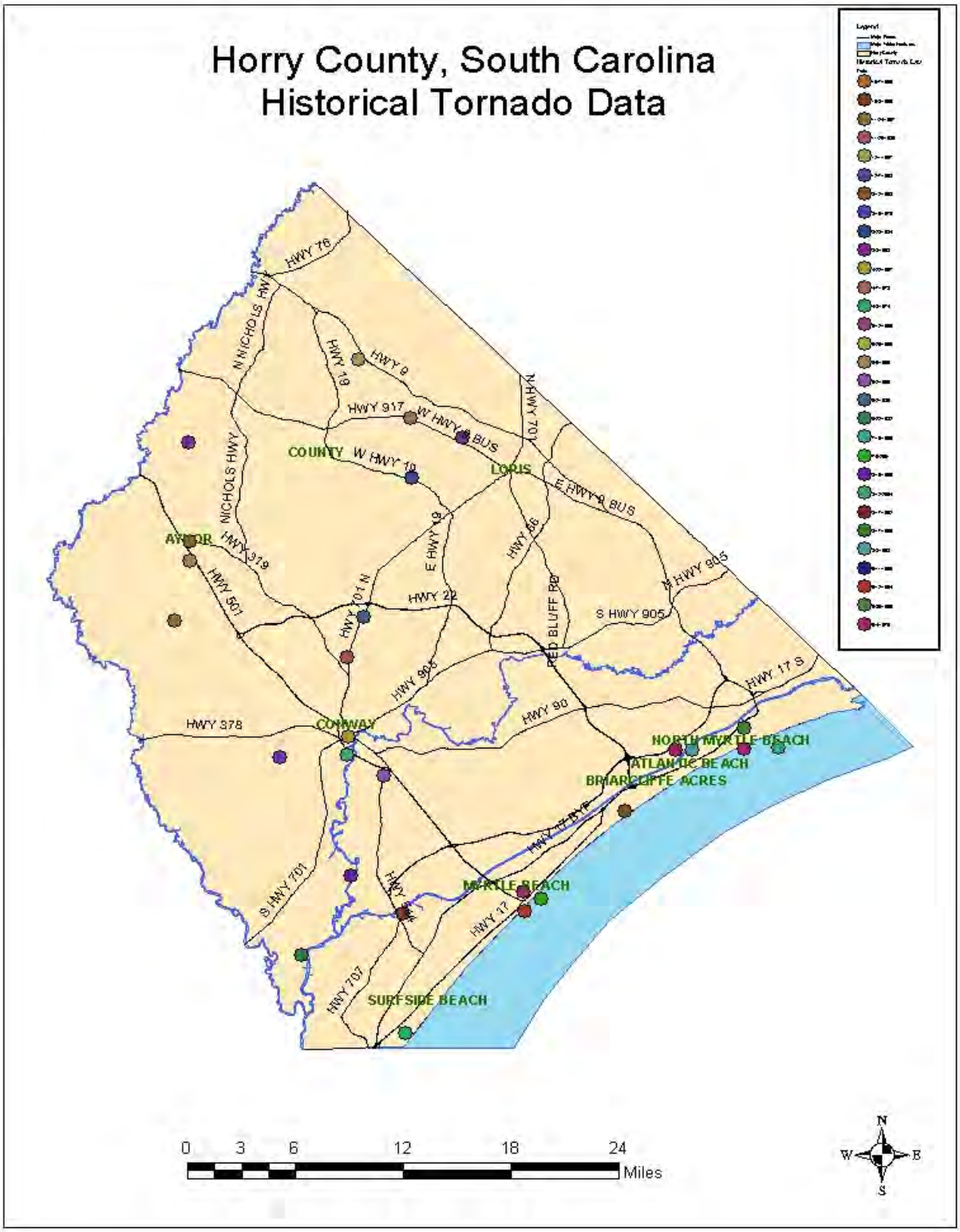
Map Generated by Horry County GIS Department


Horry County, South Carolina
Historical Tornado Data
HWY 76
N NICHOLS HWY
HWY 19
HWY 9
HWY 917
W HWY 9 BUS
HWY 707
COUNTY
W HWY 19
LORIS
E HWY 9 BUS
NICHOLS HWY
AYNOR
HWY 319
HWY 501
E HWY 19
HWY 66
HWY 905
HWY 701 N
HWY 22
RED BLUFF RD
S HWY 905
HWY 905
HWY 17 S
HWY 90
HWY 378
CONWAY
NORTH MYRTLE BEACH
ATLANTIC BEACH
BRIARCLIFFE ACRES
HWY 17 BYP
S HWY 701
MYRTLE BEACH
HWY 17
HWY 707
SURFSIDE BEACH
0 3 6 12 18 24
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S

3.2.7 SEVERE THUNDERSTORMS / WIND

The planning team has reviewed and analyzed this section of the plan in January 2015 and again June 2020 to verify the information to make sure it was up to date and relevant.

Definition

A Thunderstorm is a local storm resulting from warm humid air rising in an unstable environment. Air may start moving upward because of unequal surface heating, the lifting of warm air along a frontal zone, or diverging upper-level winds (these diverging winds draw air up beneath them). The scattered thunderstorms that develop in the summer are called air-mass thunderstorms because they form in warm, maritime tropical air masses away from other weather fronts. More violent severe thunderstorms form in areas with a strong vertical wind shear that forces the updraft into the mature stage, the most intense stage of the thunderstorm. Severe thunderstorms can produce large hail, forceful winds, flash floods, and tornadoes.

Typical Thunderstorm*:* Produces a brief period of heavy rain and lasts anywhere from 30 minutes to an hour.

Typical Storm*:* Small hail, usually melts before reaching the ground, stiff breeze, does very little or no damage.

Severe Thunderstorm*:* The National Weather Service (NWS) uses wind speed and hail size to define severe thunderstorms. The NWS declares that a thunderstorm is severe if wind gusts reach 57.5 mph or faster, if hail is three quarters of an inch in diameter or bigger, or if the thunderstorm produces a tornado or tornadoes. A thunderstorm only needs to meet one of the above criteria to be considered severe.

History of Thunderstorms / Wind

Horry County and the participating jurisdictions are frequently affected by severe thunderstorms. Damaging winds, flooding, hail and tornados are often associated with these events. Six of the most damaging storms are listed below:

Sep 18, 1994, 4:45 PM in Myrtle Beach - *$500K* - near Waccamaw Pottery on U.S. 501

Sep 12, 1997, 7:21 AM in Myrtle Beach - *$500.0K* - a thunderstorm / microburst struck the beach along a 4 block strip from 26th Ave - 30th Ave

Mar 21, 1999, 3:45 AM in Myrtle Beach - *$175.0K* - a severe thunderstorm, with marble size hail, damaged a resort, overturned trailers and damaged numerous cars - significant power outages

Jun 3, 2004, 12:00 PM in Hammond - *$125.0K* - damage to mobile homes and vehicles

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May 20, 2005, 4:55 PM in Conway - *$1.2M* - damage to Loris Community Hospital, roofs of other nearby buildings, and several cars

Aug 10, 2007, 9:25 PM in Green Sea - *$1.0M* - a large storm that damaged the Green Sea Floyds High School, several other commercial buildings, homes and mobile homes. Numerous trees and telephone poles were downed. Seven people were injured. Wind speeds were estimated between 95 and 109 mph.

July 28, 2014, 6:15 PM in Conway-Undetermined-a severe thunderstorm occurred in the Juniper Bay Area of Horry County that produced a very damaging microburst. As a result of this event a roof was blown off a mobile home and several large oak and pecan trees were uprooted and blown over causing some additional structure damage. There were some minor injuries associated with this storm as 6 people in one location were treated for minor injuries. Wind speeds were estimated to be roughly 75 mph according to the National Weather Service.

Summary and Conclusion of the Severe Thunderstorms / Wind Profile

According to the NCEI, in the past 65 years (1955 to 2020), 318 severe thunderstorms have occurred throughout the county and participating jurisdictions and have accounted for 21 injuries, 1 death and $4.565 million in property damages.

Based on NCEI historical data, severe thunderstorms have occurred every 0.20 years in Horry County. This is calculated by dividing the number of years examined (65) by the number of occurrences (318). The probability of risk is 74% and is determined by the number of years in which one or more severe thunderstorms occurred (48) divided by the number of years examined (65).

Based on available historical information the anticipated "*Frequency of Occurrence*" of future thunderstorms is rated as ***"Highly Likely"*,** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

WORKING DRAFT

Based on available historical information the probable "*Consequence of Impact*" of future severe thunderstorms is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for severe thunderstorms in Horry County is ***"3" (Medium).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Severe Thunderstorm	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Severe Thunderstorms usually occur from early Spring through the late Fall months.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to the risk of thunderstorms.
PROBABLE DURATION
Thunderstorms systems can last for several hours and are often accompanied by lightning.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• National Weather Service • SKYWARN • Horry County Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Severe Thunderstorms	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Severe Thunderstorms	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

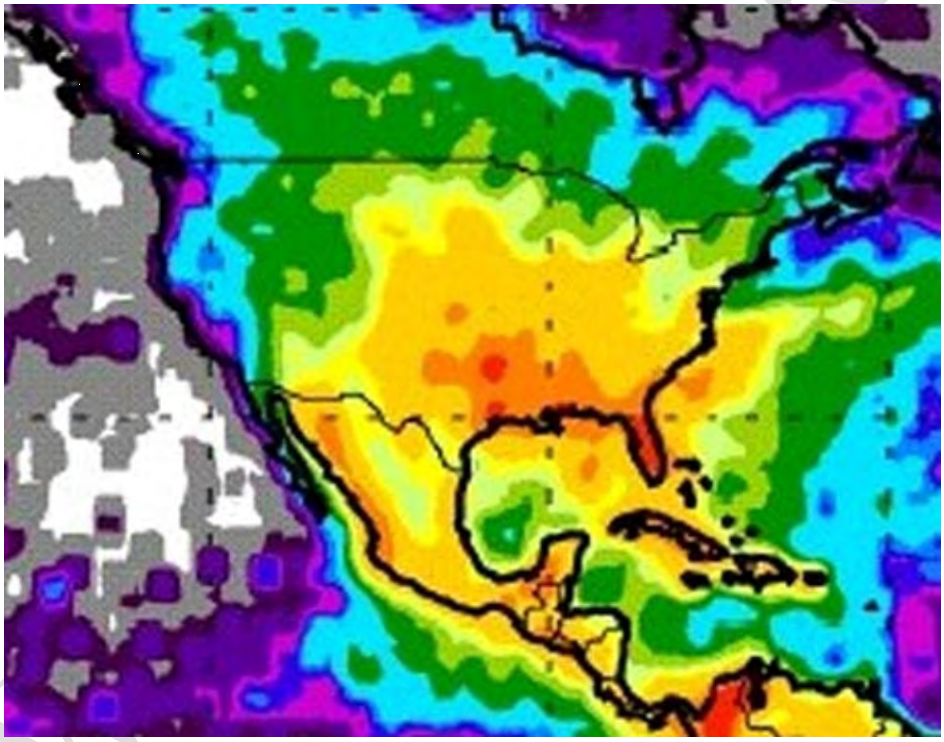
WORKING DRAFT

3.2.8 LIGHTNING

The planning team has reviewed and analyzed this section of the plan in January 2015 and June 2020 to verify the information to make sure it was up to date and relevant.

Definition

The action of rising and descending air within a thunderstorm separates positive and negative charges. Water and ice particles also affect the distribution of electrical charge. Lightning results from the buildup and discharge of electrical energy between positively and negatively charged areas. The average flash could light a 100-watt light bulb for more than 3 months. Most lightning occurs within the cloud or between the cloud and ground. Your chances of being struck by lightning are estimated to be 1 in 600,000 but could be reduced by following safety rules. Most lightning deaths and injuries occur when people are caught outdoors. Most lightning casualties occur in the summer months and during the afternoon and early evening. The air near a lightning strike is heated to 50,000 degrees F, hotter than the surface of the sun. The rapid heating and cooling of air near the lightning channel causes a shockwave that result in thunder.



National Geographic News Photo Gallery: Lightning Strike Map

The black, red, and orange denote the most lightning strikes while the blue, violet, gray, and white reveal the least lightning strikes. The map was made of images produced by two satellites.

History of Lightning

On June 21st 2001, lightning ignited a fire at an apartment complex. Residents in the building's 14 apartments were forced to relocate after a Horry County Code Enforcement inspector deemed the building uninhabitable. Property damage was estimated to be $200,000.00.

On June 1st, 2009, lightning struck a home in the Blackmoor Golf Course subdivision. The subsequent fire destroyed the $400,000 home.

On June 28th, 2009, lightning struck the Garden City Baptist Church setting it on fire. It took five hours to extinguish the blaze, and the church was destroyed. The estimate of damage was $300,000.

On July 21st, 2010, lightning struck the Surfside Beach Fire Department building, causing approximately $100,000 in damage.

On July 29, 2013, lightning struck an apartment complex off Gulley Brach Rd in Horry County. As a result of this strike it caused a fire at the complex which took fire crews roughly 20 min to put out. The result of the strike cost about $20,000.00 in damage.

Another risk associated with lightning in Horry County is the danger of lightning causing ignitions of wildfires. These ignitions typically happen in more rural areas where lightning targets are more limited and the lightning strikes large trees in a wooded area that can generate enough heat to ignite the small vegetation around the base of the tree. These wildfires can take up to two days after the tree is struck by lightning for the actual fire to ignite and start burning. Due to this scenario, these fires, depending on where they start, can create additional problems associated with wildfire suppression because these ignitions are sometimes not seen or reported as soon as other fires, allowing them to potentially get larger and burn more intense before suppression efforts can be initiated. Fortunately, Horry County does not have lightning fires frequently, but there is the need to know there is a possibility for ignitions following a lightning storm. *(map at the end of this section)*

Summary and Conclusion of the Lightning Profile

According to the National Center for Environmental Information (NCEI), in the past 25 years (1994 to 2020), there have been 36 recorded lightning strikes throughout the county. These lightning strikes have accounted for 10 injuries and $1.6 million in property damages in the county and participating jurisdictions. Horry County Fire and Rescue reports the following data regarding calls to structures from lightning strikes with the County.

Year	Number of calls
2016	21
2017	18
2018	13
2019	16
2020 to date	2

Based on NCDC historical data, a lightning strike has occurred every 1.44 years in Horry County. This is calculated by dividing the number of years examined (25) by the number of occurrences (36). The probability of risk is 72% and is determined by the number of years in which one or more lightning strikes occurred (18) divided by the number of years examined (25).

Based on available historical information the anticipated "*Frequency of Occurrence*" of future lightning strikes is rated as ***"Likely",*** as illustrated in the FEMA chart below.

WORKING DRAFT

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

Based on available historical information the probable "*Consequence of Impact*" of future lightning strikes is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for lightning in Horry County is ***"2" (Low).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Lightning	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Lightning strikes usually occur from early spring through the late Fall months.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to Lightning.
PROBABLE DURATION
Lightning occurs within a thunderstorm system and can, under the right conditions, last for several hours.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• National Weather Service • SKYWARN • Horry County Emergency Management

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Consequence Analysis	
HAZARD: Lightning	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

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Consequence Analysis	
HAZARD: Lightning	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

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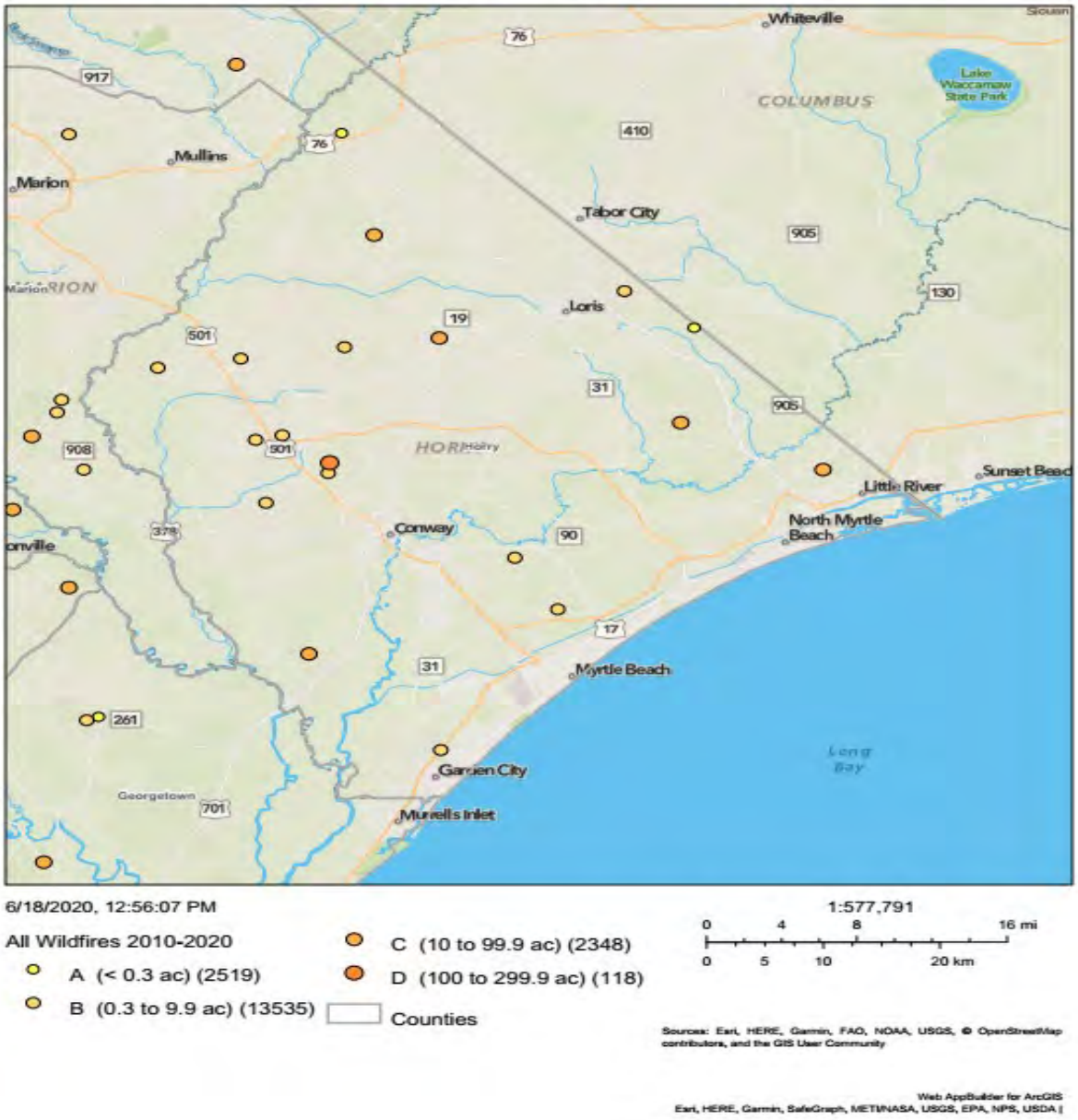
Horry County 10yr Lightning Fire Map



3.2.9 WINTER STORMS

The planning team has reviewed and analyzed this section of the plan in January 2015 and June 2020 to verify the information to make sure it was up to date and relevant.

Definition

Winter storms can produce an array of hazardous weather conditions, including heavy snow, blizzards, freezing rain/ice pellets and extreme cold. Extreme snow events are the most potentially disruptive to society, for they can bring down power lines, trees and lead to roof collapses. All forms of severe winter weather can make traveling treacherous. The chart below describes the necessary elements for each type of winter storm.

Type of Winter Storm	Elements	Challenges
Blizzard: A storm which contains large amounts of snow OR blowing snow	➢ Winds > 35 mph ➢ Visibilities < ¼ mile ➢ Extended period of time (at least 3 hours)	- Driving - Power Outages - Frozen Pipes - White Outs - Frost Bite/Hypothermia
Ice Storm: They typically occur when a layer of warm air hovers over a region	➢ Ambient Temp. near 0°C (32°F) ➢ Ground temperature is sub-freezing	- Hazardous Driving - Telephone / power lines destroyed - Crops may be ruined

History of Winter Storms

Below you will find a list of winter storms that have affected the area from 2000-2020.

On February 13, 2004 FEMA declared several counties in South Carolina Federal Disaster Areas because of an ice storm that swept through the state. Horry County was one of the declared counties. No individual assistance was available but both public assistance and hazard mitigation assistance was offered for the repair and replacement of disaster-damaged public facilities. Winter storms in Horry County, including the participating jurisdictions are rare, which is why problems arise. Horry County and the participating jurisdictions have had few winter storms since 2000.

In December 26, 2010 a winter storm brought approximately three inches of snow, mainly over the western portion of the county. This storm dropped two to four inches of snow over much of the region. On February 12, 2010 Horry County had a winter storm pass through the region with snow beginning to fall in the evening, and reports of snow ranging from 2 to 4 inches falling along the coast and into the western portion of the county, and over six inches near the Town of Andrews. Numerous traffic accidents were reported, along with downed power lines.

Two winter storms affected the area during the winter of 2014. On January 28, 2014 freezing rain began falling and changed over to mostly sleet in the evening and overnight hours, and

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tapered off to flurries in the morning. The NWS reported "total ice accumulations ranged from a tenth to a half inch, and sleet accumulations along the coast were also about a half inch. Due to the nature of the precipitation, power outages were isolated, however driving was treacherous. Numerous traffic accidents were reported as well as injuries due to slips and falls." On February 11, 2014 another winter weather event occurred. In this event we had freezing rain and sleet that started on the morning of February 11, 2014 and continued until February 13, 2014. It caused in some places an accumulation of half an inch up to an inch of ice. This caused numerous vehicle accidents and extreme power outages in large portions of Horry County. Public and private schools were closed for several days as well as many government entities and private sectors. A State of emergency was issued for this event and FEMA also declared several counties disaster areas which opened the lines for Hazard Mitigation Grant Program funding.

On February 24, 2015 freezing rain fell across the county, with one to two tenths of an inch of ice accumulation reported, mainly on trees and metal surfaces creating a winter weather event.

Most recently, a winter storm effected the area on January 3, 2018 as two inches of snow fell with totals for the event ranging from a trace to a half inch. A quarter of an inch of ice fell in North Myrtle Beach. Record cold preceded and followed the event and lasted another 5 days.

Winter Storm History in Horry County and Surrounding Jurisdictions
Source: National Climatic Data Center

Location County	Date	Type	Death	Injuries	Property Damage
1. Horry County	1/18/2000	Freezing Rain	0	0	0
2. Horry County	1/24/2000	Winter Storm	0	0	0
3. Horry County	4/18/2001	Extreme Cold	0	0	50K
4. Horry County	1/2/2002	Winter Storm	0	0	0
5. Horry County	1/5/2002	Extreme Cold	1	1	0
6. Horry County	1/26/2004	Ice Storm	0	0	23.2M
7. Horry County	2/12/2010	Heavy Snow	0	0	0
8. Horry County	12/26/2010	Heavy Snow	0	0	0
9. Horry County	2/11/2014	Ice Storm	0	0	Unknown
10. Horry County	2/24/2015	Winter Weather	0	0	Unknown
11. Horry County	1/3/2018	Winter Storm	0	0	Unknown
		Totals:	1	1	23.25M

Limitations of Data Set:

- Data Set is limited to 2000 – 2020
- Particular area and jurisdictions within the county are not identifiable

Based on the South Carolina State Climatology Office, in any given year there is a chance for a severe winter storm to affect Horry County and the participating jurisdictions. In the map below the probability for snowfall each year in Horry County is 20% - 30% chance. When the area is faced with snow cover, it paralyzes transportation and shuts down businesses and local governments. Snow removal equipment and materials to treat the roads are not available in the

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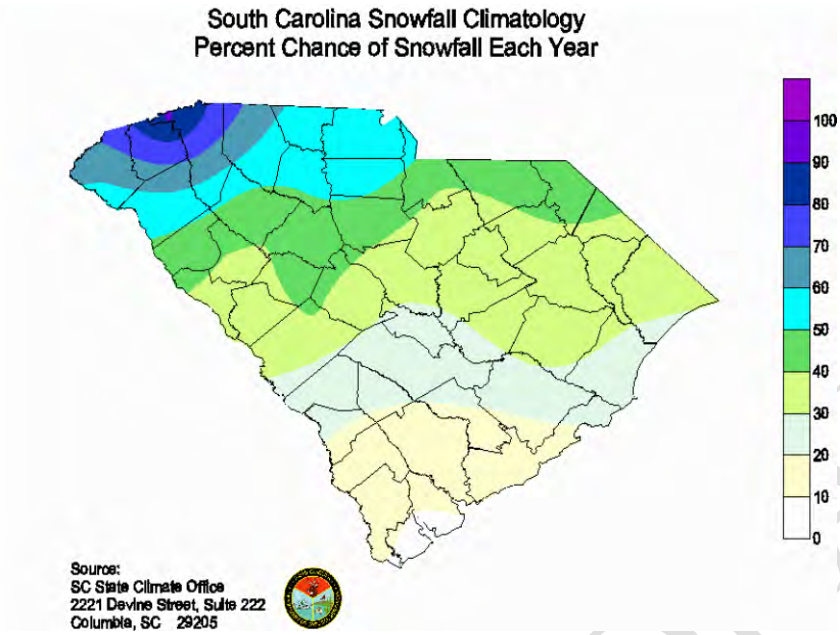
area. The population is forced to stay indoors until the snow melts, which usually occurs quickly.



Winter Summary and Conclusions of the Storms Profile

According to the National Centers for Environmental Information (NCEI), in the past 20 years (2000 to 20), 11 storm events have occurred. These storm events have accounted for 1 death, 1 injury and more than $23.25 million in property damages for the county and participating jurisdictions.

Based on NCEI historical data, a storm event has occurred every 1.8 years in Horry County. This is calculated by dividing the number of years examined (20) by the number of occurrences (11). The probability of risk is 40% and is determined by the number of years in which one or more storm events occurred (8), divided by the number of years examined (20).

Based on available historical information the anticipated "*Frequency of Occurrence*" of future winter storm events is rated as ***"Likely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

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Based on available historical information the probable "*Consequence of Impact*" of future winter storm events is rated as ***"Limited"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for winter storms in Horry County is **"3" (Medium).**

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Winter Storms	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Winter Storms generally occur between December to March, during the winter months. However, in the last 5 years we have experience heavy snow in mid to late November.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to winter storms.
PROBABLE DURATION
A winter storms may precipitate anywhere from a few hours to a few days. Significant amounts of rain and snow can create the potential for icy conditions contributing to multiple accidents and downed power lines.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• National Weather Service • SKYWARN • South Carolina Emergency Management

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	• Horry County Emergency Management

Consequence Analysis		
HAZARD: Winter Storms		Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS		
Negligible	•	Little or no impact on responders or routine response operations.
Limited	•	Minor impact to some response operations. Not life threatening to responders.
Critical	•	Many response functions impacted. Potential life safety issues for responders.
Catastrophic	•	Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE		
Negligible	•	Little or no impact on critical infrastructure.
Limited	•	Minor impact to some key infrastructure. No widespread impact.
Critical	•	Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	•	Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT		
Negligible	•	Slight environmental impact with no long term environmental consequences.
Limited	•	Minor environmental impact with consequences lasting less than 1 year.
Critical	•	Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	•	Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE		
Negligible	•	Slight agricultural impact with no long term agricultural consequences.
Limited	•	Minor agricultural impact with consequences lasting less than 1 year.
Critical	•	Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	•	Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES		
Negligible	•	Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	•	Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	•	Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	•	Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE		
Negligible	•	Little to no impact on the public confidence in governance.
Limited	•	Minor loss of confidence in governance in a small percentage of the population.
Critical	•	60% of the public has eroded confidence in governance.
Catastrophic	•	Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Winter Storms	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

3.2.10 EXTREME HEAT

The planning team has reviewed and analyzed this section of the plan in January 2015 and June 2020 to verify the information to make sure it was up to date and relevant.

Definition

Extreme Heat/Heat Wave occurs when there are high temperatures combined with high humidity persisting over an extended period of time. The table below categorizes extreme heat temperatures with relative humidity. Then displays what the temperature feels like outside.

NOAA's National Weather Service

Heat Index

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	126	130					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Streuous Activity

Caution | Extreme Caution | Danger | Extreme Danger

History of Extreme Heat

Horry County typically sees the hottest weather during the month of July with the month of August being a close second. Average temperatures during July range from highs in the low 90's to lows in the low 70's. The month of August is very similar to the range we see in July. The only death on record from extreme heat occurred on July 29, 1995. A 64-year old man died from heat exhaustion. However on July 20, 1999, an extended heat wave caused hospital treatment of dozens of people in Horry County. These two events were marked by heat indexes well above 100 degrees for several days. It is not uncommon to have very high humidity levels coupled with high temperatures to create hazardous heat condition in Horry County. The highest temperature on record for Horry County is 107 degrees and that was record in Loris on June 27, 1952. Below is a list of times Extreme Heat affected Horry County and the participating jurisdictions.

History of Extreme Heat in Horry County and Surrounding Jurisdictions Source: National Data Climatic Center				
Location or County	**Date**	**Type**	**Death**	**Injuries**
Horry County	7/29/1995	Heat	1	0
Horry County	7/20/1999	Excessive Heat	0	15
Horry County	7/21/2011	Heat	0	0
Horry County	6/29/2012	Heat	0	0
Horry County	7/26/2012	Heat	0	0
Horry County	6/14/2015	Heat	0	0
		Totals:	**1**	**15**
Limitation of Dataset: ◦ Data Set it limited to 1950 – 2020 ◦ Particular area and jurisdictions within the County are not identifiable				

Historical records indicate that possible extreme heat/heat waves will affect Horry County. There is no history of loss of critical facilities and/or damage to property from extreme heat. Therefore future impacts will most likely be negligible meaning minor injuries may occur; critical facilities may be shut down for 24 hours or less and less than ten percent of the property in the community would be damaged. These factors suggest a hazard index ranking of 2 for extreme heat/heat waves in Horry County and the participating jurisdictions.

According to the National Data Climatic Center there are only two instances of extreme heat affecting Horry County and participating jurisdictions in the past; therefore limiting the frequency of occurrence to unlikely, meaning less than a 1% probability of occurring in the next 100 years.

Summary and Conclusion of the Extreme Heat Profile

According to the National Centers for Environmental Information (NCEI), in the past 70 years (1950 to 2020), 6 heat events have occurred throughout the county. Attributed to these events are reported 1 death and 15 injuries. There has been no property damage.

Based on NCEI historical data, an extreme heat event has occurred every 11 years in Horry County. This is calculated by dividing the number of years examined (70) by the number of occurrences (6). The probability of risk is 7% and is determined by the number of years in which one or more extreme heat events occurred (5) divided by the number of years examined (65).

Based on available historical information the anticipated "*Frequency of Occurrence*" of future extreme heat is rated as **"Possible",** as illustrated in the FEMA chart below.

WORKING DRAFT

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

Based on available historical information the probable "*Consequence of Impact*" of future extreme heat is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for extreme heat in Horry County is ***"2" (Low).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Extreme Heat	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Extreme heat occurs during the summer months, mainly the months of July through September.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to extreme heat.

PROBABLE DURATION
Extreme heat can last for a day or even a week.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• NOAA • National Weather Service • Horry County Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Extreme Heat	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Extreme Heat	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

3.2.11 DROUGHT

The planning team has reviewed and analyzed this section of the plan in January 2015 and June 2020 to verify the information to make sure it was up to date and relevant.

Definition

The State of South Carolina defines drought as a period of diminished precipitation, which results in negative impacts upon the hydrology, agriculture, biota, energy, and economy of the State. During severe droughts, agricultural crops do not mature, wildlife and livestock are undermined, land values decline, and unemployment increases. Drought can cause a shortage of water for human and industrial consumption, hydroelectric power, recreation and navigation. Water quality may declines and the number of wildfires may increase.

The Governor approved the South Carolina Drought Response Act on June 14, 2000. With this law the legislature defined the different threats/levels of a drought situation as indicated below.

"*Drought indices***"** means topical and quantitative indicators of drought including, but not limited to, sustained decline in water levels of natural flowing streams and other natural bodies of water, decline in water tables above and below ground, forest fire indices, sustained decline in potable drinking water supplies, agricultural stress, low soil moisture, and low precipitation. The department must, through regulation, establish specific numerical values for the indices that define each level of drought.

'Incipient drought' means that there is a threat of a drought as demonstrated by drought indices. The incipient drought phase shall initiate in-house mobilization by department personnel and the Drought Response Committee. The department shall routinely monitor the climatic variables, stream flow, and water levels in potable drinking water supplies and water levels in the above and below ground water tables and lakes, and shall notify the Drought Response Committee and relevant federal, state, and local agencies that a portion of the State is experiencing an incipient drought condition. The department must increase monitoring activities to identify a change in existing conditions.

'Moderate drought' means that there is an increasing threat of a drought as demonstrated by drought indices. Statements must be released to the news media by the department, and appropriate agencies must accelerate monitoring activities.

'Severe drought' means that the drought has increased to severe levels as demonstrated by drought indices. This phase must be verified utilizing data, forecasts, and outlooks from various agencies. A drought of this severity normally requires an official declaration by the department and water withdrawals and use restrictions.

'Extreme drought' means that the drought has increased to extreme levels as demonstrated by drought indices. The department shall continue to evaluate information from various sources. Upon confirmation of an Extreme Drought Alert Phase, the Drought Response Committee may recommend that the Governor issue a public statement that an extreme drought situation exists and that appropriate water-use and withdrawal restrictions be imposed.

WORKING DRAFT

History of Drought

November 30, 2001 the South Carolina Drought Response Committee declared many Counties in the state to be in a moderate drought. For the year, the state received well below the normal rainfall averaging 9-12 inches below normal. The below normal rainfall actually began in 1999, and since that time the Pee Dee and the Grand Strand area were about 20 inches below normal. The main result of the lack of precipitation was above normal wildfires, scorching 2500 acres in November alone, verses 950 acres on average. (NCDC) The table below lists the history of drought in Horry County since 1999. Also included is a current map of the Southeast drought levels. It shows Horry County in normal conditions. This map was obtained from the National Integrated Drought Information System and updated for 2020.

Drought History in Horry County and Surrounding Jurisdictions
Source: National Climatic Data Center

Location or County	Date	Type	Death	Injuries
Horry County	8/19/1999	Drought	0	0
Horry County	11/15/2001	Drought	0	0
Horry County	6/1/2002	Drought	0	0
Horry County	11/01/2007	Drought	0	0
Horry County	12/01/2007	Drought	0	0
Horry County	1/1/2008	Drought	0	0
Horry County	7/1/2011	Drought	0	0
		Totals:	0	0

Limitation of Dataset:

- Data Set is limited to 1999 – 2020
- Particular area and jurisdictions within each county are not identifiable

Summary and Conclusion of the Drought Profile

According to the NCDC, in the past 60 years (1960 to 2020), 7 droughts have affected Horry County. These droughts have accounted for no injuries or damage.

Based on NCDC historical data, a drought has occurred every 8.5 years in Horry County. This is calculated by dividing the number of years examined (60) by the number of occurrences (7). The probability of risk is 10% and is determined by the number of years in which one or more droughts occurred (6) divided by the number of years examined (60).

WORKING DRAFT

Based on available historical information the anticipated "*Frequency of Occurrence*" of future drought is rated as **"Possible",** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

Based on available historical information the probable "*Consequence of Impact*" of future drought is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for drought in Horry County is ***"2" (Low).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Drought	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	Droughts do not have regular seasonal patterns. They can occur anytime due to the lack of precipitation.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to the risk of drought.

PROBABLE DURATION
Droughts can last from days to years.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• U.S. Drought Monitor • National Weather Service • Horry County Emergency Management

WORKING DRAFT

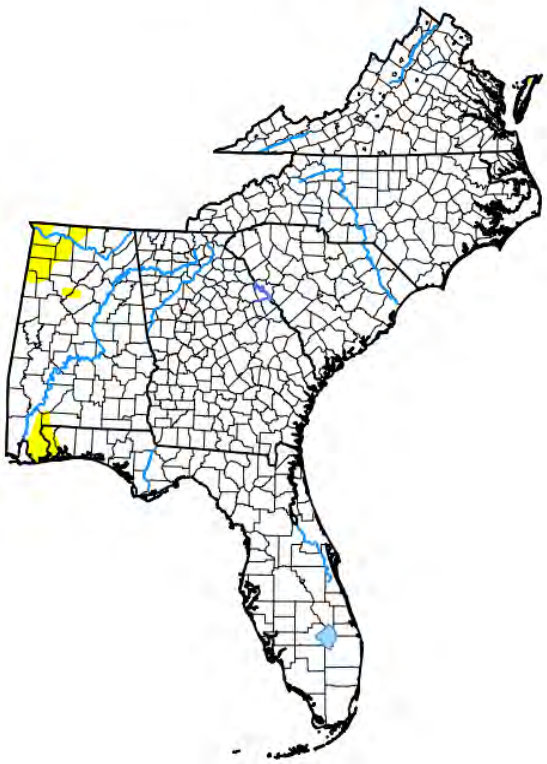
Consequence Analysis	
HAZARD: Drought	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORK DRAFT

Consequence Analysis	
HAZARD: Drought	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

National Integrated Drought Information System



June 23, 2020

(Released Thursday, Jun. 25, 2020)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	97.72	2.28	0.00	0.00	0.00	0.00
Last Week *06-16-2020*	97.39	2.61	0.55	0.00	0.00	0.00
3 Months Ago *03-24-2020*	79.06	20.94	0.97	0.21	0.00	0.00
Start of Calendar Year *12-31-2019*	93.12	6.88	1.69	0.00	0.00	0.00
Start of Water Year *10-01-2019*	20.54	79.46	44.26	13.71	1.87	0.00
One Year Ago *06-25-2019*	70.83	29.17	6.41	0.51	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

Adam Hartman
NOAA/NWS/NCEP/CPC

droughtmonitor.unl.edu

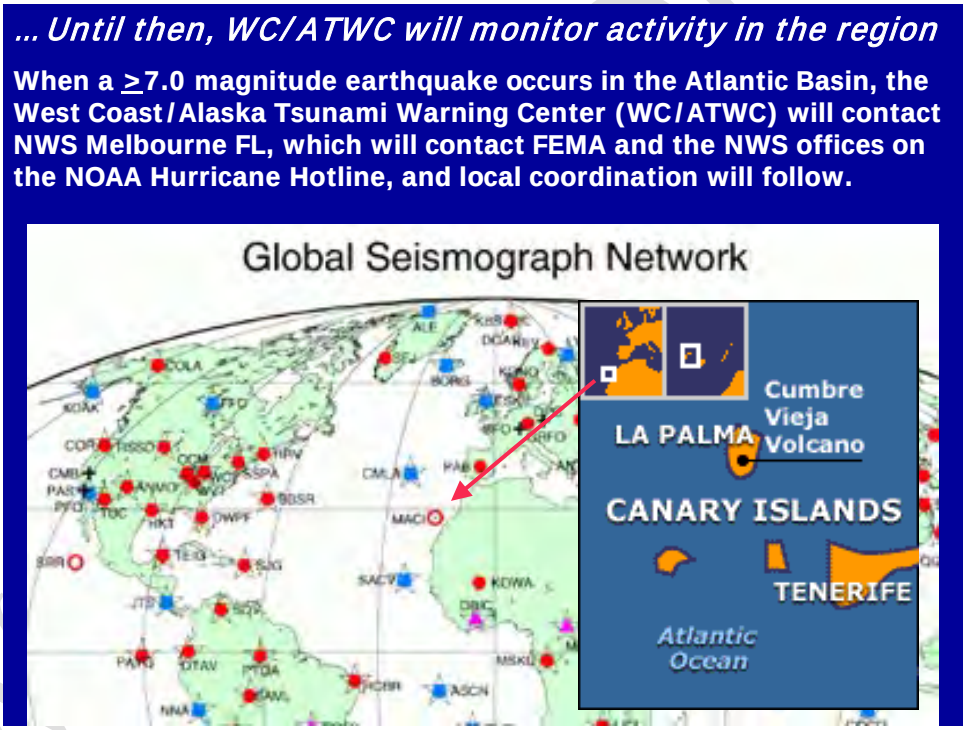
3.2.l2 TSUNAMI

The planning team has reviewed and analyzed this section of the plan in January 2015 and again June 2020 to verify the information to make sure it was up to date and relevant.

Definition

A tsunami is a series of ocean waves generated by any rapid large-scale disturbance of the seawater. Earthquakes generate most tsunamis, but they may also be caused by volcanic eruptions, landslides, undersea slumps or meteor impacts. The waves radiate outward in all directions from the disturbance and can propagate across entire ocean basins.

In the deep ocean, a tsunami is barely noticeable and will only cause a small and slow rising and falling of the sea surface as it passes. Only as it approaches land does a tsunami become a hazard. As the tsunami approaches land and shallow water, the waves slow down and become compressed, causing them to grow in height. In the best of cases, the tsunami comes onshore like a quickly rising tide and causes a gentle flooding of low-lying coastal areas. (NOAA)



History of Tsunamis

Horry County and the participating jurisdictions have no Tsunami on record; however, in response to the Indian Ocean 9.0 Earthquake/Tsunami, December 26, 2004, the U.S. Government responded with a NOAA Tsunami Program for the US East Coast. Therefore Horry County, as a coastal county, is required to address Tsunami's in this plan. Illustrated above, the open circles identify a site where a seismometer is yet to be deployed; however, the threat from

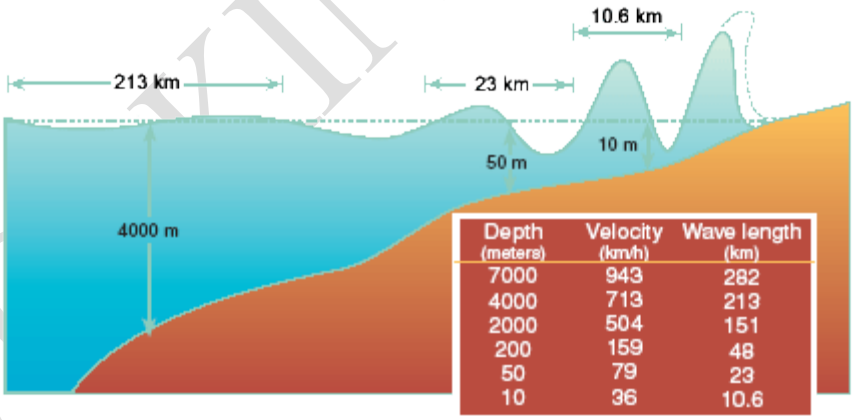
the potentially "calving (like an iceberg)" volcano in the Canary Islands is not viewed as very significant on the East Coast.

The "mega Tsunami" threat from Cumbre Vieja is minimal; the more significant known tsunami source is the subduction earthquake zone just north of Puerto Rico in the Puerto Rico Trench. Early assessments based on a 9.0 earthquake in the Puerto Rico Trench show the possibility of a 2-meter wave affecting the Carolinas, especially along the NC Outer Banks near Hatteras, where the narrow Continental Shelf will not dissipate the wave as much. *Tom Matheson, Warning Coordination Meteorologist, NWS Wilmington, North Carolina.*

The other possible scenario is a sub-marine landslide that could occur off the continental slope and could be a much worse scenario for Horry County. The USGS simulated a sub-marine landslide in 2012 with the Currituck Slump. The sub-marine landslide was simulated as occurring off the coast of the Outer Banks in North Carolina and it resulted in a much shorter notification time for the coast of North and South Carolina and most definitely for Horry County. It also increased the risk for larger wave height along our coast. From the best predictions of the National Weather Service-Wilmington a sub-marine landslide off the coast of South Carolina could produce a tsunami on our coast within an hour and if there were to be a sub-marine landslide off the coast of Florida we could be seeing the tsunami within two hours.

The Intergovernmental Oceanographic Commission (IOC), distinguished tsunami waves from ordinary ocean waves by their great length between wave crests, often exceeding a 100 km (60 miles [mi]) or more in the deep ocean, and by the time between these crests, ranging from 10 minutes to an hour.

Tsunami Speed is reduced in shallow water as height increases rapidly.



In the open ocean a tsunami is less than a few tens of centimeters (1 ft) high at the surface, but its wave height increases rapidly in shallow water. Tsunami wave energy extends from the surface to the bottom in even the deepest waters. As the tsunami attacks the coastline, the wave energy is compressed into a much shorter distance and a much shallower depth, creating destructive, life-threatening waves.

WORKING DRAFT

The West Coast/Alaska Tsunami Warning Center (WC/ATWC), assuming formal Warning Responsibility, has been issuing since products for parts of the Atlantic Coast on April 20, 2005, based on seismic activity with the following thresholds:

Information Message:
for an area within 50 km (30 miles) of a 3.5 - 5.0 detection
for an area within 150 km (95 miles) of a 5.0 - 6.0 detection

Tsunami Information Bulletin:
for a 6.0 - 6.7 occurring offshore, but near the coast
for a 6.0+ occurring inland

Tsunami Warning - The potential for at least a 50 cm (1.6 foot high) wave:
For 6.8-7.5

Tsunami Warning, and a Tsunami Watch for area potentially affected outside 3 hour wave travel For >7.5

In response to the warning system a minimal Tsunami Hazard Area/Evacuation Zone has been proposed. The Evacuation Zone is from the high tide line, a box extending one hundred (100) meters inland and five (5) meters high. This means people would be expected to evacuate by going in land or by going up into a building.

According to CBS news, the last major tsunami to strike the Eastern Seaboard was in 1929. An earthquake triggered a landslide and a tidal wave that killed 51 people on the Grand Banks along the Newfoundland coast. Although there is no immediate threat of a tsunami to Horry County and the participating jurisdictions, a team of scientists has reported a system of large depression in the ocean floor off Virginia and North Carolina coasts. This depression appears to have been caused by gas eruptions, only strengthening the theory that an Atlantic tsunami is someday possible.

The latter example is reason enough to plan ahead. The United States is acting to improve tsunami protection along the U. S. coast (Pacific, Caribbean, and the Gulf of Mexico). They are improving seismic sensor data and infrastructure for better earthquake detection and warning, including the Caribbean, expanding research on tsunami forecasting and improving response capacity with enhanced emergency warning systems, community response plans, and public education. This information is all according to the US National Tsunami Hazard Mitigation Program. In conclusion the overall probability of a Tsunami to hit Horry County and its participating jurisdictions is highly unlikely. The probability of highly unlikely was given due to the fact that Horry County and participating jurisdictions have never been affected by a tsunami. The probability is less than 1% of a tsunami affected Horry County and participating jurisdictions.

Summary and Conclusion of the Tsunami Profile

According to the NWS, there have been zero tsunamis to affect Horry County. Based on available historical information the anticipated "*Frequency of Occurrence*" of future tsunamis is rated as ***"Highly Unlikely",*** as illustrated in the FEMA chart below.

WORKING DRAFT

Frequency of Occurrence	
Highly Likely	*Near 100 percent probability in the next year.*
Likely	*Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.*
Possible	*Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.*
Unlikely	*Less than 1 percent probability in the next year of less than one chance in the next 100 years.*
Highly Unlikely	*Little to no probability in next 100 years.*
Source: FEMA, 1997	

Based on available historical information the probable "*Consequence of Impact*" of future tsunamis is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for tsunamis in Horry County is ***"1" (Lowest).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Tsunami	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	The majority of tsunamis are caused by earthquakes; therefore there are not specific seasonal patterns for tsunamis.

AREAS LIKELY TO BE AFFECTED MOST
The areas along the coast of Horry County are the most susceptible to a tsunami.

PROBABLE DURATION
Droughts can last from days to years.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• NOAA • National Weather Service • West Coast/Alaska Tsunami Warning Center • Horry County Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Tsunami	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORK DRAFT

Consequence Analysis	
HAZARD: Tsunami	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

Map Generated by Horry County GIS Department

3.2.13 HAZARDOUS MATERIAL SPILLS/RELEASES

The planning team has reviewed and analyzed this section of the plan in January 2015 and again June 2020 to verify the information to make sure it was up to date and relevant. The Transportation map was reviewed to ensure its correctness.

Definition

Hazardous materials (HazMat) are defined and regulated in the United States primarily by laws and regulations administered by the U.S. Environmental Protection Agency (EPA), the U.S. Occupational Safety and Health Administration (OSHA), the U.S. Department of Transportation (DOT), and the U.S. Nuclear Regulatory Commission (NRC). Each has its own definition of a "hazardous material."

The Institute of Hazardous Materials Management (IHMM) defines hazardous materials as any item or agent (biological, chemical, physical) which has the potential to cause harm to humans, animals, or the environment, either by itself or interaction with other factors.

The severity of a HazMat incident is based on the following factors:

- Location
- Identification of the product and its hazards
- Type of container and condition
- Information on arrival
- Amount of product
- Current weather / terrain
- Acute or potential exposure

History of Hazardous Materials Spills / Releases

A summary of HazMat spills / releases in the county and surrounding waters for the period February 1990 to January 2015 is summarized below:

Type	Number of Reports
Land	69
Soil	7
Subsurface	1
Water	334
Other	3
Unknown	3
TOTAL	**417**

Source: *National Response Center*

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For the 2020 update, the Horry County Fire Rescue Department provided the following data:

All NFIRS Incidents - HazMat Type Summary
HCFR
Incident Date Range 1/1/2005 To 1/1/2020
NFIRS Incident Type Count

2007	70
2008	70
2009	68
2010	65
2011	63
2012	48
2013	49
2014	81
2015	68
2016	81
2017	69
2018	114
2019	122
Total Number of Calls	968

The Intercoastal Waterway travels the length of the eastern portion of the county from its northern most border with North Carolina to the southern border with Georgetown County, a distance of approximately 36 miles. Additionally, the Atlantic Ocean borders the entire eastern portion of the county. The large volume of commercial and recreational boating accounts for the greatest number (313) and percentage (80%) of HazMat spills / releases in the NRC report. These spills / releases are primarily: fuel (gasoline, diesel, kerosene); oil products; and sewage.

The single largest release in the county concerns groundwater contamination (trichloroethylene, or TCE) from AVX Corp. in the Myrtle Beach municipality, which likely dates back to the 1970's. AVX admitted to polluting the city's groundwater with TCE, but had disputed the extent of that contamination. A federal judge ruled in May 2011 that AVX is solely responsible for the TCE contamination and subsequently designated the case a class action status and the plaintiffs include 229 property owners. Clean-up is underway.

Beyond the case cited above, there has been no large-scale spills or releases on land in the county. The majority of spills / releases in the county are primarily fuel (gasoline, diesel, kerosene) and oil products (43 or 54%). Equipment failure and dumping are the largest categories of reasons – about 15 or 33% each.

Summary and Conclusion of the Hazardous Material Spill / Release Profile

According to the National Response Center (NRC), in 25 years (1990 to 2015), there were 417 HazMat spills / releases throughout the county and in the waters in and immediately surrounding

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the county as seen in the charts below.

Based on NRC historical data, a HazMat spill / release has occurred every 0.059 years in Horry County. This is calculated by dividing the number of years examined (25) by the number of occurrences (417). ***For the past 24 years, the jurisdiction has averaged over 17 hazardous material spills / releases a year.*** The probability of risk is 100% and is determined by the number of years in which one or more HazMat spill / release occurred (25) divided by the number of years examined (25).

Based on available historical information the anticipated "*Frequency of Occurrence*" of future a HazMat spill / release is rated as ***"Highly Likely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

Based on available historical information the probable "*Consequence of Impact*" of a future HazMat spill / release is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for HazMat spills / releases in Horry County is ***"3" (Medium).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Hazardous Materials Release/Spill	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	HazMat releases/spills can occur throughout the year. The large volume of commercial and recreational boating accounts for the greatest number (313) and percentage (80%) of HazMat spills/releases in the National Response Center report. These spills / releases are primarily; fuel (gasoline, diesel, kerosene); oil products; and sewage.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to the risk of Hazardous Material release/spills.

PROBABLE DURATION
Droughts can last from days to years.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• SCEMD • SCDHEC • Local Police and Fire • Horry County Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Hazardous Materials Release/Spills	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

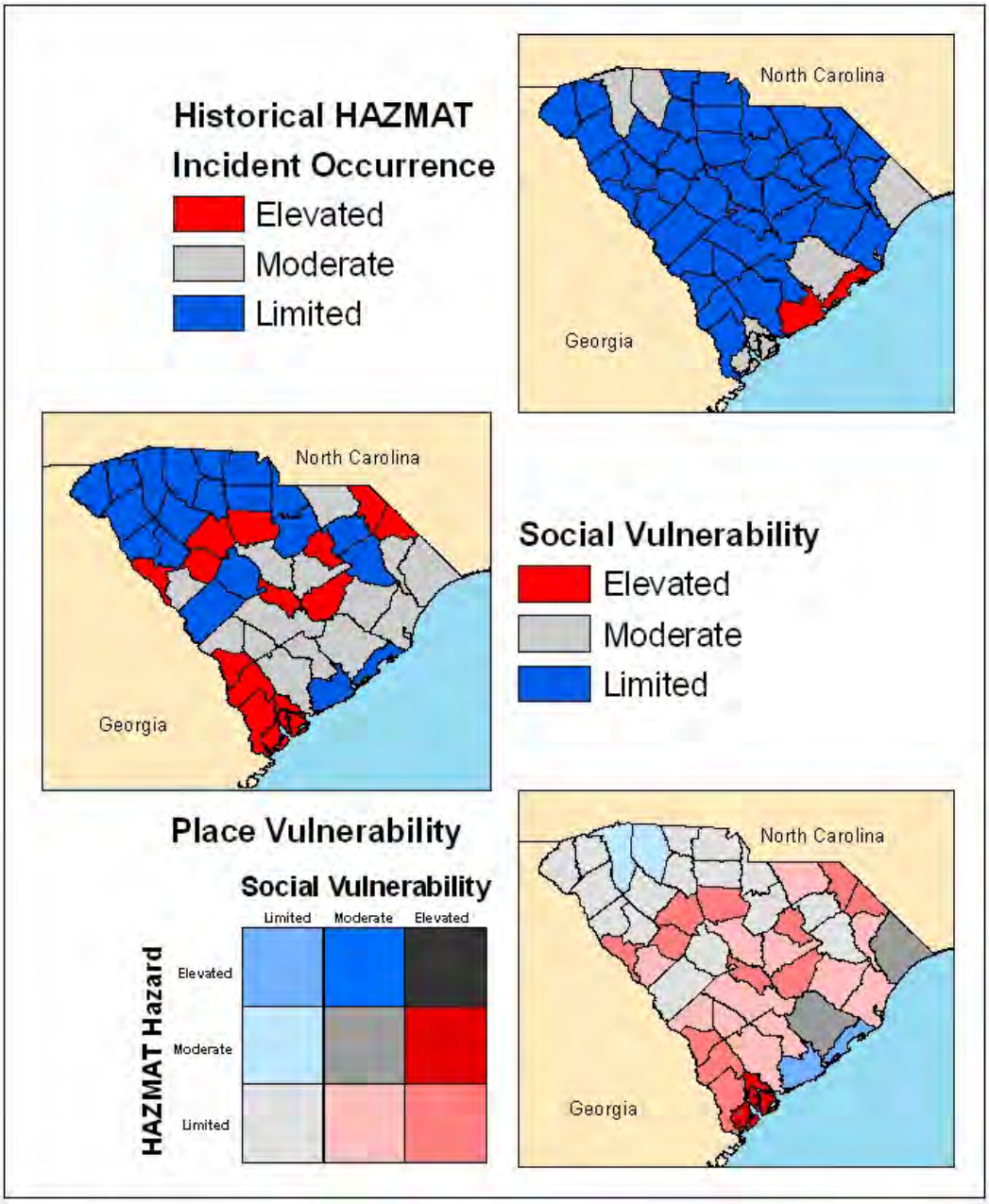
WORKING DRAFT

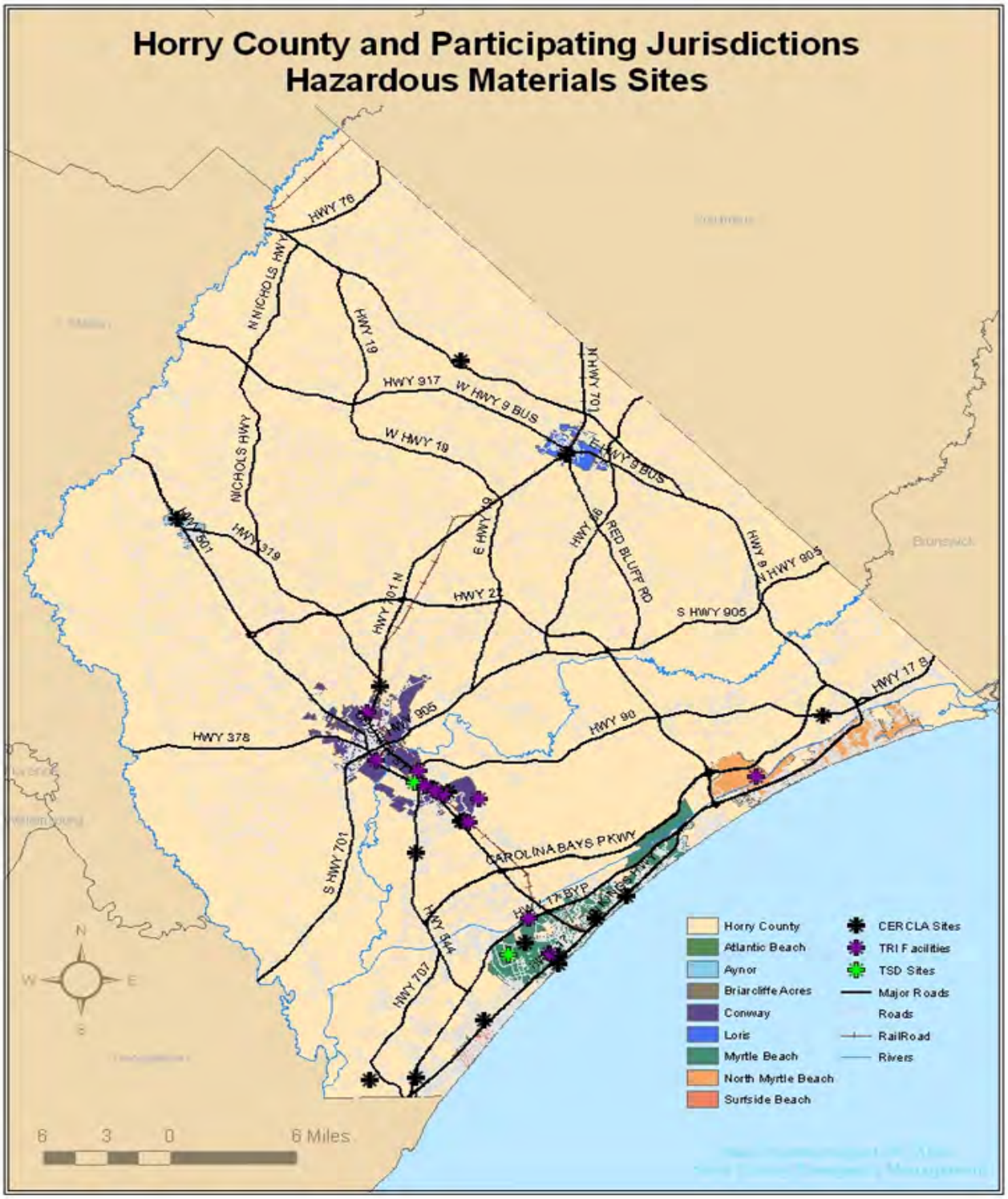
Consequence Analysis	
HAZARD: Hazardous Materials Release/Spills	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

Figure 5.16: Hazard Frequency of Occurrence, Social Vulnerability, and Place Vulnerability Scores for Hazardous Material Incident Hazards

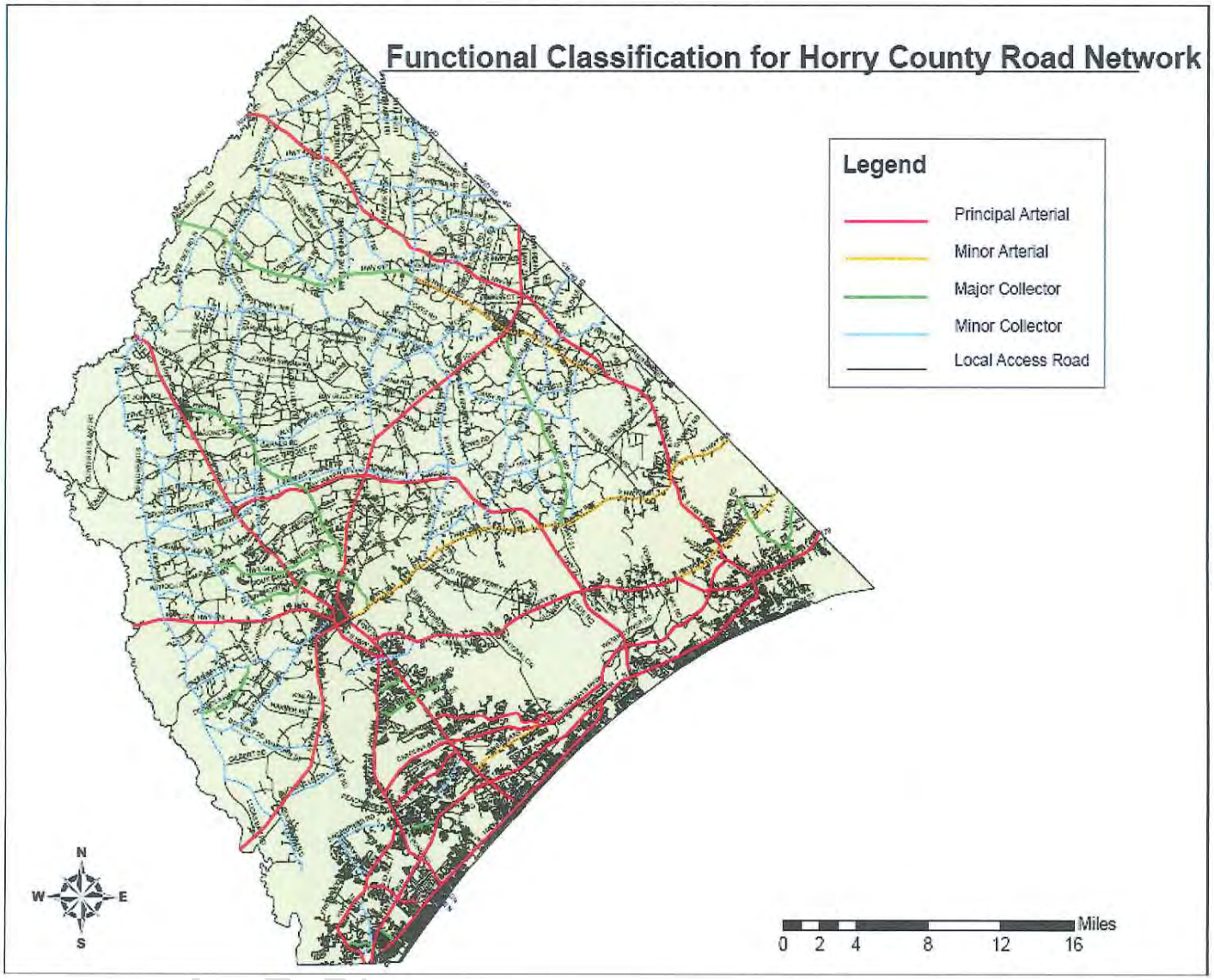
Data analyzed represent the number of hazardous materials spills reported to the National Emergency Response Notification System (ERNS). These spills include those from fixed facilities and transportation sources by county between 1987 and 2008.There have been 1,187 reported HAZMAT incidents in South Carolina since 2006.





Map Generated by Horry County GIS Department

Map 1: Functional Classification for Horry County Road Network (2008)



Map Generated by Horry County Planning & Zoning Department

3.2.14 TERRORISM

The planning team has reviewed and analyzed this section of the plan in January 2015 and again in June 2020 to verify the information to make sure it was up to date and relevant.

Definition

The US Code of Federal Regulations defines terrorism as "...the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives" (28 C.F.R. Section 0.85).

The Homeland Security Department has updated the Terrorism Alert System to the National Terrorism Advisory System, or NTAS, replacing the old color-coded Homeland Security Advisory System (HSAS). This new system will more effectively communicate information about terrorist threats by providing timely and more detailed information to the public, government agencies, first responders, airports and other transportation hubs, and the private sector.

NTAS alerts will be issued only when credible information is available. These alters will include a clear statement that there is an imminent threat or an elevated threat. There may also be alerts that contain a “sunset” provision indicating a specific date or time period when the alert automatically expires thus, there would not be a continuous NTAS alert.

The Mitigation Task Force agreed that terrorism would be addressed according to the U.S. Department of Homeland Security, chemical, biological, radiological, nuclear and explosive, (CBRNE) devices or agents. Below CBRNE is defined according to the United States Department of Homeland Security.

Chemical A chemical attack is the deliberate release of a toxic gas, liquid or solid that can poison people and the environment.

Biological A biological attack is the deliberate release of germs or other biological substances that can make you sick. Many agents must be inhaled, enter through a cut in the skin or be eaten to make you sick. Some biological agents, such as anthrax, do not cause contagious diseases. Others, like the smallpox virus, can result in diseases you can catch from other people.

Radiological Dispersion Device (RDD) – often called a “dirty nuke” or “dirty bomb” – combines a conventional explosive device – such as a bomb - with radioactive material. The goal of the device is to scatter dangerous and sub-lethal amounts of radioactive material over a general area. The size of the affected area and the level of destruction caused by an RDD would depend on the sophistication and size of the conventional bomb, the type of radioactive material used the quality and quantity of the radioactive material, and the local meteorological conditions – primarily wind and precipitation.

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A **Nuclear** blast is an explosion with intense light and heat, a damaging pressure wave and widespread radioactive material that can contaminate the air, water and ground surfaces for miles around. While experts may predict at this time that a nuclear attack is less likely than other types, terrorism by its nature is unpredictable.

High Explosives, as defined by South Carolina Code, is any chemical compound, mixture, or device, the primary or intended common purpose of which is to function by explosion. The term includes, but is not limited to, dynamite and other high explosives, black powder in quantities in excess of five pounds, pellet powder, initiating explosives, detonators, squibs, and detonating cord.

History of CBRNE

Chemical and Radiological

There are no previous occurrences of chemical or radiological activity and/or threat in Horry County and participating jurisdictions. This area has not been identified in assessments as a high-risk area, in part due to the lack of "hard targets". Horry County and participating jurisdictions remain in close contact with state and federal officials, and participates in both training classes and response drills in case a chemical or radiological incident occurs.

Summary and Conclusion of the Chemical and Radiological Profile

Horry County has not experienced any occurrences relating to chemical or radiological activity, however, if the County were to experience an event it could be catastrophic in nature.

Due to the lack of occurrences of chemical or radiological activity in Horry County, the anticipated "*Frequency of Occurrence*" of future chemical and radiological incidents is rated as ***"Highly Unlikely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

However, the probable "*Consequence of Impact*" of future chemical or radiological incidents is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

WORKING DRAFT

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" (Pg 13), the overall ranking for chemical and radiological incidents in Horry County is ***"1" (Lowest).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Terrorism – Chemical & Radiological	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	There are no seasonal patterns associated with chemical and radiological terrorism events.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to the risk of Hazardous Material release/spills.
PROBABLE DURATION
There is no specific duration of this type of event.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• SLED • FBI • SC Civil Support Team • Local Police & Fire • Horry County Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Terrorism – Chemical & Radiological	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Terrorism – Chemical & Radiological	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

Radiological Unrelated to Terrorism

The northeastern part of Horry County is located within the 50-mile emergency preparedness zone for the Brunswick Boiling Water Reactor. The reactor is located two miles north of Southport, NC. Regardless of our close proximity to the Brunswick reactor, the chance of impacts from an event related to the reactor would be negligible.

Due to the lack of occurrences of radiological events unrelated to terrorism in Horry County, the anticipated "*Frequency of Occurrence*" of future biological incidents is rated as ***"Highly Unlikely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

However, the probable "*Consequence of Impact*" of future radiological events unrelated to terrorism is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for biological incidents in Horry County is ***"1" (Lowest).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Radiological	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	There are no seasonal patterns associated with chemical and radiological terrorism events.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to the risk of Hazardous Material release/spills.
PROBABLE DURATION
There is no specific duration of this type of event.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• SLED • FBI • SC Civil Support Team • Local Police & Fire • Horry County Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Radiological	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Radiological	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

Biological

According to Horry County E-911 there have been 307 biological calls or reports between September 11, 2001 and August 2014. However, none of those calls resulted in an authentic biological situation. We are unable to break down calls by jurisdiction. Regardless any biological threat would not be dealt with on a local level but on a federal level making exact jurisdictional location irrelevant.

Summary and Conclusion of the Biological Profile

Horry County has not experienced any occurrences relating to biological activity, however, if the County were to experience an event it could be catastrophic in nature.

Due to the lack of occurrences of biological activity in Horry County, the anticipated "*Frequency of Occurrence*" of future biological incidents is rated as ***"Highly Unlikely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

However, the probable "*Consequence of Impact*" of future biological incidents is rated as ***"Catastrophic"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for biological incidents in Horry County is ***"1" (Lowest).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Biological	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	There are no seasonal patterns associated with biological terrorism events.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to the risk of Hazardous Material release/spills.

PROBABLE DURATION
There is no specific duration of this type of event.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• SLED • FBI • Local Police & Fire • Horry County Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Biological	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Biological	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

Nuclear

Although there are not nuclear plants located in Horry County or surrounding jurisdictions, Horry County could experience a nuclear terrorist attack. Such an event is highly unlikely however, if happened would be catastrophic. Also, Horry County is in the 50-mile radius of the Ingestion Pathway Zone (IPZ) of the Brunswick Nuclear Power Plant, Southport, NC (Duke Energy).

Summary and Conclusion of the Nuclear Profile

The anticipated "*Frequency of Occurrence*" of future nuclear incidents is rated as ***"Highly Unlikely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

However, the probable "*Consequence of Impact*" of future nuclear incidents is rated as ***"Catastrophic"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for nuclear incidents in Horry County is ***"3" (Medium).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Nuclear	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	There are no seasonal patterns associated with nuclear terrorism events.

AREAS LIKELY TO BE AFFECTED MOST

PROBABLE DURATION
There is no specific duration of this type of event.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• SLED • FBI • SC Civil Support Team • Local Law Enforcement • Horry County Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Nuclear	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Nuclear	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

Explosives

In 2013 Horry County did have a bomb detonation. Fortunately, the detonation did not occur in a very highly populated area. There were no injuries or causalities associated with the explosion. As a county we are aware that if a detonation of a bomb were to occur near densely populated area in the County the consequence of impact could be Catastrophic.

Summary and Conclusion of the Explosives Profile

According to the Horry County Police Department, over the 10 year period 2004-2014, Horry County has experienced 285 incidents involving explosives. However, none of these incidents has

resulted in personal or property damage. There has been only one uncontrolled detonation. From 2015-2020 the Horry County Police Department tracked 461 bomb related calls that ranged from bomb threats at schools, K-9 sweeps for events, found ordinance, suspicious packages, and explosive recovery.

Based on the Horry County Policy Department historical data, an incident involving explosives has occurred every 0.021 years in Horry County. This is calculated by dividing the number of years examined (16) by the number of occurrences (746). The probability of risk is .06% and is determined by the number of years in which one or more uncontrolled explosive detonations occurred (1) divided by the number of years examined (16).

The anticipated "*Frequency of Occurrence*" of future explosive detonations is rated as ***"Possible",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

However, the probable "*Consequence of Impact*" of future explosive detonations is rated as ***"Limited"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for high explosive detonations in Horry County is ***"1" (Lowest).***

Overall Summary and Conclusion of the CBRNE Profile

The federal government-owned facilities (e.g. post offices, etc.) are likely the most vulnerable structures to terrorist threats, followed by the structures associated with the local government in the County. A terrorism annex to the emergency operations plan has been developed to address the county's response to this threat.

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Explosives	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	There are no seasonal patterns associated with explosive terrorism events.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County is susceptible to the risk of explosive risks. Obviously the areas that would be most impacted by this hazard are areas with high population densities.

PROBABLE DURATION
There is no specific duration of this type of event.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• SLED • FBI • SC Civil Support Team • Local Law Enforcement • Emergency Management

WORKING DRAFT

Consequence Analysis	
HAZARD: Explosives	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
Catastrophic	• Major critical infrastructure impacted in all key sectors.
POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Explosives	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

CYBER TERRORISM

The planning team has reviewed and analyzed this section of the plan in January 2015 and again in June 2020 to verify the information to make sure it was up to date and relevant.

Definition

The Council on Foreign Relations defines Cyber terrorism as terrorism that involves computers, networks, and the information they contain. Cyber terror attacks are typically premeditated, politically motivated, perpetrated by small groups rather than governments, and designed to call attention to a cause, spread fear, or otherwise influence the public and decision-makers. Cyber terrorism could involve destroying the actual machinery of the information infrastructure; remotely disrupting the information technology underlying the Internet, government computer networks, or critical civilian systems such as financial networks or mass media; or using computer networks to take over machines that control traffic lights, power plants, or dams in order to wreak havoc.

Cyber Terrorism can be severe depending on the type of attack. Below is a list of different types of cyber terrorism and the extent/severity of their damage according to a paper written by the Asian School of Cyber Law.

1. "*Hacking*" is a generic term for all forms of unauthorized access to a computer or a computer network. Hacking can take on many different forms. The four most well-known are packet sniffing (entering a computers database through its personal ip address), tempest attack (allows someone in the vicinity to view what is currently on the computer screen), password cracking (gain access to different programs by trying every word in a dictionary or most common passwords), and finally the easiest, buffer overflow (involves input of excessive data into a computer; this allows the hacker to insert executable code along with the input, thus enabling the hacker to break into the computer). For the most part this type of cyber terrorism can be mitigated against by use of firewalls; safeguarding against computer downloads, and differentiating passwords for access to different websites.

2. The "*Trojan*" horse program pretends to do one thing while actually doing something completely different. Mostly the trojan attacks a computer's hard drive destroying the entire drive, scrambling important files, or stealing all the users passwords.

3. A "*computer virus*" is a computer program that can infect computer programs by modifying them in such a way as to include a copy of it. Viruses are very dangerous; they spread faster than they are stopped, and even the least harmful of viruses could be fatal.

4. A "*computer worm*" is a self-contained program (or set of programs) that is able to spread functional copies of itself or its segments to other computer systems (usually via network connections). Unlike viruses, worms do not need to attach themselves to a host program. There

WORKING DRAFT

are two types of worms - host computer worms and network worms.

5. "*Email*" has emerged as the world's most preferred form of communication. Like any other form of communication, criminals also misuse email. The ease, speed and relative anonymity of email has made it a powerful tool for criminals. Some of the major email related crimes are email spoofing, spreading Trojans, viruses and worms; email bombing, threatening emails, defamatory emails.

6. "E*ncryption*", is a disturbing trend that is emerging nowadays that is increasing the use of high-frequency encrypted voice/data links, steganography etc. by terrorists and members of organized crime cartels.

History of Cyber Terrorism

The history of cyber-attacks is available on request for official use only. These records are maintained privately to prevent future attacks of the same nature. However, according to Tim Oliver, the Horry County Deputy Director of IT and GIS, Horry County's external website has been breached on a number of occasions, with varied effects from actual defacing of the web site, corruption of the server, to numerous attempts to change administrative passwords and denial of service viruses that cripple the server from functioning. There is a continual need for the county to update and protect our systems from the multiple cyber attempts on the Counties website. The probability of another cyber strike in Horry County and participating jurisdictions is likely.

The City of Conway has implemented the following safety precautions to keep the network and data safe:

- Firewall: The City's firewall is the first defense between our data and the outside world. The firewall is a "Next Generation" device that allows us features including spam filtering, phishing, and virus filtering. It allows Geographical filtering which allows us to block all traffic both inbound and outbound based on a country like Iran.
- Email Security: We employ a "Next Generation" email security device that captures viruses and spam at a high volume.
- Endpoint protection: We utilize both antivirus and anti-exploit software on every desktop, laptop, and server in service. This software is continually updated from a central server.
- Backups: We employ a 3-2-1 rule for backups. This means we have 3 copies of each server, in 2 locations, 1 being offsite. Offsite is the cloud in our case.

City staff will continue to be aggressive and comprehensively thorough in safeguarding the City's data and data systems. This means being both well trained and adequately funded to maintain the publics' expectations of business continuity and privacy. The City had one incident in 2013 whereas an email attachment was opened and executed a virus that spread briefly until it was contained. The above measures were put in place after this incident to prevent it from happening again.

WORKING DRAFT

Summary and Conclusion of the Cyber Terrorism Profile

The Town of Aynor, Town of Briarcliffe Acres, Bucksport Water, City of Conway, Horry County School District, Town of Atlantic Beach, Horry Electric, Horry Telephone Cooperative, City of Loris, Murrells-Inlet Fire Department, Grand Strand Water and Sewerage and the Town of Surfside Beach have had no reports of cyber terrorism.

The anticipated "*Frequency of Occurrence*" of future cyber terrorism is rated as ***"Likely",*** as illustrated in the FEMA chart below.

Frequency of Occurrence	
Highly Likely	Near 100 percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 100 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability in the next year of less than one chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.
Source: FEMA, 1997	

However, the probable "*Consequence of Impact*" of future cyber terrorism is rated as ***"Negligible"***, as illustrated in the FEMA chart below.

Consequence of Impact	
Catastrophic	Multiple deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of properties are severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of properties are severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of properties are severely damaged.
Source: FEMA, 1997	

When these two determinations are applied to the FEMA "Hazard Index Ranking" table (Pg 13), the overall ranking for cyber terrorism in Horry County is ***"2" (Low).***

WORKING DRAFT

Hazard Profile Worksheet

RISK/VULNERABILITY ASSESSMENT	DATE ASSESSMENT COMPLETED: 01/2012 DATE OF ASSESSMENT REVIEW: 07/2014
HAZARD: Cyber Terrorism	Jurisdiction: County-Wide

FUTURE PROBABLE SEVERITY	
Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50% in property destroyed or with major damage. • Major damage to environment with consequences lasting > 5 years • Normal daily operations are severely impaired non-functional
Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of facilities for at least 2 weeks. • 25% to 50% in property destroyed or with major damage. • Major environmental impact with consequences lasting between 1 to 5 years. • Daily operations are hampered for multiple functions across the jurisdiction.
Limited	• Injuries and/or illnesses do not result in a permanent disability. • Complete shutdown of critical facilities for more than 1 week. • 10% to 25% in property destroyed or with major damage. • Minor environmental impact with consequences lasting less than 1 year. • Minor daily operations may be interrupted.
Negligible	• Injuries and/or illnesses are treatable with first aid • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Slight environmental impact with no long term environmental consequences. • Little or no impact to daily operations.

FREQUENCY OF OCCURANCE	SEASONAL PATTERNS
• Highly Likely: Event probable in the next year. • Likely: Event probable in the next 3 years. • Possible: Event possible in the next 5 years. • Unlikely: Event possible in the next 10 years.	With the increasing use of technology Cyber Terrorism is a potential threat at any time for any reason.

AREAS LIKELY TO BE AFFECTED MOST
All of Horry County Government is susceptible to the risk of Cyber Terrorism.

PROBABLE DURATION
There is no specific duration of this type of event.

WARNING TIME	MONITORING ORGANIZATIONS
• Minimal or no warning. • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning.	• Information Technology/GIS

WORKING DRAFT

Consequence Analysis	
HAZARD: Cyber Terrorism	Jurisdiction: County-Wide
POTENTIAL IMPACT ON RESPONDERS	
Negligible	• Little or no impact on responders or routine response operations.
Limited	• Minor impact to some response operations. Not life threatening to responders.
Critical	• Many response functions impacted. Potential life safety issues for responders.
Catastrophic	• Life-threatening impact for multiple responders. All response functions are severely hampered.
POTENTIAL IMPACT ON INFRASTRUCTURE	
Negligible	• Little or no impact on critical infrastructure.
Limited	• Minor impact to some key infrastructure. No widespread impact.
Critical	• Multiple critical infrastructure sectors impacted throughout the jurisdiction.
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POTENTIAL IMPACT ON THE ENVIROMENT	
Negligible	• Slight environmental impact with no long term environmental consequences.
Limited	• Minor environmental impact with consequences lasting less than 1 year.
Critical	• Major environmental impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to environment with consequences lasting >5 years.
POTENTIAL IMPACT ON THE AGRICULTURE	
Negligible	• Slight agricultural impact with no long term agricultural consequences.
Limited	• Minor agricultural impact with consequences lasting less than 1 year.
Critical	• Major agricultural impact with consequences lasting between 1 to 5 years.
Catastrophic	• Major damage to agriculture with consequences lasting >5years.
POTENTIAL IMPACT ON THE COOP/CONTINUED DELIVERY OF SERVICES	
Negligible	• Little or no impact to daily operations. All standard services can continue to be delivered without interruption.
Limited	• Minor daily operations may be interrupted. Delays or suspensions of some services.
Critical	• Daily operations are hampered for multiple functions across the jurisdiction. Many critical services have been inhibited or suspended.
Catastrophic	• Critical services severely impacted. Normal daily operations are non-functional.
POTENTIAL IMPACT ON PUBLIC CONFIDENCE IN GOVERNANCE	
Negligible	• Little to no impact on the public confidence in governance.
Limited	• Minor loss of confidence in governance in a small percentage of the population.
Critical	• 60% of the public has eroded confidence in governance.
Catastrophic	• Public confidence in > 60% of the population has been adversely impacted.

WORKING DRAFT

Consequence Analysis	
HAZARD: Cyber Terrorism	Jurisdiction: County-Wide
POTENTIAL IMPACT ON THE PUBLIC	
Negligible	• Insignificant direct impact on the public or their safety.
Limited	• Minor or isolated instances of direct public impact.
Critical	• < 25% of the public is directly impacted OR significant number of illness or injury that could result in permanent disability.
Catastrophic	• >25% of the public directly impacted OR widespread multiple deaths.
POTENTIAL IMPACT ON PROPERTY	
Negligible	• Limited or no impact to property
Limited	• Minor isolated instances of property damage
Critical	• Widespread minor property damage OR multiple instances of significant property damage.
Catastrophic	• More than 50% of property destroyed or with major damage.
POTENTIAL IMPACT ON FACILITIES	
Negligible	• Little or no impact to structural facilities.
Limited	• Minor isolated instances of damage to facilities
Critical	• Widespread minor facility damage OR multiple instances of significant facility damage.
Catastrophic	• More than 50% of facilities within area destroyed or with major damage.
POTENTIAL IMPACT ON ECONOMIC CONDITION	
Negligible	• Little to no impact to the economic condition of the jurisdiction
Limited	• Minor economic impact. Economic recovery will take < 1 year.
Critical	• Economic condition has been greatly impacted. Will require 1-5 years to recover.
Catastrophic	• Immense economic impact. Economic recovery lasting > 5 years.
POTENTIAL IMPACT ON TOURISM	
Negligible	• Little or no impact on tourism.
Limited	• Minor tourism impact with consequences last less than 3 months.
Critical	• Major tourism impact with consequences lasting 3 months to 6 months.
Catastrophic	• Major tourism impact with consequences lasting more than 6 months.

WORKING DRAFT

3.3 ASSESSING VULNERABILITY

The planning team reviewed and analyzed this section of the plan. The team updated several graphs and charts in this section in January 2015 and again in June 2020 to ensure correctness for each jurisdiction and special purpose district participating in the plan.

Throughout the year, Horry County is susceptible to numerous natural disasters. While some of these hazards are likely to occur at any time, some hazards are only a threat during certain times of the year. The Vulnerability Assessment provides information concerning the effects of each hazard and the times of year the county is most vulnerable. Assessing the hazards shows the impact that each hazard will have on our environment, infrastructure, population, and economy.

Horry County and participating jurisdictions are vulnerable to man-made hazards at any given time. Man-made hazards do not fit into a box like natural hazards, they are not predictable and the degree of vulnerability varies greatly depending on multiple independent factors.

The most important element of the Vulnerability Assessment understands which hazards could impact the area the greatest. The chart shows the most destructive hazard to Horry County, a Category five Hurricane, to the least destructive, Lightning.

Hazard Ranking Assessment				
Hazard	**Past Federal Declarations**	**Frequency**	**Impact**	**Hazard Ranking**
Natural Hazards				
Hurricane	Yes	Highly Likely	Critical	4
Storm Surge	No	Possible	Negligible	1
Earthquake	No	Highly Unlikely	Catastrophic	2
Wildfire	Yes	Highly Likely	Negligible	3
Flooding	Yes	Highly Likely	Negligible	3
Tornados	No	Likely	Negligible	2
Severe Thunderstorms	No	Highly Likely	Negligible	3
Lightning	No	Likely	Negligible	2
Winter Storms	No	Likely	Limited	3
Drought	No	Possible	Negligible	1
Extreme Heat	No	Possible	Negligible	1
Tsunami	No	Highly Unlikely	Negligible	1
Man Made Hazards				
Hazardous Materials	N/A	Highly Likely	Negligible	3
Terrorism-Chemical/Radiological	N/A	Highly Unlikely	Negligible	1
Terrorism-Biological	N/A	Highly Unlikely	Negligible	1
Terrorism-Nuclear	N/A	Highly Unlikely	Negligible	1
Terrorism-Explosives	N/A	Unlikely	Limited	1
Cyber Terrorism	N/A	Likely	Negligible	2

WORKING DRAFT

According to the above chart, a category 5 hurricane is the event that in all likelihood would cause the most severe damage to Horry County. There are three main devastating components in a hurricane: storm surge, flooding from rain, and wind. In a Category 5 storm the sustained winds can be 155 mph and up. At that level, the wind will be responsible for most of the sustained damage to structures throughout the County.

Based on Hurrevac 2000, a hurricane decision assistance and planning tool developed for government emergency management by Sea Island Software, Inc. with support from the Federal Emergency Management Agency (FEMA), the US Army Corps of Engineers and NOAA (NWS), the structures at risk are those located within the Wind Decay Model in the Max Envelope of Wind (MEOW).

The MEOW is set at a Southeast approach with maximum sustained winds and forward speed. By using this worst-case scenario MEOW, the County is split in two different wind fields.

As seen on the following map, the front half of the county including the Town of Surfside, the Town of Briarcliffe Acres and the City of Conway, is faced with winds of 127 mph and greater. The backside of the County including the Town of Aynor and the City of Loris is faced with winds of 109 mph to 126 mph. According to the GIS spatial structure and parcel information available through the Horry County Assessor's Office, the structures susceptible to wind damage from a category 5 hurricane are as follows:

TYPE OF STRUCTURE	NUMBER OF STRUCTURES IN WIND LOAD AREA 127 MPH & GREATER	NUMBER OF STRUCTURES IN WIND LOAD AREA 109 MPH TO 126 MPH
Residential	66,191	13,172
Non-Residential	96,786	11,620
Critical Facilities		
Airports	3	1
Towers	14	0
Bridges	120	214
Police Stations	4	2
Fire/Rescue Stations	42	18
Hospitals	4	1
Power Utilities	2	0
Schools	101	44

Structural wind damages from the 127 MPH and greater wind load area, the front half of the county, could cost in excess of 15 million dollars for a category 5 hurricane. Structural wind damages from the 109 MPH to 126 MPH wind load area, the backside of the county, could cost in excess of 900 thousand dollars for a category 5 hurricane.

The last time the eye of a hurricane directly impacted Horry County was Hurricane Hazel in 1954. Hazel was a Category 4 Hurricane and has been the strongest category hurricane to hit Horry County. This hurricane affected the northern portion of the county the hardest, destroying buildings and infrastructure, as well as negatively impacting the local economy.

In 1954 development was minimal in the impacted area, today the landscape has changed dramatically.

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This area is now dotted with housing developments, businesses, industry and of course, tourism facilities. If the same type of storm were to impact the coast today, the road to recovery and the cost to repair would be quite different from just over 50 years ago.

The second most devastating event would be a major flood event. This hazard has occurred in Horry County numerous times in the last 5 years and the recovery process is ongoing. Flooding has caused the evacuation of 20,000 citizens and in the Conway area when the fear of the loss of several main pump stations seemed imminent. The floodwaters also came within inches of cutting off several main access roads to the County. A normal twenty-minute commute took over four hours in many instances for several days during the flooding events. Schools and businesses were closed, and over five hundred homes were flooded. Flooding from Hurricane Florence in 2018 resulted in SC Department of Transportation and Army Corps of Engineers to construct a flood barrier wall on Hwy 501 at Lake Busbee to keep flooding from taking over that road. The floods in Horry County have estimated to cost over 25 million dollars; however that estimation appears extremely low, in tourism alone perhaps that amount, but overall much higher. For instance, the property acquisition portion was over 2.4 million dollars for the 2014 floods.

The magnitude/severity of an event also plays a part in the impact it has on Horry County. For instance, in the following charts a Category 1 Hurricane affects a smaller population than opposed to a Category 3 Hurricane. However, the duration of a hazard can cause just as much of a challenge to Horry County, regardless of the population affected. Horry County, in addressing the hazards in this manner, develops an outlook of the overall hazard's impact and effect in regards to every element of a storm.

The chart below is a helpful tool in determining which months the county faces the most vulnerability. It was created by averaging the risk probability (values 1-5) for each month.

Risk Calendar by Highest Probability					
August	3.79	October	3.35	February	3.09
September	3.76	April	3.32	January	3.06
July	3.71	May	3.26	November	3.03
June	3.47	March	3.15	December	2.94

By referencing the risk calendar, it is evident that the high tourism months, July through September are also the highest hazard risk months, not to mention the height of hurricane season. Horry County is home to more than 320,000 residents and can hosts 17 million visitors annually. During the height of tourist season, there can be 1 million or more tourists on the coastline. With only a few bridges and main roads out of the County, mass evacuation of the Grand Strand is a challenge.

The summer months also fuel the economy; therefore, a hurricane would have a devastating effect on the local economic situation. After Hurricane Floyd, tourism dropped drastically in the region. Hurricane Irene, which followed just weeks behind, further impacted this region's economic situation. With evacuations ordered in 2016 for Hurricane Matthew, 2018 for Hurricane Florence and again in 2019 for Hurricane Dorian, the economic effects are still being calculated.

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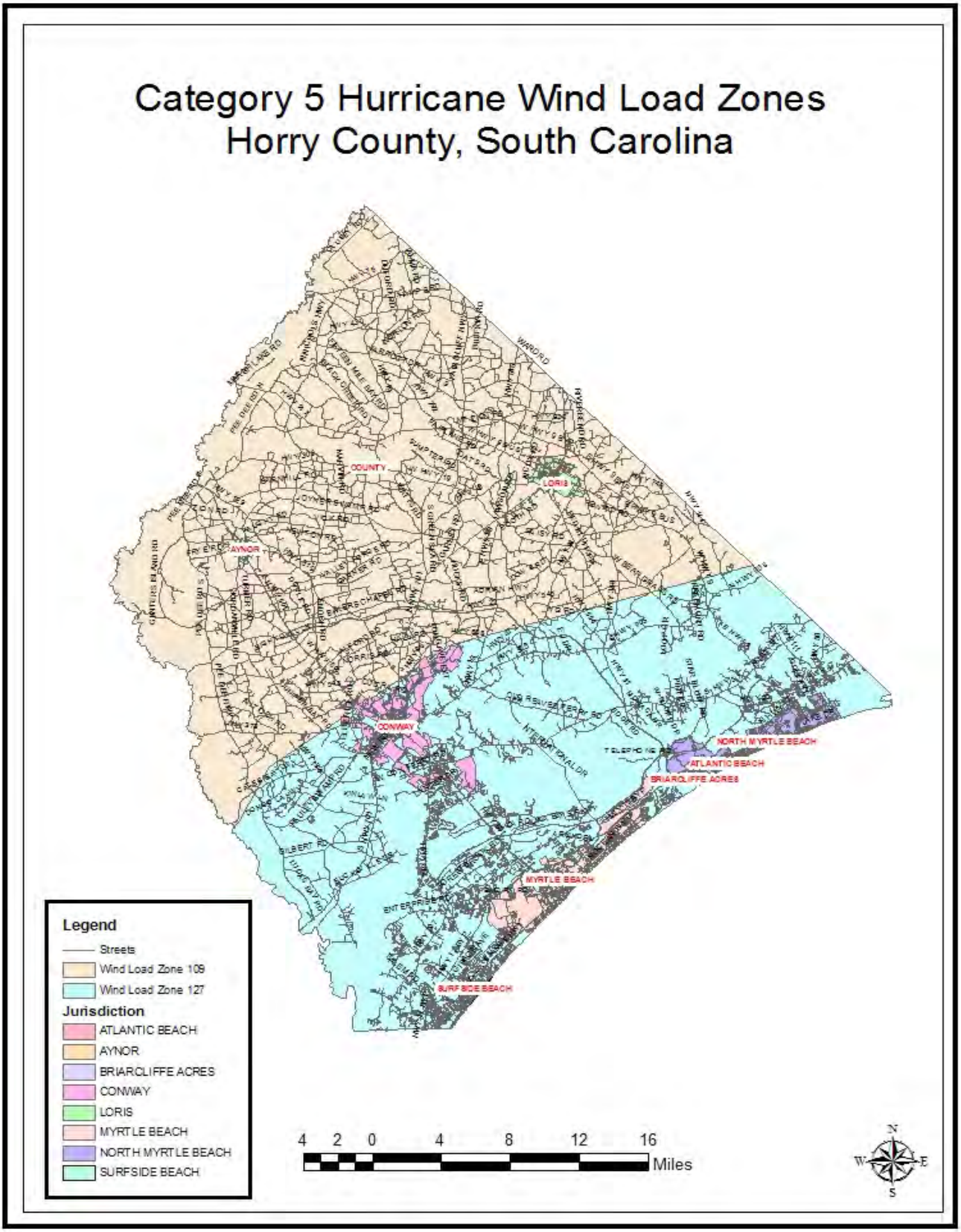
Category 5 Hurricane Wind Load Zones
Horry County, South Carolina
COUNTY
LORIS
AYNOR
CONWAY
NORTH MYRTLE BEACH
ATLANTIC BEACH
BRIARCLIFFE ACRES
MYRTLE BEACH
SURFSIDE BEACH
Legend
Streets
Wind Load Zone 109
Wind Load Zone 127
Jurisdiction
ATLANTIC BEACH
AYNOR
BRIARCLIFFE ACRES
CONWAY
LORIS
MYRTLE BEACH
NORTH MYRTLE BEACH
SURFSIDE BEACH
4 2 0 4 8 12 16
Miles
N
W
E
S

During the rewrite process this list was updated from the E-Plan data system for Tier 2 reporting requirements. There are over 600 facilities within Horry County and surrounding jurisdictions that report the usage or storage of Extremely Hazardous Substances, (EHS). Below is a list of all facilities and their municipality location within the County.

Facility Name	City
GSWSA - Horry - Daisy ASR Well	Loris
GSWSA - Horry - Daisy ASR Well	Loris
GSWSA - Horry - Jamestown ASR Well	Garden City
GSWSA - Horry - Jamestown ASR Well	Garden City
GSWSA - Bucksport Regional WWTP	Conway
GSWSA - Bucksport Regional WWTP	Conway
GSWSA - Bucksport Regional WWTP	Conway
Seaside ASR Well	Murrells Inlet
Seaside ASR Well	Murrells Inlet
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
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SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SCP Distributors LLC Br#148	Myrtle Beach
SC-1985_Charter Communications_MYRTLE BEACH	Myrtle Beach
SC-1985_Charter Communications_MYRTLE BEACH	Myrtle Beach
Rinker Materials	Aynor
Rinker Materials	Aynor
Rinker Materials	Aynor
Myrtle Beach Plant 2	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach

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Myrtle Beach Yacht Club at Coquina Harbour	Little river
Myrtle Beach Yacht Club at Coquina Harbour	Little river
Myrtle Beach Yacht Club at Coquina Harbour	Little river
Costco Wholesale (0338)	Myrtle Beach
Costco Wholesale (0338)	Myrtle Beach
Costco Wholesale (0338)	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach
Myrtle Beach Plant 2	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
AVX Corp. Myrtle Beach Plant	Myrtle Beach
New North Myrtle Beach	Longs
New North Myrtle Beach	Longs
New North Myrtle Beach	Longs
New North Myrtle Beach	Longs
New North Myrtle Beach	Longs
New North Myrtle Beach	Longs
New North Myrtle Beach	Longs
New North Myrtle Beach	Longs
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor

WORKING DRAFT

Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Nutrien Ag Solutions 305	Aynor
Canfor Southern Pine - Conway Plant (HO4288)	Conway
Canfor Southern Pine - Conway Plant (HO4288)	Conway
Canfor Southern Pine - Conway Plant (HO4288)	Conway
Canfor Southern Pine - Conway Plant (HO4288)	Conway
Canfor Southern Pine - Conway Plant (HO4288)	Conway
Canfor Southern Pine - Conway Plant (HO4288)	Conway
Canfor Southern Pine - Conway Plant (HO4288)	Conway
Canfor Southern Pine - Conway Plant (HO4288)	Conway
Conway	Conway
Conway	Conway
Conway	Conway
Conway	Conway
Conway	Conway
Conway	Conway
Conway	Conway
Conway	Conway
Conway	Conway
Conway	Conway
Carroll's LLC dba NTW # 3185	Conway
C.R. Jackson, Inc. - Conway Office, Shop & Asphalt Plant #404	Conway
C.R. Jackson, Inc. - Conway Office, Shop & Asphalt Plant #404	Conway
C.R. Jackson, Inc. - Conway Office, Shop & Asphalt Plant #404	Conway
C.R. Jackson, Inc. - Conway Office, Shop & Asphalt Plant #404	Conway
C.R. Jackson, Inc. - Conway Office, Shop & Asphalt Plant #404	Conway
Verizon Wireless EDGE (SCW23655640)	N. Myrtle Beach
Santee Cooper: Dunes 115-12kV Substation	Myrtle Beach

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Avis Rent A Car System, LLC - Myrtle Beach IA - QTA	Myrtle Beach
Santee Cooper: Garden City 115-12kV Substation	Garden City
SC, MYRTLE BEACH WAREHOUSE	Myrtle Beach
Santee Cooper: Caropines 115-12kV Substation	Surfside
Santee Cooper: Loris Commerce Center 34-12 kV Substation	Loris
HD Supply Construction Supply, Ltd (WC271)	Conway
HD Supply Construction Supply, Ltd (WC271)	Conway
HD Supply Construction Supply, Ltd (WC271)	Conway
HD Supply Construction Supply, Ltd (WC271)	Conway
HD Supply Construction Supply, Ltd (WC271)	Conway
North Myrtle Beach High Service Pump Station	N. Myrtle Beach
North Myrtle Beach High Service Pump Station	N. Myrtle Beach
Santee Cooper: Singleton Ridge 115-12kV Substation	Conway
TruGreen LP	Myrtle Beach
TruGreen LP	Myrtle Beach
TruGreen LP	Myrtle Beach
TruGreen LP	Myrtle Beach
TruGreen LP	Myrtle Beach
TruGreen LP	Myrtle Beach
TruGreen LP	Myrtle Beach
Santee Cooper: Spivey Beach 115-12kV Substation	Myrtle Beach
Cherry Grove Booster Station	N. Myrtle Beach
Cherry Grove Booster Station	N. Myrtle Beach
Santee Cooper: North Myrtle Beach Warehouse	N. Myrtle Beach
Santee Cooper: North Myrtle Beach Warehouse	N. Myrtle Beach
Santee Cooper: North Myrtle Beach Warehouse	N. Myrtle Beach
S&W Little River Plant	Little River
S&W Little River Plant	Little River
S&W Little River Plant	Little River
S&W Little River Plant	Little River
S&W Little River Plant	Little River
S&W Little River Plant	Little River
S&W Little River Plant	Little River
S&W Little River Plant	Little River
Crescent Beach Wastewater Treatment Facility	N. Myrtle Beach
Crescent Beach Wastewater Treatment Facility	N. Myrtle Beach
Crescent Beach Wastewater Treatment Facility	N. Myrtle Beach
Santee Cooper: Forestbrook 115-12kV Substation	Myrtle Beach
Santee Cooper: Horry County Landfill Gas Generating Station	Conway
Santee Cooper: Horry County Landfill Gas Generating Station	Conway
S&W Conway Plant	Conway

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S&W Conway Plant	Conway
S&W Conway Plant	Conway
S&W Conway Plant	Conway
S&W Conway Plant	Conway
S&W Conway Plant	Conway
S&W Conway Plant	Conway
S&W Conway Plant	Conway
Santee Cooper: Wampee 115-12kV Substation	Little River
Ocean Drive Wastewater Treatment Facility	N. Myrtle Beach
Ocean Drive Wastewater Treatment Facility	N. Myrtle Beach
Ocean Drive Wastewater Treatment Facility	N. Myrtle Beach
Santee Cooper: 48th Avenue 115-12kV Substation	Myrtle Beach
Procurement	N. Myrtle Beach
S&W Myrtle Beach Plant	Myrtle Beach
S&W Myrtle Beach Plant	Myrtle Beach
Santee Cooper: Woodland Park 115-12kV Substation	Myrtle Beach
Santee Cooper: Ocean Drive 115-12kV Substation	N. Myrtle Beach
Lift Station 36	N. Myrtle Beach
S&W Murrells Inlet Plant	Murrells Inlet
S&W Murrells Inlet Plant	Murrells Inlet
S&W Murrells Inlet Plant	Murrells Inlet
S&W Murrells Inlet Plant	Murrells Inlet
Santee Cooper: Myrtle Beach 115-34kV Substation	Myrtle Beach
S&W Murrells Inlet Plant	Murrells Inlet
S&W Murrells Inlet Plant	Murrells Inlet
S&W Murrells Inlet Plant	Murrells Inlet
Lift Station 32	N. Myrtle Beach
Santee Cooper: Conway Service Center	Conway
Santee Cooper: Pine Level 115-34kV Substation	Loris
North Myrtle Beach Aquatic & Fitness Center	N. Myrtle Beach
Lowe's of N. Myrtle Beach, SC (Store #0603)	N. Myrtle Beach
Santee Cooper: Perry Road 230-115kV Substation	Myrtle Beach
Lowe's of Conway, SC (Store #1705)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway

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Santee Cooper: Loris No. 1 34-12kV Substation	Loris
Lowe's of S. Myrtle Beach, SC (Store #1004)	Myrtle Beach
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Metglas Inc (Formerly Honeywell International)	Conway
Santee Cooper: Red Bluff 230-115kV Substation	Loris
Lowe's of Myrtle Beach, SC (Store #0410)	Myrtle Beach
McLeod Health Loris	Loris
Santee Cooper: Little River 115-12kV Substation	Little River
CFLS SC North Myrtle Beach	Little River
CFLS SC North Myrtle Beach	Little River
CFLS SC North Myrtle Beach	Little River
CFLS SC North Myrtle Beach	Little River
CFLS SC North Myrtle Beach	Little River
TPI ASR Well	Myrtle Beach
TPI ASR Well	Myrtle Beach
Santee Cooper: Chestnut Hill 115-12kV Substation	Myrtle Beach
CFLS SC North Myrtle Beach	Little River
Deerfield ASR Well	Myrtle Beach
Deerfield ASR Well	Myrtle Beach
Santee Cooper: Jetport 115-12kV Substation	Myrtle Beach
Santee Cooper: Briarcliffe 115-12kV Substation	Myrtle Beach
Conway Bulk Plant	Conway
Suburban Propane L.P. Myrtle Beach	Myrtle Beach
Holmestown Plant	Surfside Beach
Santee Cooper: Homewood Substation	Conway
Suburban Propane L.P. Conway Plant	Conway
Mt. Zion rd Plant	Little River
Santee Cooper: Myrtle Beach Warehouse and Tech Svs Building	Myrtle Beach
Santee Cooper: Myrtle Beach Warehouse and Tech Svs Building	Myrtle Beach
Santee Cooper: Myrtle Beach Warehouse and Tech Svs Building	Myrtle Beach
Loris Plant	Loris
Santee Cooper: North Conway 115-12kV Substation	Conway
Santee Cooper: Washington Park 115-12kV Substation	Myrtle Beach
Battle Oil Co.,Inc.	Nichols
Battle Oil Co.,Inc.	Nichols
Santee Cooper: Grainger Generating Station	Conway

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Santee Cooper: Grainger Generating Station	Conway
Argos USA N Myrtle Concrete Plant	Little River
Argos USA N Myrtle Concrete Plant	Little River
Argos USA N Myrtle Concrete Plant	Little River
Argos USA N Myrtle Concrete Plant	Little River
Myrtle Beach	Myrtle Beach
Myrtle Beach	Myrtle Beach
Myrtle Beach	Myrtle Beach
Santee Cooper: Avalon 115-12kV Substation	Myrtle Beach
Argos USA Surfside Concrete Plant	Myrtle Beach
Argos USA Surfside Concrete Plant	Myrtle Beach
Argos USA Surfside Concrete Plant	Myrtle Beach
Argos USA Surfside Concrete Plant	Myrtle Beach
Argos USA Surfside Concrete Plant	Myrtle Beach
Argos USA Surfside Concrete Plant	Myrtle Beach
Argos USA Surfside Concrete Plant	Myrtle Beach
Santee Cooper: Dick Pond Substation	Myrtle Beach
Argos USA Conway Concrete Plant	Conway
Argos USA Conway Concrete Plant	Conway
Argos USA Conway Concrete Plant	Conway
Argos USA Conway Concrete Plant	Conway
Myrtle Beach Air Traffic Control Tower (MYR ATCT)	Myrtle Beach
Santee Cooper: Loris No. 2 34-12kV Substation	Loris
Horry Electric Cooperative, Inc. Pine Island- Substation # 31	Myrtle Beach
Santee Cooper: Garden City Warehouse	Murrells Inlet
Santee Cooper: Garden City Warehouse	Murrells Inlet
Santee Cooper: Garden City Warehouse	Murrells Inlet
Myrtle Beach Armory	Myrtle Beach
Santee Cooper: Cherry Grove 115-12kV Substation	N Myrtle Beach
Horry Electric Cooperative, Inc. Midway - Substation # 09	Galivants Ferry
Santee Cooper: Klondike 115-12kV Substation	Bucksport
Market Express-Longs	Longs
Market Express-Longs	Longs
Horry Electric Cooperative, Inc. Aynor - Substation # 16	Galivants Ferry
Santee Cooper: South Prong 115-34-12kV Substation	Myrtle Beach
Horry Electric Cooperative, Inc. Grande Dunes - Substation # 94	Myrtle Beach
Santee Cooper: Race Path 115-12kV Substation	Myrtle Beach
Waste Industries, Myrtle Beach	Conway
Waste Industries, Myrtle Beach	Conway
Waste Industries, Myrtle Beach	Conway
Santee Cooper: Nixons Crossroads Substation	Little River

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Horry Electric Cooperative, Inc. Island Green- Substation# 33	Myrtle Beach
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Santee Cooper: Windy Hill 115-12kV Substation	N. Myrtle Beach
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Southern States Cooperative 72049	Loris
Horry Electric Cooperative, Inc. Burgess - Substation # 80	Myrtle Beach
Santee Cooper: Crescent Beach 115-12kV Substation	N. Myrtle Beach
National Car Rental / Alamo Rent-A-Car	Myrtle Beach
Santee Cooper: Glenns Bay 115-12kV Substation	Murrells Inlet
Horry Electric Cooperative, Inc. Barefoot - Substation # 39	N. Myrtle Beach
Frontier SURFSIDE BCH, LONGBAY CO - HWY 17 S (FTR- 971-51383-83039)	MYRTLE BEACH
Frontier SURFSIDE BCH, LONGBAY CO - HWY 17 S (FTR- 971-51383-83039)	MYRTLE BEACH
Frontier CONWAY, CO LAUREL ST - 414 LAUREL ST (FTR- 971-51370-83025)	CONWAY
Frontier CONWAY, CO LAUREL ST - 414 LAUREL ST (FTR- 971-51370-83025)	CONWAY
Santee Cooper: East Conway 115-12kV Substation	Conway
Frontier MYRTLE BCH, OCEAN VIEW CO - 67TH AVE N (FTR- 971-51383-83038)	MYRTLE BEACH
Frontier MYRTLE BCH, OCEAN VIEW CO - 67TH AVE N (FTR- 971-51383-83038)	MYRTLE BEACH
Frontier MYRTLE BEACH, MBCH MAIN/C- 914 CHESTER ST (FTR- 971-51383-55009)	MYRTLE BEACH
Frontier MYRTLE BEACH, MBCH MAIN/C- 914 CHESTER ST (FTR- 971-51383-55009)	MYRTLE BEACH
Frontier LITTLE RIVER, NORTH MYRTLE BEACH - 2500 LITTLE RIVER NECK RD (FTR- 971-51610-83041)	N. Myrtle Beach
Horry Electric Cooperative, Inc. Quail Creek - Substation # 05	Conway
Frontier SOUTH MYRTLE BEACH, 11TH AVE/YO - 11TH AVE S & YAU (FTR- 971-51383-55013)	MYRTLE BEACH
Frontier MYRTLE BCH, TOLL BLDG - 919 LUMBER ST (FTR- 971-51383-83040)	MYRTLE BEACH
Frontier MYRTLE BCH, TOLL BLDG - 919 LUMBER ST (FTR- 971-51383-83040)	MYRTLE BEACH

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Frontier WINDY HILL CO - 3308 POINSETT ST (FTR- 971-51394-83052)	N. Myrtle Beach
Frontier WINDY HILL CO - 3308 POINSETT ST (FTR- 971-51394-83052)	N. Myrtle Beach
Santee Cooper: Myrtle Beach Combustion Turbine	Myrtle Beach
Santee Cooper: Myrtle Beach Combustion Turbine	Myrtle Beach
Santee Cooper: Myrtle Beach Combustion Turbine	Myrtle Beach
Santee Cooper: Myrtle Beach Combustion Turbine	Myrtle Beach
Frontier CEV MYRTLE BCH, 600 48TH AVE NORTH (FTR- 971-51610-88299)	MYRTLE BEACH
Santee Cooper: Hurl Rock 115-34-12kV Substation	Myrtle Beach
Horry Electric Cooperative, Inc.- Warehouse # 1 Main Office	Conway
Horry Electric Cooperative, Inc.- Warehouse # 1 Main Office	Conway
Horry Electric Cooperative, Inc.- Warehouse # 1 Main Office	Conway
Santee Cooper: Oil Engine 115-12kV Substation	Myrtle Beach
Airgas National Welders - S258 - Myrtle Beach	Myrtle Beach
Airgas National Welders - S258 - Myrtle Beach	Myrtle Beach
Airgas National Welders - S258 - Myrtle Beach	Myrtle Beach
Airgas National Welders - S258 - Myrtle Beach	Myrtle Beach
Airgas National Welders - S258 - Myrtle Beach	Myrtle Beach
Santee Cooper: River Oaks Substation	Myrtle Beach
Horry Electric Cooperative, Inc. Four Mile - Substation # 18	Conway
Santee Cooper: Surfside 115-12kV Substation	Surfside
Santee Cooper: Allen 115-34kV Substation	Conway
Horry Electric Cooperative, Inc. South Conway - Substation # 60	Conway
Santee Cooper:Horry/Georgetown Division Headquarters, Transportation Services	Myrtle Beach
Santee Cooper:Horry/Georgetown Division Headquarters, Transportation Services	Myrtle Beach
Santee Cooper:Horry/Georgetown Division Headquarters, Transportation Services	Myrtle Beach
Horry Electric Cooperative, Inc. Socastee - Substation # 10	Myrtle Beach
Santee Cooper: Conway 115-34kV Substation	Conway
SUNCO POOL COMPANY	MYRTLE BEACH
SUNCO POOL COMPANY	MYRTLE BEACH
SUNCO POOL COMPANY	MYRTLE BEACH
SUNCO POOL COMPANY	MYRTLE BEACH
SUNCO POOL COMPANY	MYRTLE BEACH
SUNCO POOL COMPANY	MYRTLE BEACH
Horry Electric Cooperative, Inc. Longs - Substation # 06	Longs
Santee Cooper: 21st Avenue 115-12kV Substation	Myrtle Beach
Santee Cooper: Prince Creek 115-12 kV Substation	Murrells Inlet
Horry Electric Cooperative, Inc - Dunn Shortcut Substation #44	Conway
Santee Cooper: Burroughs Road	Myrtle Beach
Horry Electric Cooperative, Inc. Cool Spring - Substation # 03	Aynor
Santee Cooper: Cane Patch 115-12kV Substation	N. Myrtle Beach
Battle LP Gas Company	Nichols

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Santee Cooper: Bucksville 230-115kV Substation	Conway
Horry Electric Cooperative, Inc. Brooksville - Substation # 98	N. Myrtle Beach
Battle LP Gas Company	Aynor
Santee Cooper: Thompson Farm Substation	Conway
Horry Electric Cooperative, Inc. Goretown - Substation	Loris
Aynor Section Shed	Aynor
Aynor Section Shed	Aynor
Aynor Section Shed	Aynor
Santee Cooper: Carolina Forest 230-115kV Substation	Myrtle Beach
Marion Maintenance	Aynor
Marion Maintenance	Aynor
Marion Maintenance	Aynor
Marion Maintenance	Aynor
Marion Maintenance	Aynor
Marion Maintenance	Aynor
Marion Maintenance	Aynor
Santee Cooper: Azalea Lakes 115-12kV Substation	Myrtle Beach
Horry Electric Cooperative, Inc.- Warehouse # 2	Conway
Conway Steel Products Division	Conway
Conway Steel Products Division	Conway
Conway Steel Products Division	Conway
Conway Steel Products Division	Conway
Conway Steel Products Division	Conway
Conway Steel Products Division	Conway
Conway Steel Products Division	Conway
Horry Electric Cooperative, Inc. Allsbrook - Substation # 02	Loris
Horry Telephone Cooperative, Inc. --- Loris Central Office	Loris
Horry Telephone Cooperative, Inc. --- Loris Central Office	Loris
Horry Electric Cooperative, Inc. Green Sea - Substation # 13	Green Sea
SC-1989_Charter Communication, Carolina Forest Hub	Myrtle Beach
SC-1985_Charter Communication, Myrtle Beach Headend/Tower	Myrtle Beach
SC-1985_Charter Communication, Myrtle Beach Headend/Tower	Myrtle Beach
SC-1985_Charter Communication, Myrtle Beach Headend/Tower	Myrtle Beach
Horry Electric Cooperative, Inc. Shell - Substation # 08	Conway
Horry Telephone Cooperative, Inc. --- CATV Headend Bldg.	Conway
SC-1948_Charter Communication, Conway Hub	Conway
Horry Electric Cooperative, Inc. Nixonville - Substation# 19	Conway
SC-1959_Charter Communication, Surfside Hub	Myrtle Beach
Horry Electric Cooperative, Inc. Jones Road - Substation # 30	Myrtle Beach
Horry Telephone Cooperative, Inc. --- River Oaks Remote	Myrtle Beach
Conway, SC	Conway

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Horry Electric Cooperative, Inc. Cedar Creek - Substation # 01	Nichols
Myrtle Beach International Airp - RAC - 1867-12	Myrtle Beach
Myrtle Beach International Airp - RAC - 1867-12	Myrtle Beach
Horry Electric Cooperative Inc. Lake Ridge Substation	Myrtle Beach
Horry Telephone Cooperative, Inc. --- Forestbrook Central Office	Myrtle Beach
Horry Electric Cooperative Inc. Collins Creek-Substation #82	Murrells Inlet
Myrtle Beach Aviation	Myrtle Beach
Myrtle Beach Aviation	Myrtle Beach
McLeod Health Seacoast	Little River
Horry Telephone Cooperative, Inc. --- Palmetto Point Remote	Myrtle Beach
Conway Horry County Airport	Conway
Conway Horry County Airport	Conway
beach aviation services	N. Myrtle Beach
beach aviation services	N. Myrtle Beach
Coastal Carolina University	Conway
Coastal Carolina University	Conway
Horry Telephone Cooperative, Inc. --- Garage Area for Refueling	Conway
Horry Telephone Cooperative, Inc. --- Garage Area for Refueling	Conway
Harbourgate Marina	N. Myrtle Beach
Harbourgate Marina	N. Myrtle Beach
Hadwin White Buick GMC Subaru	Conway
SOUTHERN WELDERS SUPPLY CO., INC.	MYRTLE BEACH
SOUTHERN WELDERS SUPPLY CO., INC.	MYRTLE BEACH
Horry Telephone Cooperative, Inc. --- Lakewood Central Office	Myrtle Beach
WOLVERINE BRASS INC.	CONWAY
WOLVERINE BRASS INC.	CONWAY
WOLVERINE BRASS INC.	CONWAY
WOLVERINE BRASS INC.	CONWAY
WOLVERINE BRASS INC.	CONWAY
Horry County Department of Airports	Myrtle Beach
Horry County Department of Airports	Myrtle Beach
Horry County Department of Airports	Myrtle Beach
Grand Strand Medical Center	Myrtle Beach
Horry Telephone Cooperative, Inc. --- Information Services Bldg.	Conway
United Rentals Branch A77	Myrtle Beach
United Rentals Branch A77	Myrtle Beach
Sunway Charters - Myrtle Beach	Myrtle Beach
Sunway Charters - Myrtle Beach	Myrtle Beach
Sunway Charters - Myrtle Beach	Myrtle Beach
Sunway Charters - Myrtle Beach	Myrtle Beach
HORRY MAITNTENANCE (LONGS SECTION SHED)	LONGS

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HORRY MAITNTENANCE (LONGS SECTION SHED)	LONGS
HORRY MAITNTENANCE (LONGS SECTION SHED)	LONGS
HORRY MAITNTENANCE (LONGS SECTION SHED)	LONGS
Horry Telephone Cooperative, Inc. --- Tandem Office	Conway
Horry Telephone Cooperative, Inc. --- Tandem Office	Conway
HORRY MAINTENANCE (CONWAY)	CONWAY
HORRY MAINTENANCE (CONWAY)	CONWAY
HORRY MAINTENANCE (CONWAY)	CONWAY
HORRY MAINTENANCE (CONWAY)	CONWAY
HORRY MAINTENANCE (CONWAY)	CONWAY
HORRY MAINTENANCE (CONWAY)	CONWAY
HORRY MAINTENANCE (CONWAY)	CONWAY
HORRY MAINTENANCE (CONWAY)	CONWAY
Horry Telephone Cooperative, Inc. --- Jones Remote	Myrtle Beach
THE HOME DEPOT STORE #1122	MURRELLS INLET
THE HOME DEPOT STORE #1116	MYRTLE BEACH
Horry Telephone Cooperative, Inc. --- Collins Creek Central Office	Myrtle Beach
THE HOME DEPOT STORE #1121	N. Myrtle Beach
708 - Gale Contractor Services	Conway
708 - Gale Contractor Services	Conway
708 - Gale Contractor Services	Conway
Horry Telephone Cooperative, Inc. --- Aynor Central Office	Aynor
Speedway 4582	Conway
Speedway 4582	Conway
Speedway 4583	Conway
Speedway 4583	Conway
Speedway 4586	Myrtle Beach
Speedway 4586	Myrtle Beach
Speedway 4589	Conway
Speedway 4589	Conway
Speedway 4591	Myrtle Beach
Speedway 4591	Myrtle Beach
Horry Telephone Cooperative, Inc. --- South Conway Central Office	Conway
Horry Telephone Cooperative, Inc. --- South Conway Central Office	Conway
Speedway 4594	Longs
Speedway 4594	Longs
AT&T - SC4640	GALIVANTS FERRY
AT&T - SC4630	CONWAY
AT&T - LUMBER ST - ABMSD	MYRTLE BEACH
AT&T - LUMBER ST - ABMSD	MYRTLE BEACH
AT&T - LUMBER ST - ABMSD	MYRTLE BEACH

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AYNOR CO - USID111591	AYNOR
AT&T - SC4620	LONGS
Horry Telephone Cooperative, Inc. --- North Conway Central Office	Conway
UPS-Myrtle Beach	Myrtle Beach
Sam's Club #6353	Myrtle Beach
Horry Telephone Cooperative, Inc. --- Floyds Central Office	Nichols
Ryder Transportation Services #2783	Conway
Ryder Transportation Services #2783	Conway
Arnold's Pools Inc	Myrtle Beach
Arnold's Pools Inc	Myrtle Beach
CarMax #6020 Myrtle Beach (MYR)	Myrtle Beach
Arnold's Pools Inc	Myrtle Beach
Arnold's Pools Inc	Myrtle Beach
Arnold's Pools Inc	Myrtle Beach
Arnold's Pools Inc	Myrtle Beach
Osprey Marina, LLC	Myrtle Beach
Osprey Marina, LLC	Myrtle Beach
Osprey Marina, LLC	Myrtle Beach
Arnold's Pools Inc	Myrtle Beach
Arnold's Pools Inc	Myrtle Beach
Osprey Marina, LLC	Myrtle Beach
Osprey Marina, LLC	Myrtle Beach
Osprey Marina, LLC	Myrtle Beach
Grand Strand - Pump Station 164, Evoqua Water Technologies LLC, Operator	Myrtle Beach
Tidelands Rehabilitation Hospital an affiliate of Encompass Health	Little River
Tidelands Rehabilitation Hospital an affiliate of Encompass Health	Little River
Grand Strand, PS 5	Myrtle Beach
Grand Strand - PS 171	Surfside Beach
Sunbelt Rentals PC #020	MYRTLE BEACH
Sunbelt Rentals PC #020	MYRTLE BEACH
North Myrtle Beach; PS 1 / AKA 47th Ave. PS	N. Myrtle Beach
Conway, SC	Conway
UFP Mid-Atlantic, LLC (Plant 288, Conway)	Conway
UFP Mid-Atlantic, LLC (Plant 288, Conway)	Conway
Airgas USA LLC - Myrtle Beach, SC	Myrtle Beach
Airgas USA LLC - Myrtle Beach, SC	Myrtle Beach
Adams Products - MYRTLE BEACH	Myrtle Beach
Adams Products - MYRTLE BEACH	Myrtle Beach
Thomas Concrete- Conway	Conway
Thomas Concrete- Conway	Conway
Thomas Concrete- Conway	Conway

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Thomas Concrete - Conway West	Conway
Thomas Concrete - Conway West	Conway
Thomas Concrete - Conway West	Conway
Scotchman #3117	Myrtle Beach
Thomas Concrete - North Myrtle Beach	Little River
Thomas Concrete - North Myrtle Beach	Little River
Thomas Concrete - North Myrtle Beach	Little River
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Bull Creek SWTP	Conway
GSWSA - Horry - Tern Hall Well	Socastee
GSWSA - Horry - Tern Hall Well	Socastee
GSWSA - Horry - North ASR Well	Longs
GSWSA - Horry - North ASR Well	Longs
GSWSA - Schwartz WWTP	Myrtle Beach
GSWSA - Schwartz WWTP	Myrtle Beach
GSWSA - Schwartz WWTP	Myrtle Beach
GSWSA - Horry - 3rd Ave ASR Well	Surfside
GSWSA - Horry - 3rd Ave ASR Well	Surfside
GSWSA - Horry - Caropines ASR Well	Surfside
GSWSA - Horry - Caropines ASR Well	Surfside
GSWSA - Horry - Perry Rd Well	Myrtle Beach
GSWSA - Horry - Perry Rd Well	Myrtle Beach
GSWSA - Horry - Hwy 501 ASR Well	Myrtle Beach
GSWSA - Horry - Hwy 501 ASR Well	Myrtle Beach
GSWSA - Vereen WWTP	Longs
GSWSA - Vereen WWTP	Longs
GSWSA - Vereen WWTP	Longs
GSWSA - Horry - Watson Riverside ASR Well	Socastee
GSWSA - Horry - Watson Riverside ASR Well	Socastee
GSWSA - Horry - Crystal Lakes ASR Well	Myrtle Beach
GSWSA - Horry - Crystal Lakes ASR Well	Myrtle Beach
GSWSA - Horry - Conway Well	Conway
GSWSA - Horry - Conway Well	Conway

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GSWSA - Horry - Long Bay Well	Longs
GSWSA - Horry - Long Bay Well	Longs
GSWSA - Horry - Tilly Swamp ASR Well	Conway
GSWSA - Horry - Tilly Swamp ASR Well	Conway
GSWSA - Myrtle Beach Dechlorination Facility	Myrtle Beach
GSWSA - Myrtle Beach Dechlorination Facility	Myrtle Beach
GSWSA - Myrtle Beach WWTP	Myrtle Beach
GSWSA - Myrtle Beach WWTP	Myrtle Beach
GSWSA - Myrtle Beach WWTP	Myrtle Beach
GSWSA - Myrtle Beach WWTP	Myrtle Beach
GSWSA - Myrtle Beach WWTP	Myrtle Beach
GSWSA - Horry - Chestnut Crossroads ASR Well	Longs
GSWSA - Horry - Chestnut Crossroads ASR Well	Longs
GSWSA - Horry - Green Sea Well	Green Sea
GSWSA - Horry - Green Sea Well	Green Sea
GSWSA - Horry - Burning Ridge ASR Well	Conway
GSWSA - Horry - Burning Ridge ASR Well	Conway
GSWSA - Longs WWTP	Longs
GSWSA - Longs WWTP	Longs
GSWSA - Conway WWTP	Conway
GSWSA - Conway WWTP	Conway
GSWSA - Conway WWTP	Conway
GSWSA - Conway WWTP	Conway
GSWSA - Conway WWTP	Conway
GSWSA - Horry - Studio City ASR Well	Surfside Beach
GSWSA - Horry - Studio City ASR Well	Surfside Beach
GSWSA - Loris WWTP	Loris
GSWSA - Loris WWTP	Loris
GSWSA - Horry - Prestwick ASR Well	Myrtle Beach
GSWSA - Horry - Prestwick ASR Well	Myrtle Beach
GSWSA - Horry - Pirateland ASR Well	Myrtle Beach
GSWSA - Horry - Pirateland ASR Well	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Myrtle Beach SWTP	Myrtle Beach

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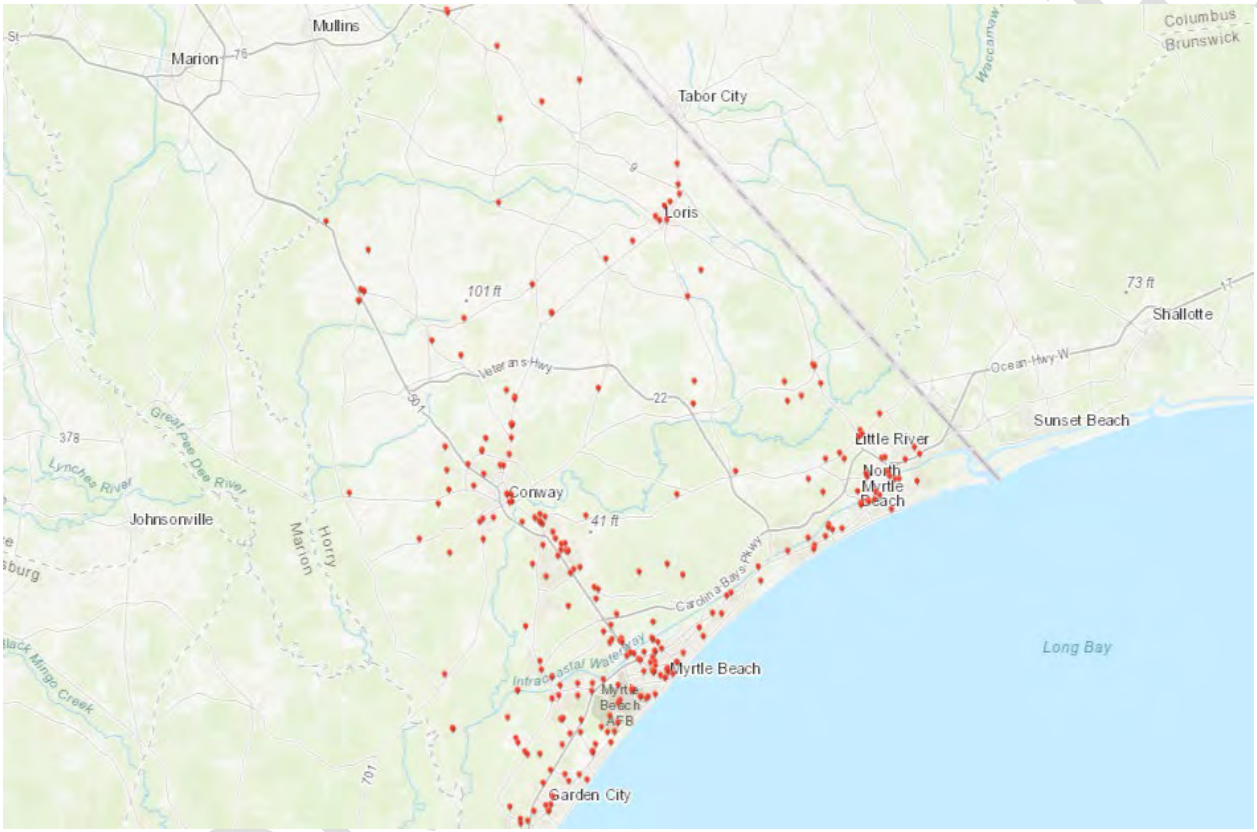
GSWSA - Myrtle Beach SWTP	Myrtle Beach
GSWSA - Horry - Aynor Park ASR Well	Aynor
GSWSA - Horry - Aynor Park ASR Well	Aynor
GSWSA - Horry - Carolina Forest Tank ASR	Myrtle Beach
GSWSA - Horry - Carolina Forest Tank ASR	Myrtle Beach
GSWSA - Horry - North Booster ASR	N. Myrtle Beach
GSWSA - Horry - North Booster ASR	N. Myrtle Beach

Map of Tier 2 reports to Horry County



Map provided by Horry County Fire and Rescue

The key to dealing with any emergency is to be prepared and identifying and mitigating those risks are the best ways to be prepared. Horry County is a physically large county that includes the Grand Strand, which is a permanent home/part-time home for most and a vacationing location for others. Knowledge of the hazards is the first step, identifying the County's vulnerabilities is the second, and the third is how to be best prepared for the occurrences of such hazards. The following charts give a clear picture of the County's vulnerability to each hazard identified and the impact each hazard has on the county. All of the charts and their data were reviewed and updated.

Hazard **H=High** **M=Medium** **L=Low**	**IMPACTED INFRASTRUCTURE**										
	AIRPORTS	**COMPUTER SYSTEMS**	**ELECTRICAL**	**NATURAL GAS**	**RADIO, TV, PRINT MEDIA**	**ROADS/ H'WAYS**	**TELEPHONE**	**WATER/SEWER**	**WATERWAYS/ NAVIGATABLE**	**HOSPITALS**	**CELLULAR SERVICE**
Hurricane	**H**	**H**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**
Storm Surge	**H**	**M**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**M**	**M**
Earthquakes	**H**	**H**	**H**	**H**	**L**	**M**	**M**	**M**	**L**	**L**	**L**
Wildfires	**M**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**M**
Floods	**L**	**M**	**M**	**L**	**L**	**M**	**L**	**H**	**H**	**L**	**L**
Tornadoes	**H**	**H**	**H**	**M**	**L**	**L**	**M**	**L**	**L**	**M**	**M**
Severe Thunderstorms	**H**	**M**	**M**	**L**	**L**	**M**	**M**	**L**	**L**	**M**	**M**
Lightning	**H**	**H**	**H**	**L**	**M**	**L**	**M**	**L**	**L**	**M**	**M**
Severe Winter Storm	**H**	**M**	**H**	**L**	**M**	**H**	**M**	**L**	**L**	**M**	**M**
Drought	**M**	**M**	**L**	**M**	**M**	**M**	**M**	**L**	**M**	**M**	**M**
Extreme Heat	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**
Tsunami	**L**	**L**	**L**	**L**	**L**	**M**	**L**	**H**	**L**	**L**	**L**

WORK

Risk Calendar, by Hazard												
	Risk Probability											
	High			Moderate			Any Time					
	Medium			Low			No Risk					
	RISK CALENDAR											
HAZARD	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Hurricane (Cat 1-2)												
Hurricane (Cat 3-4)												
Hurricane (Cat 5)												
Severe Thunderstorms												
Tornadoes												
Lightning												
Heat Waves												
Severe Winter Storm												
Floods												
Storm Surge												
Drought												
Earthquakes												
Wildfires												
Tsunami												

WORK DRAFT

HAZARD	EFFECTS								
	BLDG. COLLAPSE	CHEMICAL SPILL	COMMUNICATION FAILURE	DISRUPTION OF GOVERNMENT SERVICES	FIRE/EXPLOSION	POWER OUTAGE	TRANSPORTATION INTERUPTION	WASTE DISPOSAL DISRUPTION	WATER SUPPLY DISRUPTION/ POLLUTION
Hurricane (Cat 1-2)			X	X	X	X		X	X
Hurricane (Cat 3-4)	X		X	X	X	X	X	X	X
Hurricane (Cat 5)	X	X	X	X	X	X	X	X	X
Severe Thunderstorms			X		X	X			
Tornadoes	X		X	X		X	X	X	X
Lightning			X		X				
Heat Waves					X	X			
Severe Winter Storm			X	X		X	X	X	
Floods			X	X		X	X	X	X
Storm Surge	X		X	X			X	X	X
Drought					X				X
Earthquakes	X	X	X	X	X	X	X	X	X
Wildfires	X		X	X	X	X	X	X	X
Tsunami	X			X			X	X	X

WORKING DRAFT

EFFECTS H=High M=Medium L=Low	IMPACT OF HAZARD																		
	PEOPLE								PROPERTY / ENVIRONMENT						ECONOMY				
	DISPLACED PERSON	ENTRAPMENT	HEALTH / EPIDEMIC	ISOLATED / STRAND	LOSS OF SANITATION	LOSS OF WATER SERVICES	MASS CASUALTIES	MULTIPLE DEATHS	AIR POLLUTION	BRIDGES / ROADS	CROPS / LIVESTOCK	FIRE / EXPLOSION	SOIL CONTAMINATION	WATER POLLUTION	Business Interruption		NO TAX BASE	Unemployment	
															Perm	Temp		SHORT	LONG
BLDG. COLLAPSE	H	H	L	L	L	M	H	H	L	L	L	M	M	M	L	M		M	L
CHEMICAL SPILL	L	L	M	L	L	L	L	L	M	L	L	H	H	H	L	M		L	L
COMMUNICATION FAILURE	L	M	M	M	L	L	L	M	L	L	L	L	L	L	L	H		L	L
DISRUPTION OF GOVERNMENT SERVICES	L	L	L	L	M	M	L	L	L	L	L	L	L	L	L	H		L	L
FIRE/EXPLOSION	H	H	L	M	M	M	M	M	H	L	L	H	M	L	L	M		M	L
POWER OUTAGE	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H		L	L
TRANSPORTATION INTERRUPTION	M	L	L	M	L	L	L	L	L	M	L	L	L	L	L	H		M	L
WASTE DISPOSAL DISRUPTION	L	L	M	L	H	M	L	L	L	L	L	L	M	M	L	H		M	L
WATER SUPPLY DISRUPTION/ POLLUTION	L	L	M	L	H	H	L	L	L	L	H	H	M	H	L	H		M	L

WORK

JURISDICTION	HAZARD										
	HURRICANE	FLOODING	TORNADOS	SEVERE THUNDERSTORMS & WIND	SEVERE WINTER STORMS	STORM SURGE	EARTHQUAKE	WILDFIRE	LIGHTNING	DROUGH/EXTREME HEAT	TSUNAMI
Town of Atlantic Beach	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Town of Aynor	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO
Town of Briarcliffe Acres	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
City of Conway	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO
Horry County	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
City of Loris	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO
Town of Surfside Beach	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

WORKING DRAFT

SPECIAL PURPOSE DISTRICTS	HAZARD										
	HURRICANE	FLOODING	TORNADOS	SEVERE THUNDERSTORMS & WIND	SEVERE WINTER STORMS	STORM SURGE	EARTHQUAKE	WILDFIRE	LIGHTNING	DROUGHT/ EXTREAM HEAT	TSUNAMI
Bucksport Water System	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Grand Strand Water & Sewer Authority	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Horry County School District	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Horry Electric Cooperative	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Horry Telephone Cooperative	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
Murrells Inlet – Garden City Fire District	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

WORKING DRAFT

3.3.1 ASSESSING VULNERABILITY: IDENTIFYING STRUCTURES

The planning team reviewed and analyzed this section of the plan during the 2020 update. The repetitive loss structures are addressed at the end of this section along with additional information regarding participation in the Community Rating System.

In addition to identifying and profiling where a hazard may occur, this section will identify what structures could be affected by different hazards. Building upon the hazard area maps found in the Risk Assessment section, the vulnerability of each hazard in terms of types and numbers of existing buildings and infrastructure located in each identified hazard area was mapped, charted and described.

The information was collected from a variety of resources including HAZUS South Carolina Data CD, the National Climatic Data Center, Horry County Government GIS data, and each individual jurisdictions comprehensive plan. The information was collected, reviewed and analyzed for inclusion in the plan.

This section was prepared using the best available data for identifying types and numbers of existing buildings, infrastructure, and critical facilities. The Horry County Emergency Management staff used structure information that was available through GIS spatial data to identify the types and numbers of structures in each hazard area. This data allowed the Emergency Management staff to map each residential and commercial structure in relation to the hazard area.

The following maps illustrate the types and numbers of existing buildings in the flood, storm surge and tsunami hazard areas. Each participation jurisdiction reviewed the maps and charts for accuracy. Information for the maps was gathered through various sources such as applicable comprehensive plans, GIS, Myrtle Beach Area Statistics, Waccamaw Regional Planning and Development Council, and the US Census Bureau.

The other identified hazards, which include hurricane, winter storms, drought, hail, earthquake, tornado, thunderstorm, lightning, HazMat, terrorism and cyber terrorism, do not have a specific hazard areas. Therefore, the Task Force determined that, based on historical events and/or documentation as provided in the hazard profiles, the latter hazards could not be spatially defined. However, in the Risk Assessment section wildfire was shown to affect certain areas more than others due to dense vegetation. The current GIS data has not been updated to show recent values of vegetation from the extensive development over the past 10 years. Therefore wildfire will also fall in the category of a non-spatially defined hazard based on the best available data.

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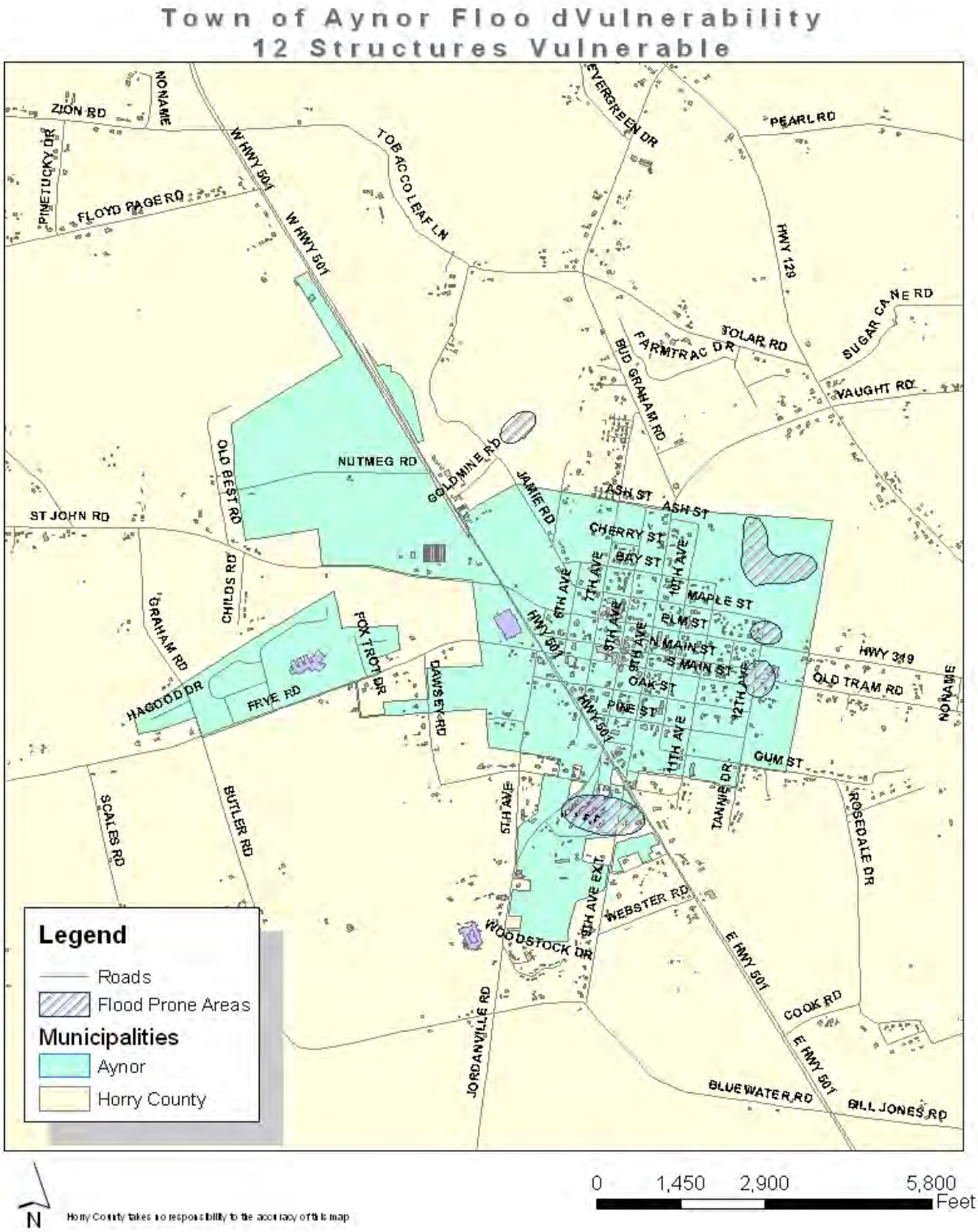
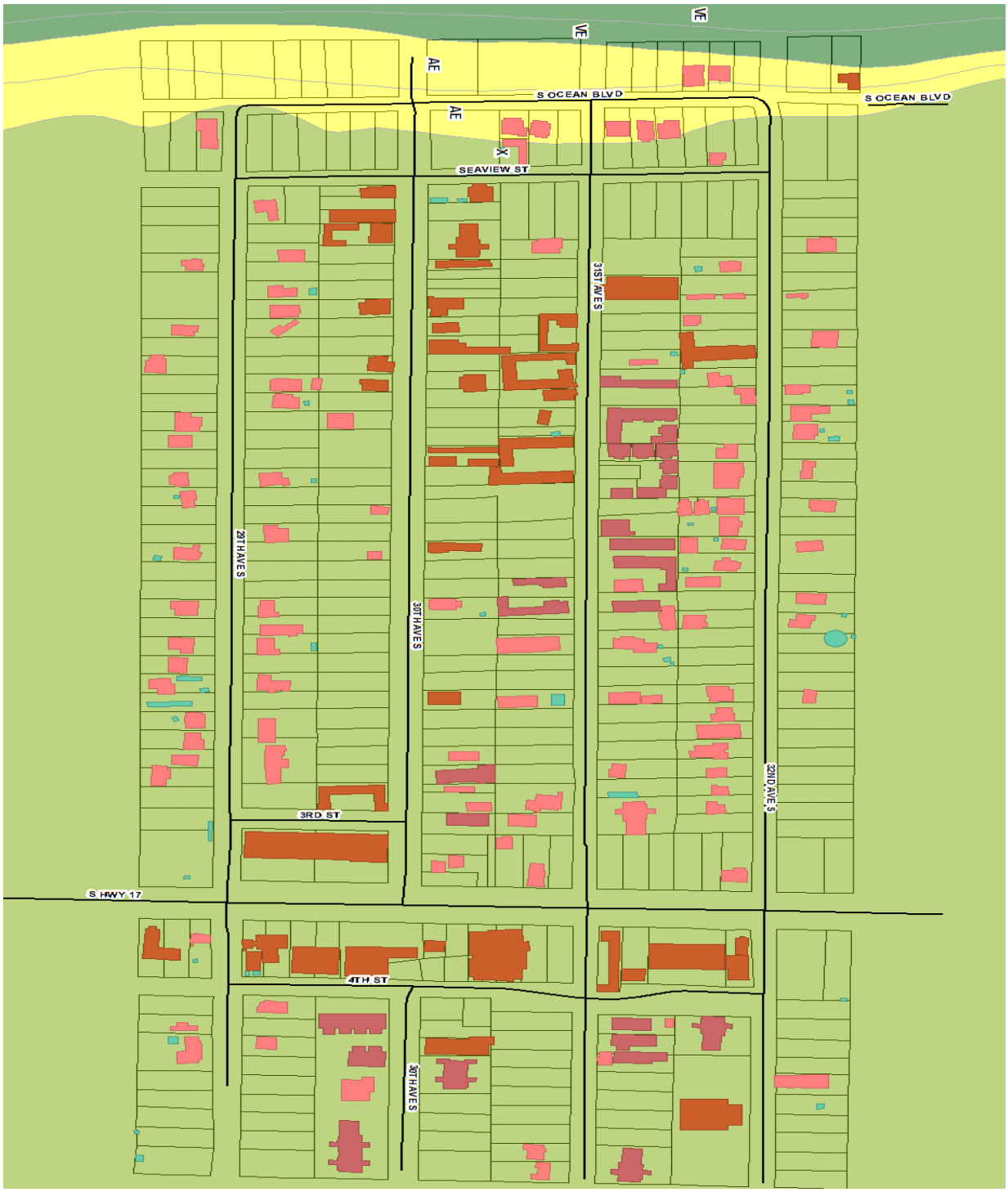


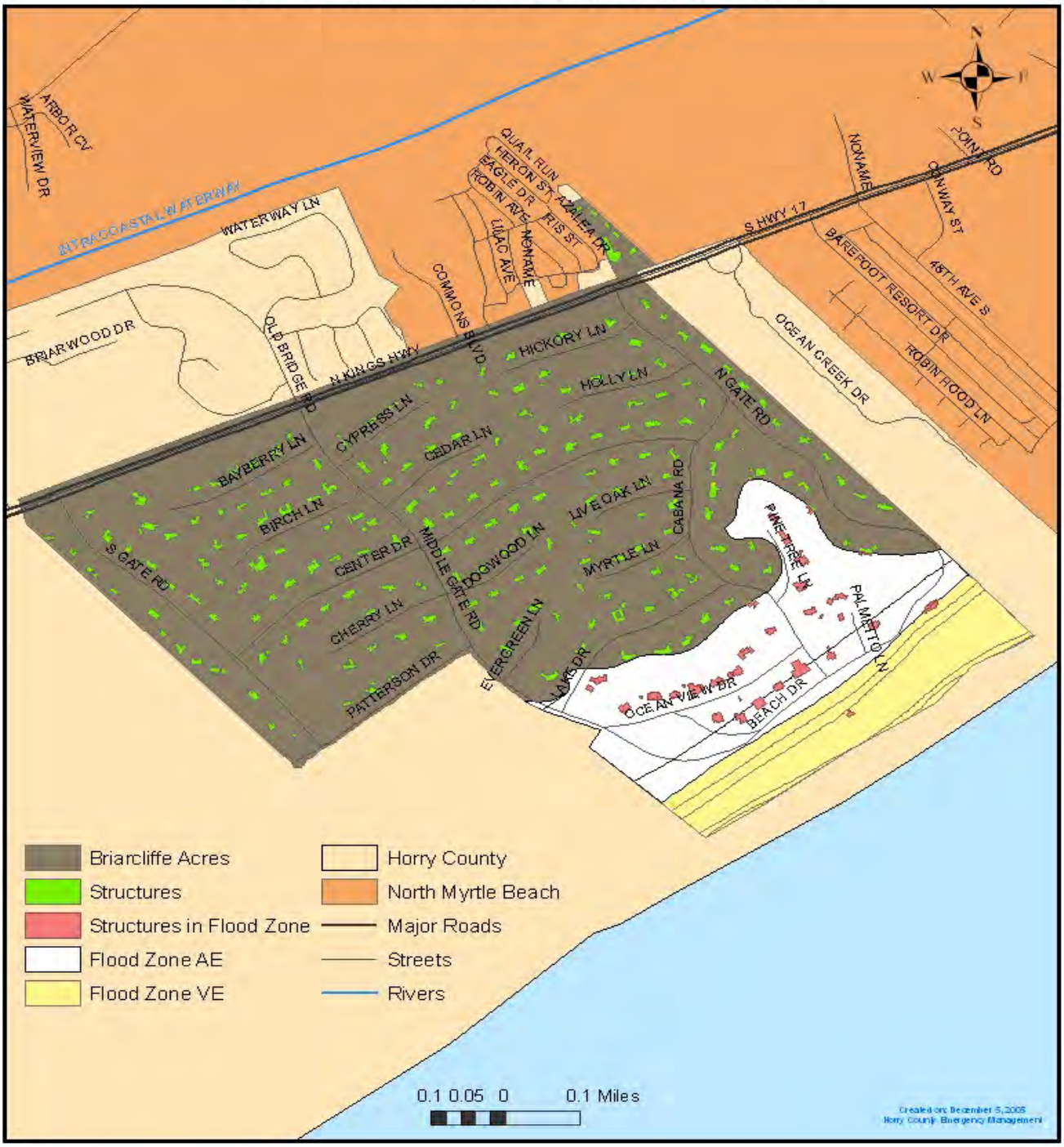
Map Provided by the Town of Aynor

Town of Atlantic Beach Flood Vulnerability 10 Structures

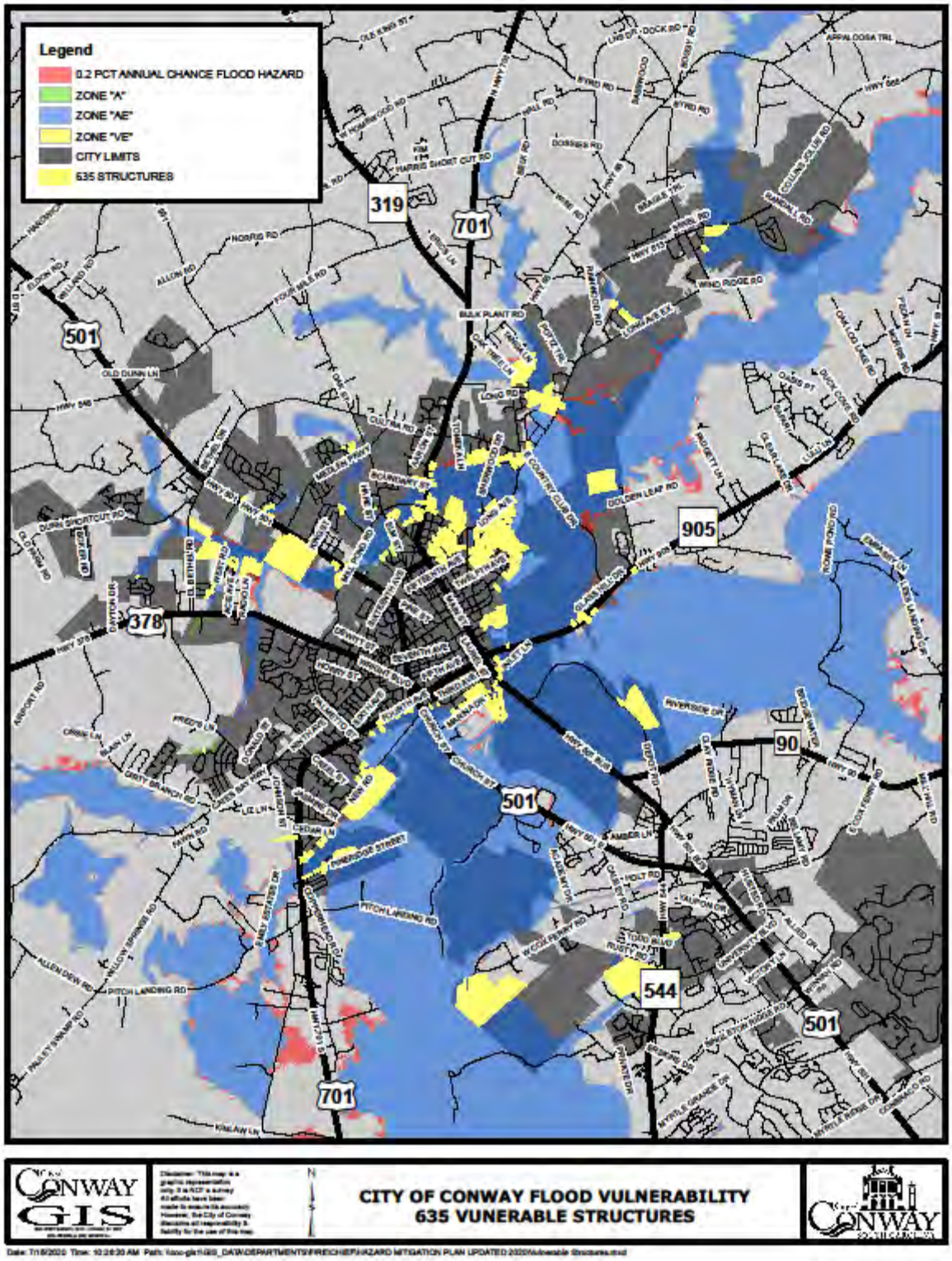


Map Provided by the Town of Atlantic Beach

Town of Briarcliffe Area Flood Vulnerability
42 Structures Vulnerable

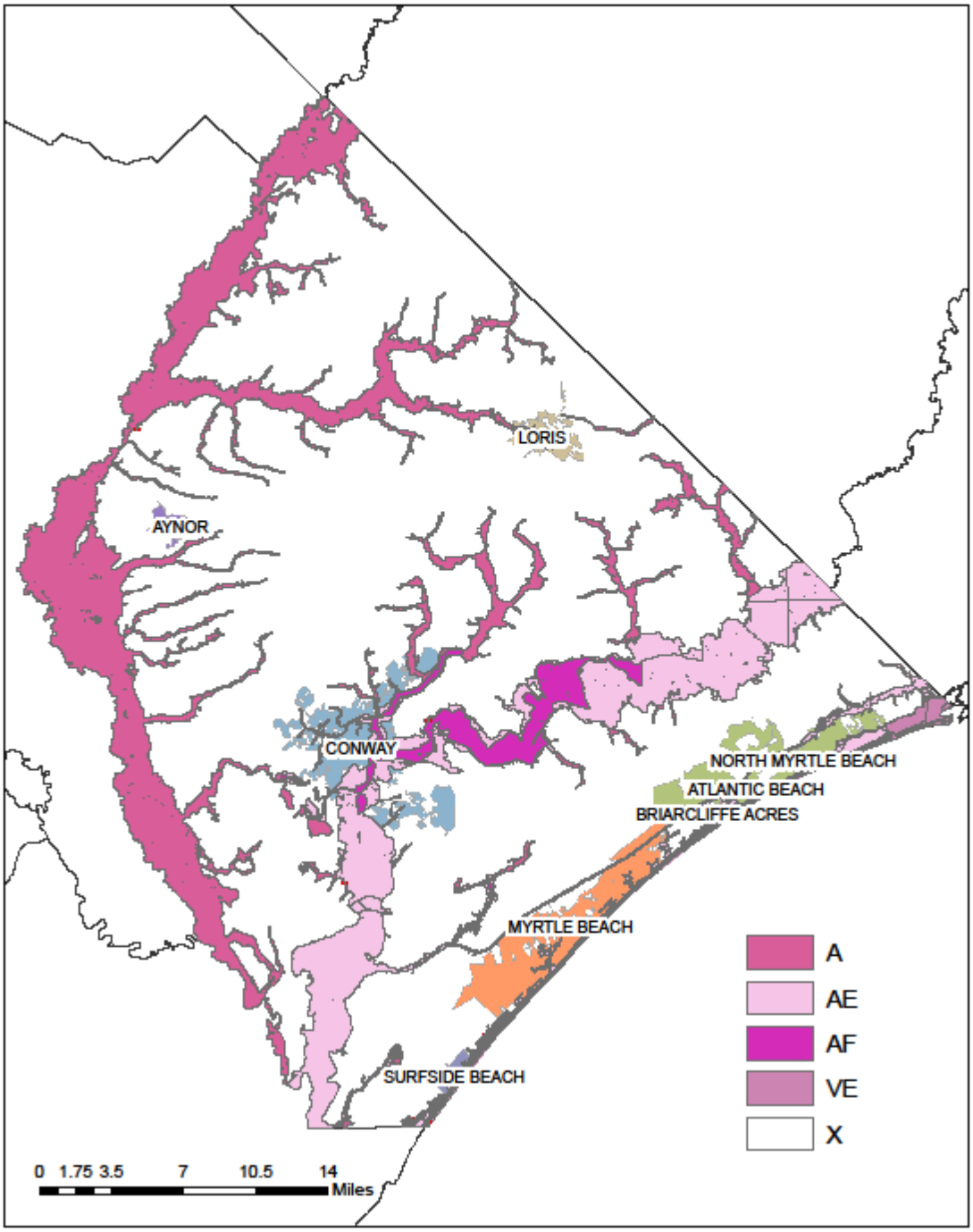


Map Generated by Horry County Emergency Management



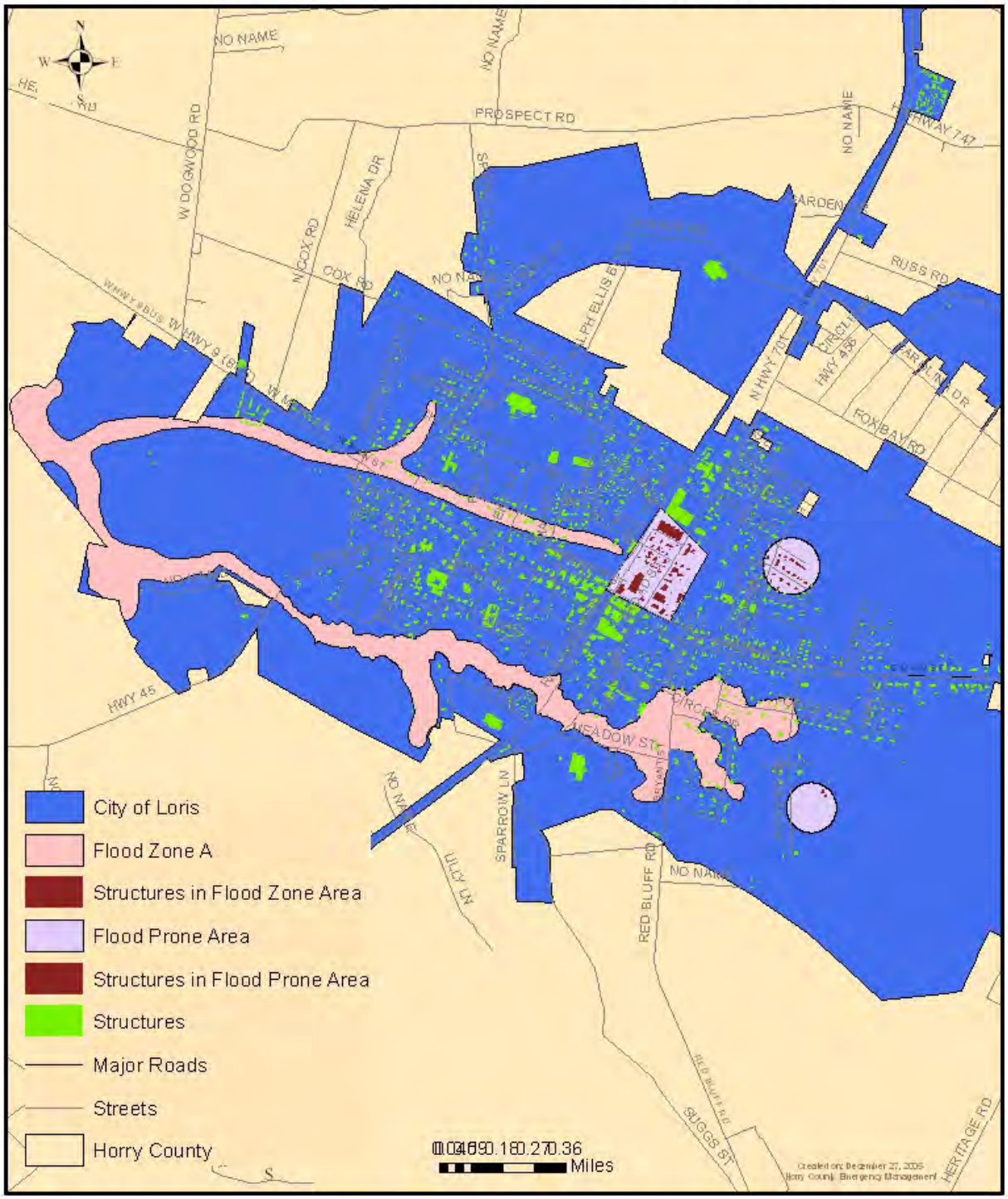
Map Provided by the City of Conway

Horry County Flood Vulnerability
15,070 Structures Vulnerable



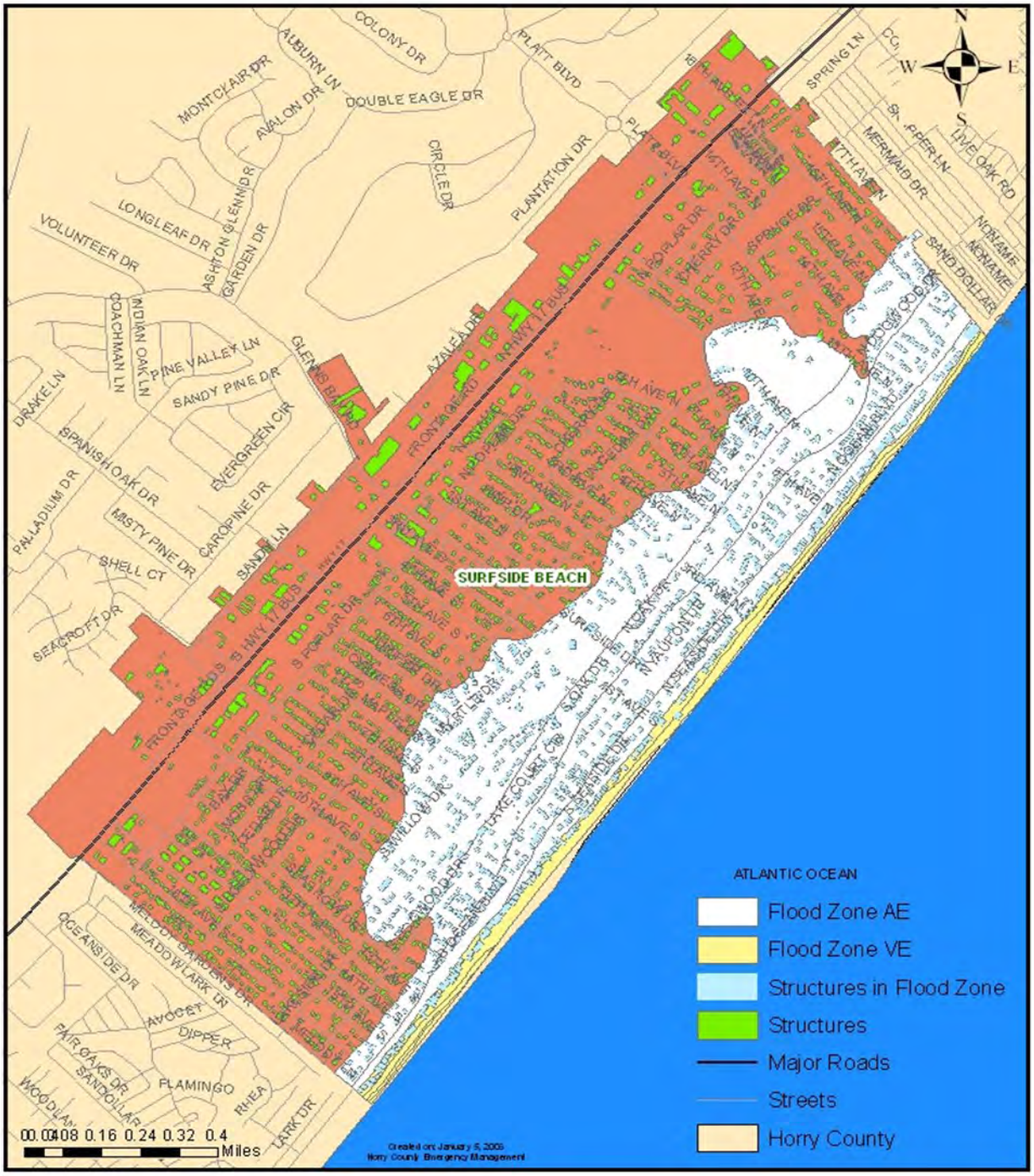
Map Generated by Horry County Code Enforcement and IT

City of Loris Flood Vulnerability
145 Structures Vulnerable



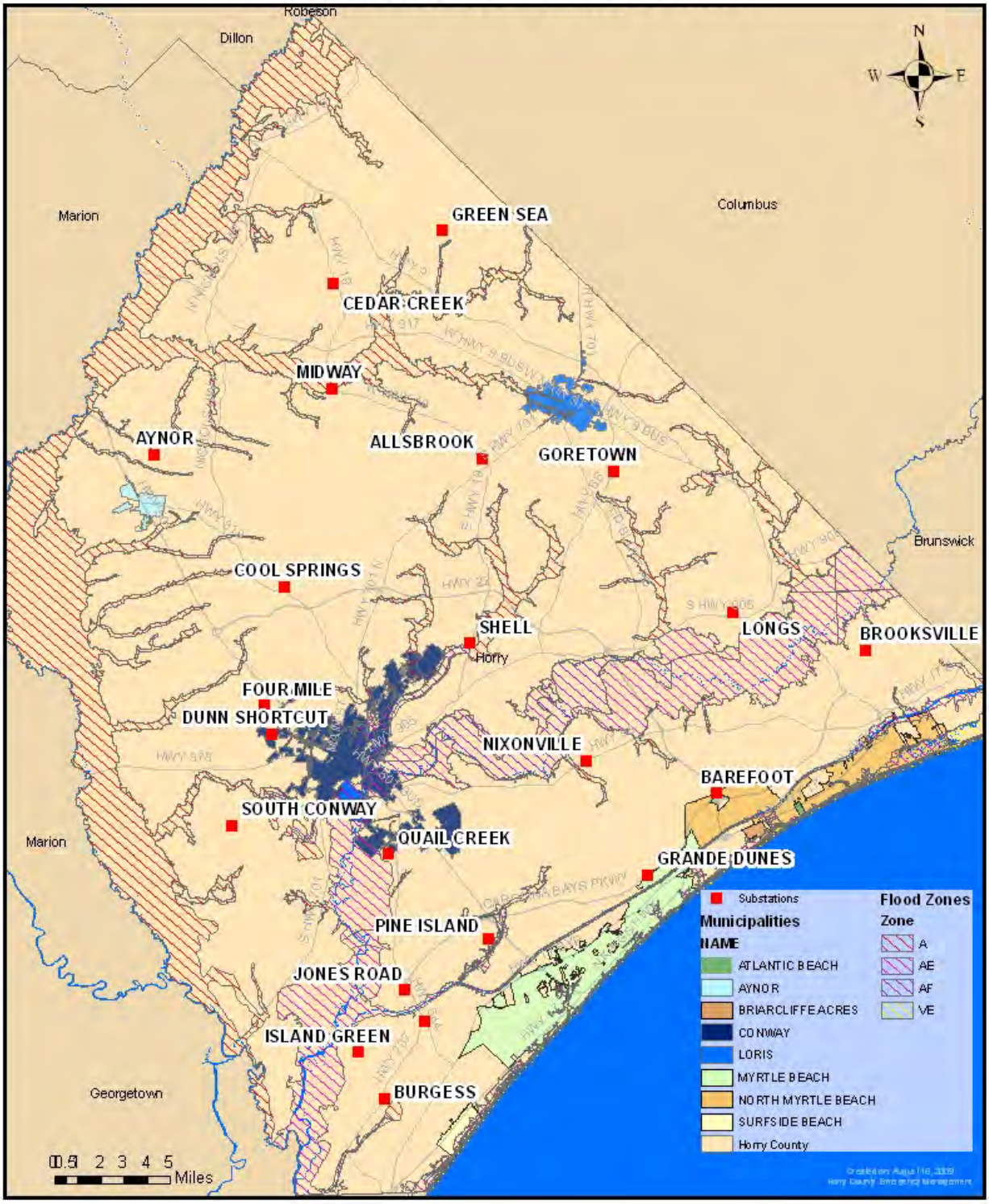
Map Generated by Horry County Emergency Management

Town of Surfside Beach Flood Vulnerability
1196 Structures Vulnerable



Map Generated by Horry County Emergency Management

Horry Electric Cooperative Flood Vulnerability
O Substations Vulnerable

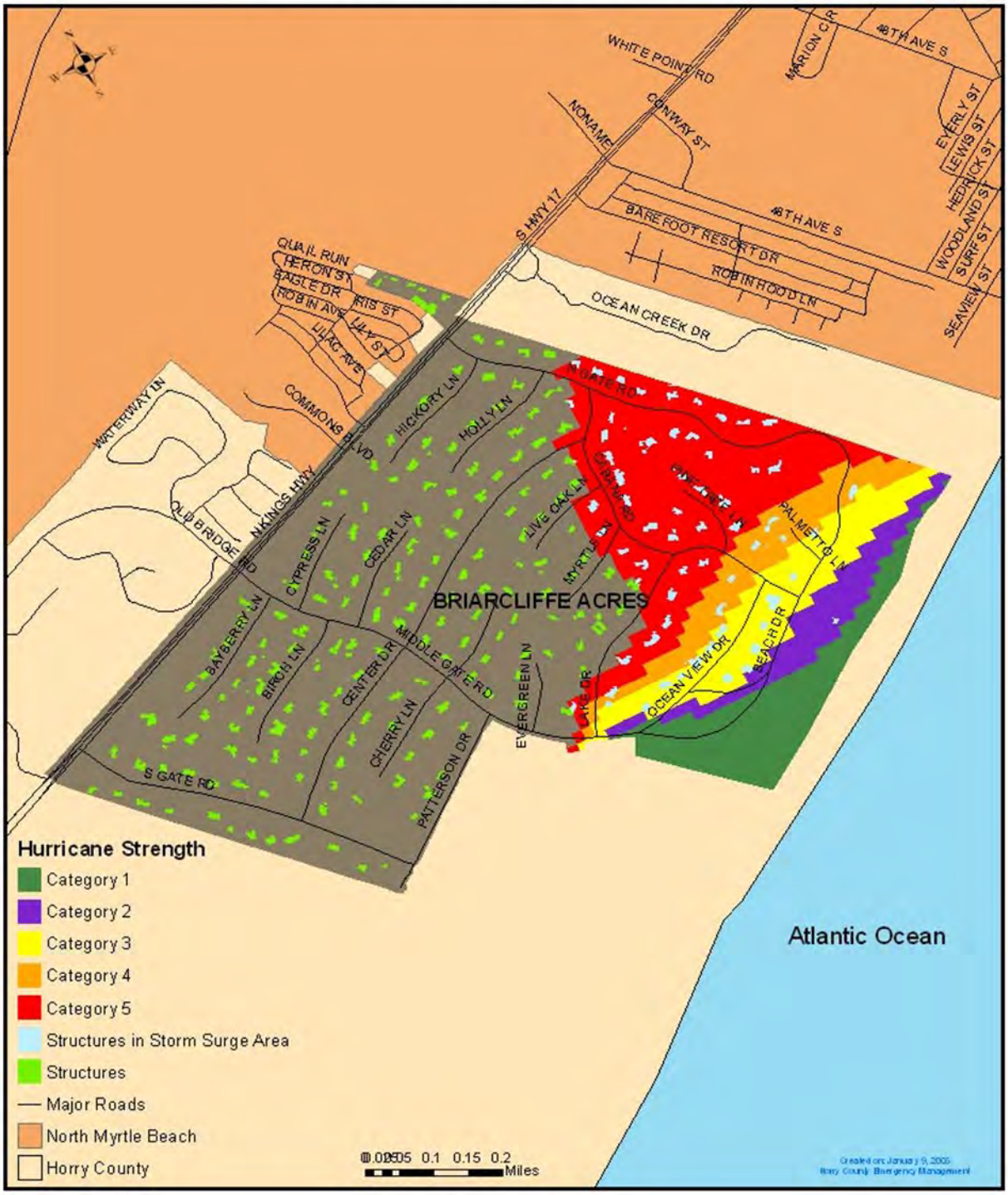


Map Generated by Horry County GIS Department

Town of Atlantic Beach Storm Surge 35 Structures Vulnerable

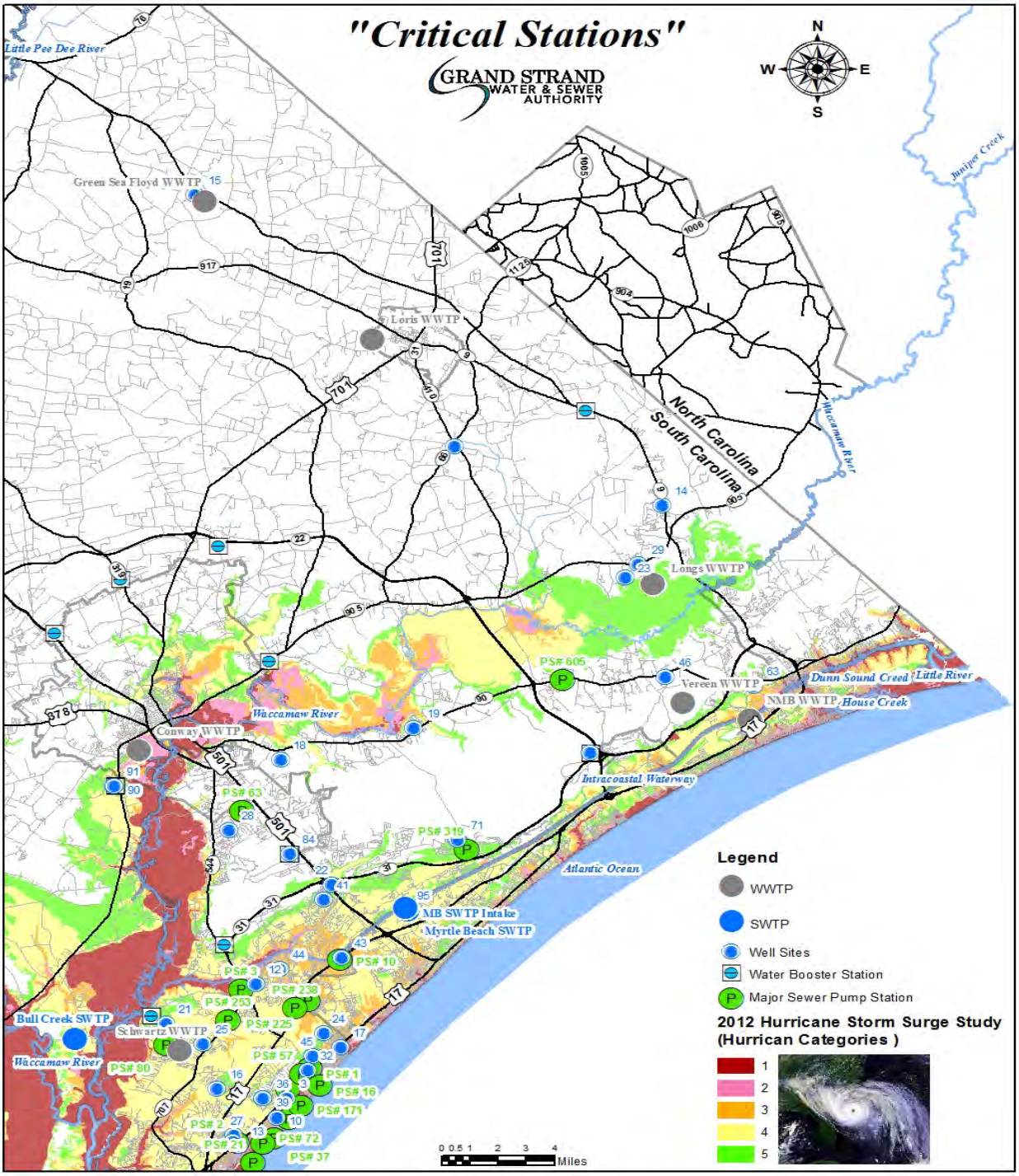
Map Provided by the Town of Atlantic Beach

Town of Briarcliffe Acres Storm Surge Vulnerability
75 Structures Vulnerable



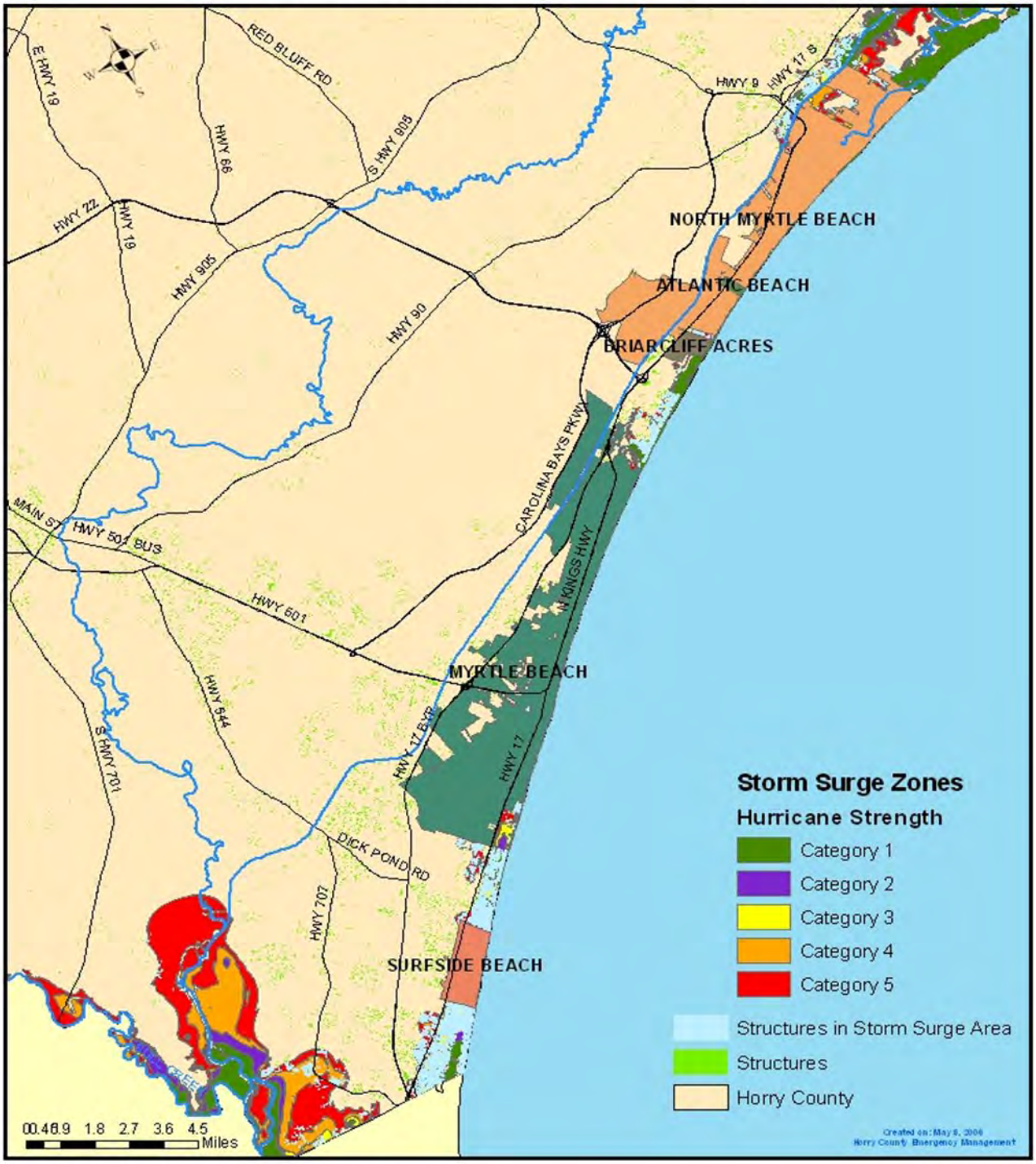
Map Generated by Horry County Emergency Management

Grand Strand Water & Sewer Storm Surge Vulnerability



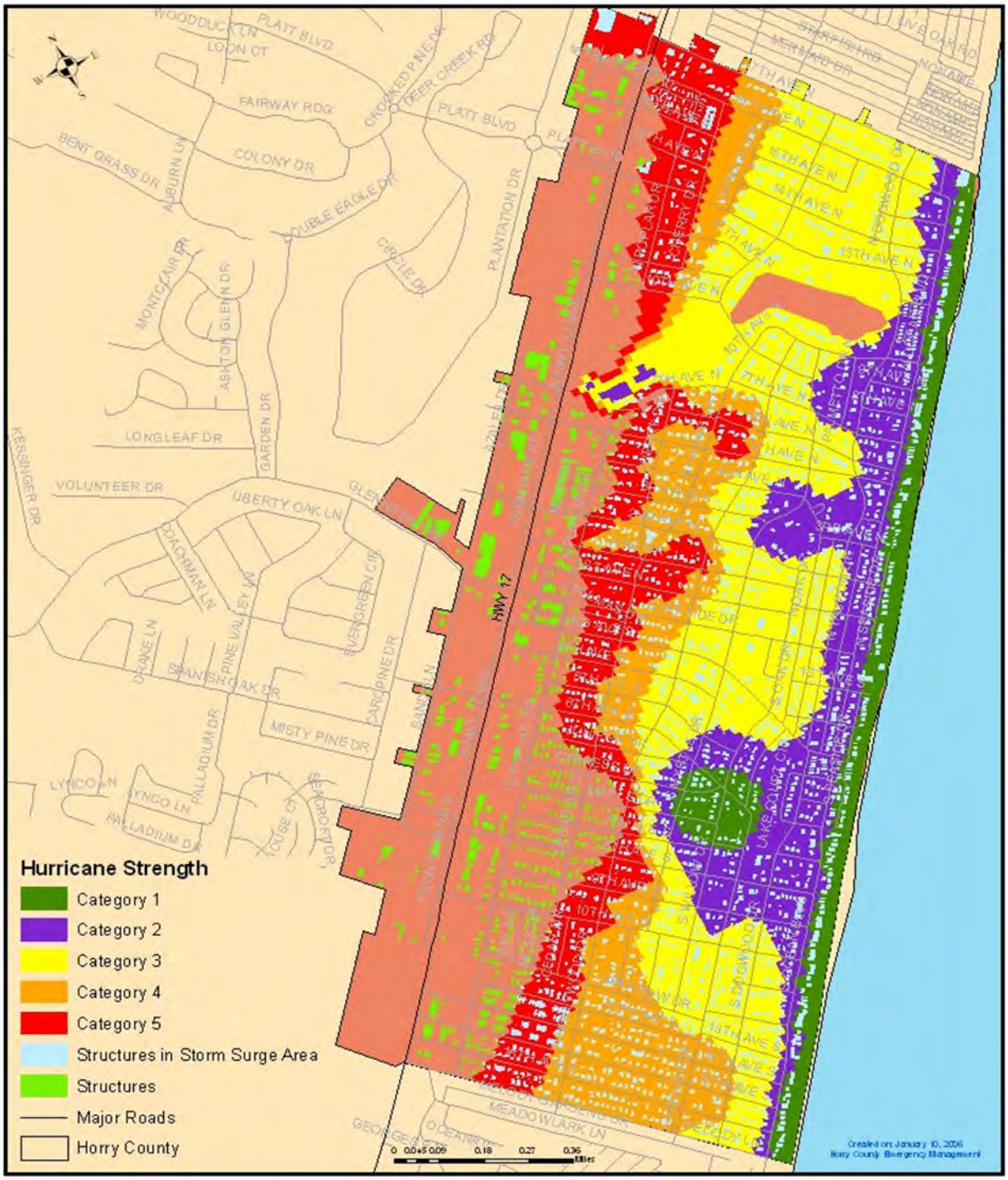
Map Provided by Grand Strand Water & Sewer

Horry County Storm Surge Vulnerablility
14,132 Structures Vulnerable



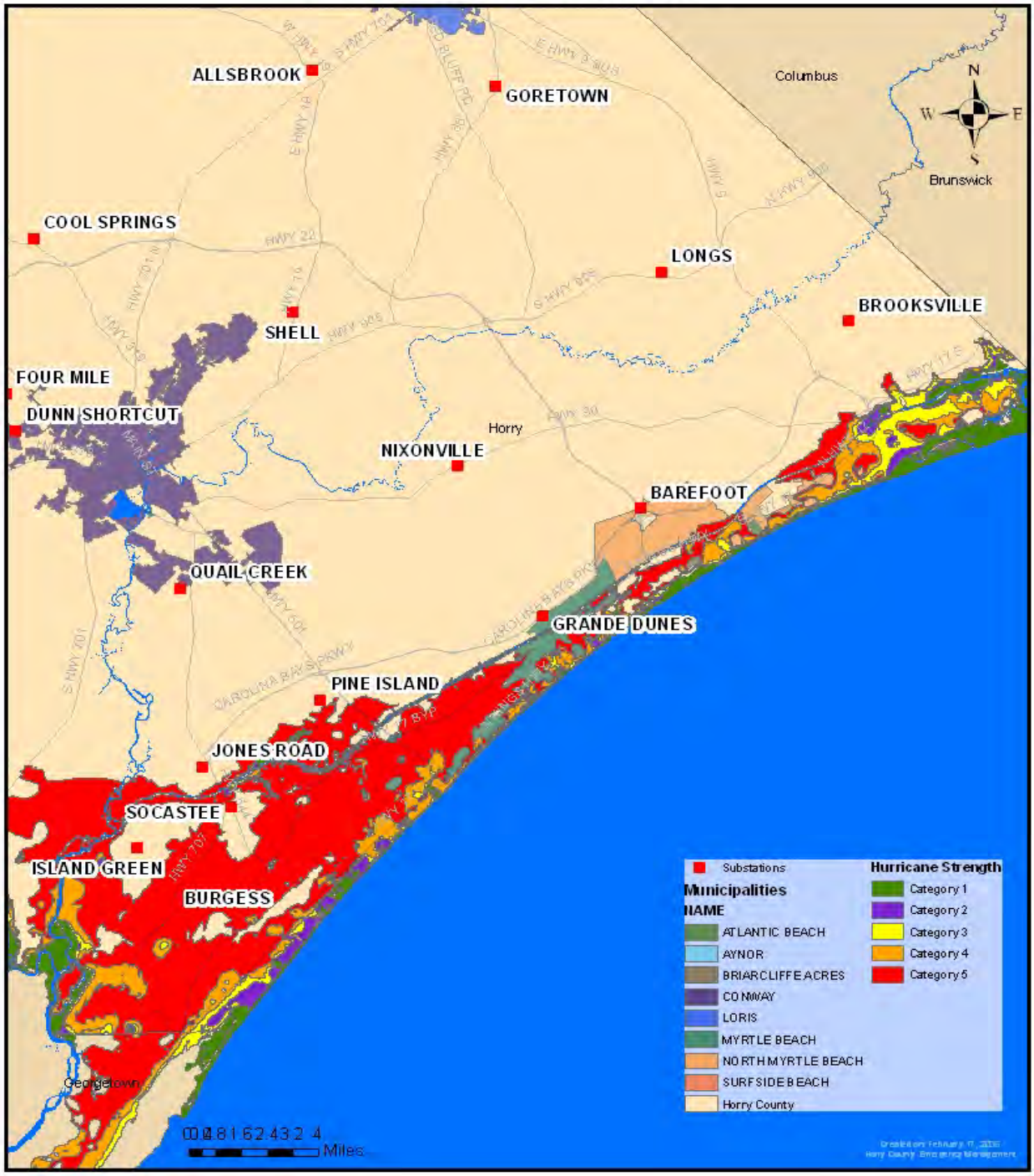
Map Generated by Horry County Code Enforcement and IT

Town of Surfside Beach Storm Surge Vulnerability
2,412 Structures Vulnerable



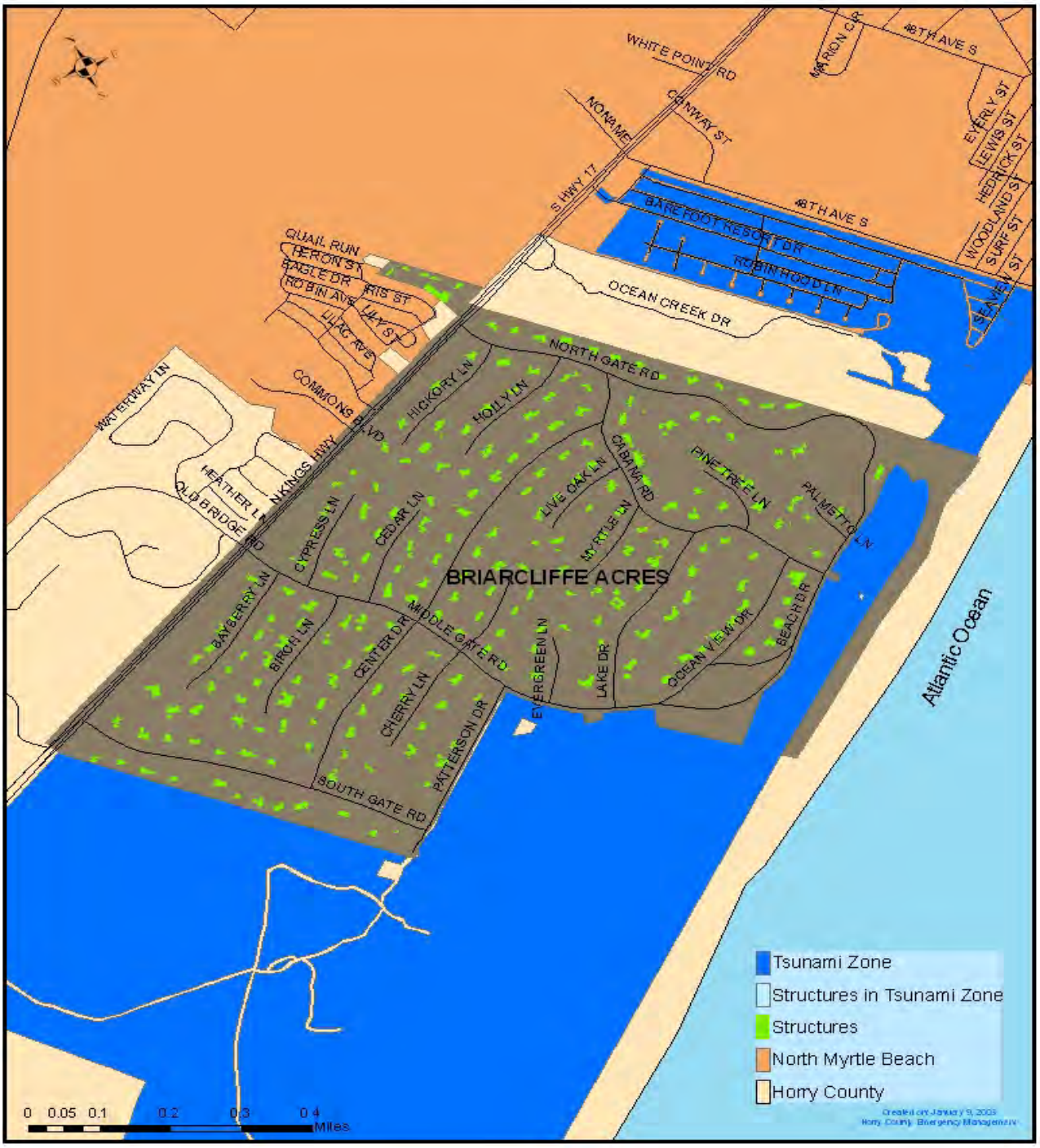
Map Generated by Horry County Emergency Management

Horry Electric Cooperative Storm Surge Vulnerability
1 Substation Vulnerable



Map Generated By Horry County Emergency Management

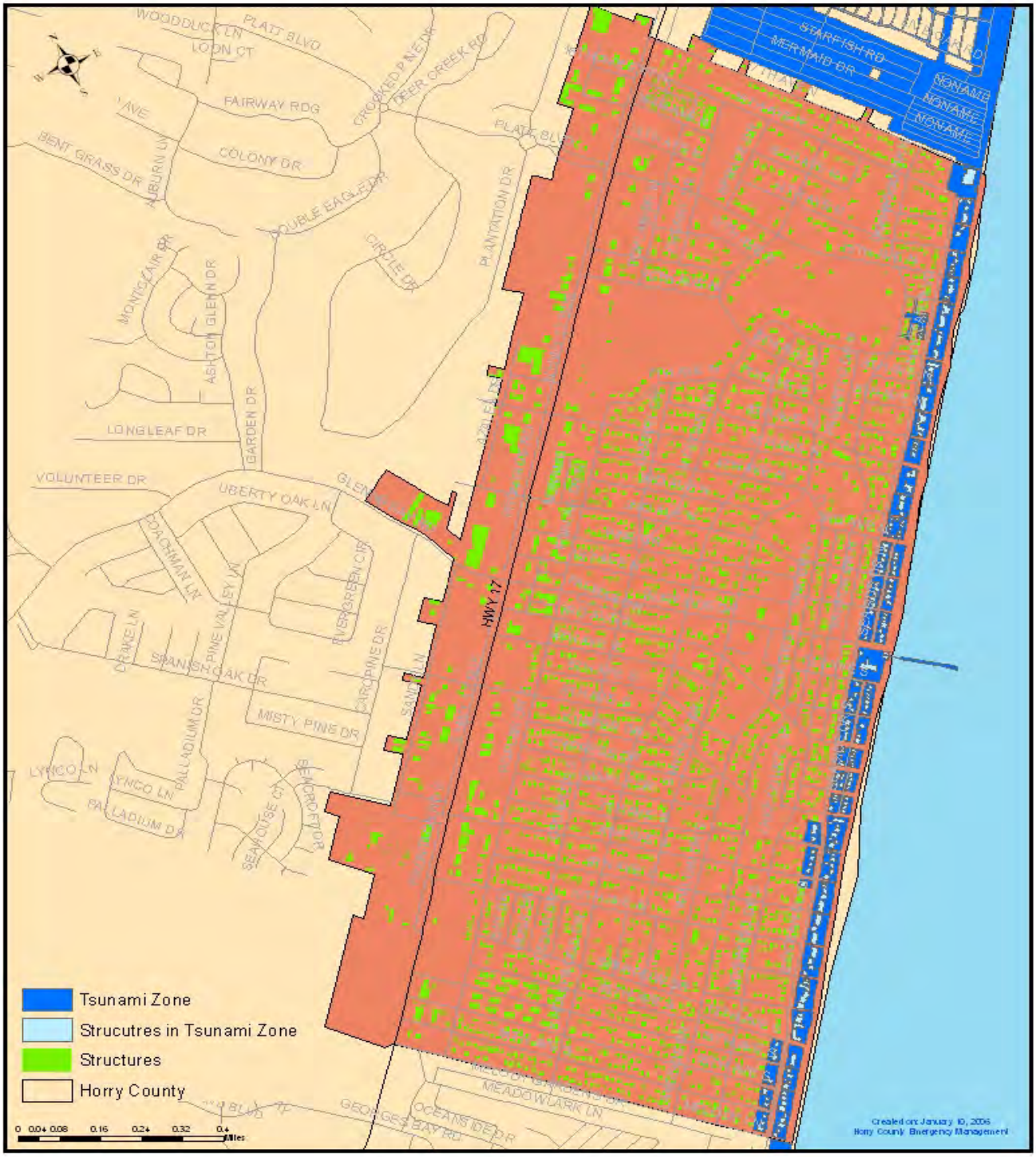
Town of Briarcliffe Acres Tsunami Vulnerability
1 Structure Vulnerable



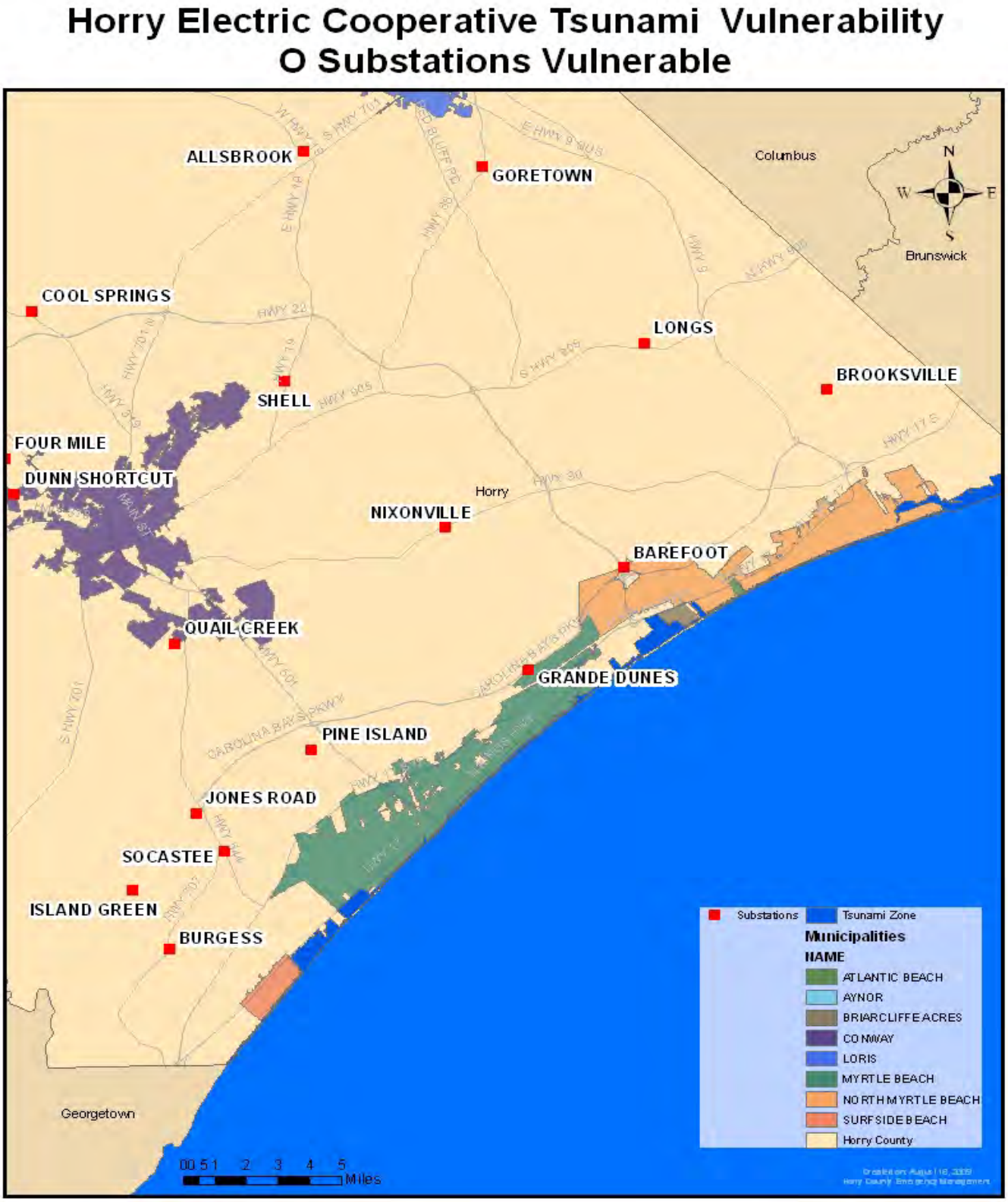
Map Generated By Horry County Emergency Management

Map Generated By Horry County Emergency Management

Town of Surfside Beach Tsunami Vulnerability
213 Structures Vulnerable



Map Generated By Horry County Emergency Management



Map Generated By Horry County Emergency Management

3.3.2 COMMUNITY RATING SYSTEM & REPETITIVE LOSS INFORMATION

Another vulnerable part of Horry County and surrounding jurisdictions are the repetitive loss properties, (RLP). Currently Horry County has 252 RLP as of the 2018 data, the City of Conway has 4 RLP and the Town of Surfside Beach has successfully removed all of their repetitive loss properties according to their Community Rating System Coordinator. Horry County has also included a chart that shows how many RLP are located in each of the spatially defined hazards, i.e. flood, storm surge and tsunami from the 2015 data. An in-depth discussion and analysis was performed on the types of floods that can most greatly impact this area and those less likely to impact this area. These are outlined in the flood section of this plan. Additionally, when each jurisdiction including Horry County outlined goals and action items going forward, CRS objectives were included and made a top priority.

As with any review and update there was an analysis conducted on the repetitive loss problem to identify the source and culprits of the repetitive flooding in the areas that have this problem in Horry County. What was identified was exactly what has also been outlined in the flooding & storm surge section of this plan. For those properties which fall in the repetitive loss category, we generally noticed two types of flooding. These was coastal flooding associated with storm surge from a tropical system and inland freshwater/riverine flooding which in some cases was also caused by a tropical system dumping large amounts of rain fall and inundating the river system. For a large portion of these properties that are situated along the coast, they share a similar date of loss going back to Hurricane Hugo's impacts on the southern coast of Horry County. These flood losses can be attributed to rising tide and storm surge accompanying the Category 4 hurricane that came ashore on September 22, 1989. Hugo brought much devastation by way of wind damage, but the greatest impact by far was flooding impacts. According to NOAA/NWS the surge was estimated at 13 feet above sea level, with evidence of damage from seawater flooding as far as 1,500 feet inland. Much of the southern coast of Horry County was devastated by this storm and shows up as evidence in the repetitive loss property list by this date.

Another crucial date for a lot of the properties on this list was September 16, 1999 which was the day that category 3 Hurricane Floyd came ashore just over the North Carolina line in Cape Fear. The storm itself was over 580 miles wide and was dumping in some areas 15-20 inches of rain. This caused a great deal of fresh water inland flooding which resulted in many of the damaged homes along the Waccamaw River and its tributaries. The Waccamaw River crested on Sept. 27, 1999, at 17.61 feet, which is more than 6 feet above flood stage. As a result of Hurricane Floyd there were several major roads which were completely shut down and closed because they were impassable due to flood waters. In the past 5 years, the County has been hit with devastating tropical system causing similar damages from Joaquin-2015, Matthew-2016, Irma-2017, Florence-2018 and Dorian-2019.

The other significant issue observed is the fresh water riverine flooding due to an abundance of rainfall over a short amount of time or an inundation of rainfall from a multiple day event/systems. After reviewing the dates and claims on the AW-501 worksheets, the Task Force saw the repetition of this type of problem. Along the Waccamaw River in Conway, there are several areas which saw flooding issues due to fresh water inundation of the river and its tributaries for a course of several years repeated. We noticed during the review a pattern of a storm system moving through the area dumping a large amount of rain that would cause the river levels to rise and flood those homes situated in the floodplain areas along the Waccamaw River. During the review it was noted that this would also cause flooding and claims in other low lying

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areas of the county and especially those lower areas along the Intercostal Waterway in the more mid to southern end of the county.

As with any vulnerability, the Mitigation Task Force takes seriously the impact flooding has on the life, safety and health of the residents they represent. The task force understands that the procedures and warnings that it currently has in place will greatly help reduce the risk to life and property during those times (Flash Floods, Storm Surge, Tsunami and Fresh Water/Inland Flooding). Currently, the Horry County Emergency Management Division has a telephone automated notification system which it could use to push out any necessary warnings or notifications to residents' cell phones. Also the county has OPCON levels which it uses to convey the severity of situations to its residents and visitors alike. Often times the OPCON levels will coincide directly with evacuation orders and public notifications of flooding or potential flooding events. Additionally, the county has the ability as outlined in the Comprehensive Emergency Management Plan to coordinate evacuation notifications through Horry County Emergency Management, E-911 Communications Center, the NWS Wilmington Office and the Horry County Public Information Office for the entire coastal area including local jurisdictions. As always the Emergency Management Office for Horry County promotes evacuation zone awareness through their "Know Your Zone" annual campaign. This helps promote evacuation awareness throughout the communities in both municipalities and unincorporated areas of the County.

The Mitigation Task Force and its represented jurisdictions understand the negative impact that flooding can have on the public health and the public economy. As with any flooding or continued dampness in structures (both residential and commercial) you run the risk of the onset of mold which may necessitate abatement to remove or in severe cases can result in the need to demolish the structure. Additionally, the act of flooding can put residents and visitors at risk of contracting disease and illness in the flood waters that inundate structures. Other associated risk are the contamination of the water with chemicals and hazardous substances that the flood waters would have picked up with the flooding of other commercial and residential structures. Another big concern is the electricity and the hazard it poses when structures flood, leaving residents susceptible to being electrocuted or shocked. These are just some of the impacts on public health that flooding can cause, but the other immense component is the stress and loss of use that flooding can cause to residents' homes, work, schools, medical care facility and first responder facilities.

The economic impact of flooding can be detrimental to a community. There are astronomical costs associated with flooding to the economy and tax base of a community. As already mentioned, floods can be responsible for displacing residents from their homes and places of work which would have a negative impact not just on the individual/family but also on the County and municipality in which that person lives and works. Displaced or abandoned homes wreak havoc on the local economy. Unemployment can also take a toll on the economic engine of a community. Another piece to consider is the cost to the local government during an event such as a flood. The government will have cost associated with first responders, equipment and services that it provides, and overtime for its employees. These expenses may or may not be reimbursable through a federal declaration. The bottom line about flooding, whatever it

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may be from, is that it is a disastrous hazard which causes issues for those directly effected as well as people and communities which are indirectly impacted.

The table below outlines those properties affected by flooding from the 2015 data and updated in 2020. They are broken down by jurisdiction and when available by type of property.

	Vulnerable Repetitive Loss Properties		
Jurisdiction	**Flood**	**Storm Surge**	**Tsunami**
Horry County	252	-	0
City of Conway	10	n/a	n/a
Town of Surfside Beach	0	-	0
Total:	**262**	**-**	**0**

	Repetitive Loss Properties	
Jurisdiction	**Commercial**	**Residential**
Horry County	9	252
City of Conway	1	3
Town of Surfside Beach	0	0
Total:	**10**	**255**

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3.3.3 CRITICAL FACILITIES ANAYLSIS

The planning team has reviewed and analyzed this section of the plan in January 2015 and again June 2020. Due to the new storm surge modeling the maps were updated to reflect the new inundation levels. The flood mapping was also reworked to be easier to read and understand even though the new FEMA Flood Maps were not available at that time. The Mitigation Task Force discussed at length changes to the maps and the affects they would have on each jurisdiction. Additionally, the critical facility information was reviewed and updated to reflect new structures that have been erected and old structures which are no longer being used.

An essential component of the Horry County All Hazard Mitigation Plan is the identification and inventory of the critical facilities that are located in the County and participating jurisdictions. The purpose of the critical facilities inventory is to provide information and location data on buildings and infrastructure that are vital to the response and recovery of the community from a natural and/or man-made disaster. While all buildings and structures have value, certain types of structures have a higher priority for protection because damage to them can directly impact the delivery of vital services, thereby delaying response and/or recovery efforts.

For purposes of this Mitigation Plan, Horry County and participating jurisdictions considered critical facilities to be those buildings and structures from which essential services and functions for the continuation of public safety actions and disaster recovery are performed or provided. These facilities include supporting infrastructure essential to the mission of critical facilities.

There are a total of **472** critical facilities in Horry County and participating jurisdictions, which was determined by the South Carolina Emergency Management Division. Delineating three levels of critical facilities further refines the list. Level 1 facility must remain operational before, during, and after a disaster event.

There are a total of **3** level 1 critical facilities in Horry County and participating jurisdictions. Level 2 facilities must be operational within 24 hours following a disaster event. A total of **433** facilities are designated as a level 2. Level 3 facilities must be operational within 48 hours after a disaster event. A total of **26** level 3 facilities are located in the County and participating jurisdictions.

An inventory of Horry County and participating jurisdictions' critical facilities has been compiled using the best available data and is provided in Table A. Most of these facilities are shown on the following maps according to jurisdiction. For mitigation planning purposes, all critical facilities are classified according to the following categories and numbered priority scale:

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- **Critical Facilities**
  - **Level 1 Facilities** (must remain operational)
    - E911 and Government Center
    - Emergency Operations Center (EOC)
  - **Level 2 Facilities** (must be operational within 24 hours following event)
    - Hospitals
    - Police Stations
    - Fire Stations
    - Emergency Shelters/Schools
- **Essential Facilities** (must be operational within 48 hours following event)
    - Public Schools (non-shelter)
    - University (non-shelter)
    - County Buildings
    - Post Office
    - Library
    - Landfill
- **Utility Facilities** (must be operational within 48 hours following event)
    - Radio Towers
    - Electrical utilities
    - Sewage treatment plants
    - Water treatment plans and pumping stations
- **Transportation Structures** (must be operational within 48 hours following event)
    - Major Bridges
    - Airports

Horry County Emergency Management Staff used a combination of GIS data sources and local GIS data to build a map of critical facilities for each jurisdiction found in the hazard areas.

The following chart summarizes the types and number of these critical facilities for each jurisdiction as identified by the Task Force during the review of critical facilities. This chart identifies the source of each map layer used for this determination. Map layers that are not available for certain types of facilities will be included in future updates of plan as it becomes available.

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TABLE A
Horry County and Participating Jurisdictions Critical Facilities

Type of Facility	TOTAL	Horry County	Aynor	Briarcliffe Acres	Conway	Loris	Surfside	Myrtle Beach	North Myrtle Beach
EOC	**1**	1	-	-	-	-	-	n/a	n/a
Communications	**10**	4	-	-	-	-	-	5	1
Hospitals	**5**	2	-	-	1	1	-	1	-
Police	**5**	1	1	-	1	1	1	n/a	n/a
Fire/Rescue Stations	**52**	46	-	-	3	1	1	n/a	n/a
Major Bridges/Roads	**334**	303	-	-	15	2	-	9	5
HC Schools & Facilities	**73**	45	3	-	13	4	-	7	1
Electric Utilities	**2**	1	-	-	-	-	-	1	-
Waste Water Facilities	**6**	20	-	-	1	1	-	1	1
Airports	**4**	2	-	-	-	-	-	1	1
Portable Water Facilities	**4**	39	-	-	-	-	-	-	-
TOTAL	**496**	464	4	0	34	10	2	25	9

Green = Local data from jurisdictions
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool

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GRAND STRAND WATER AND SEWER AUTHORITY CRITICAL FACILIITIES

Asset Name	Facility Type	Tier	Division
Myrtle Beach WWTP	Sewer	High	Plant Operations
Schwartz WWTP	Sewer	High	Plant Operations
Vereen WWTP	Sewer	High	Plant Operations
Conway WWTP	Sewer	High	Plant Operations
Bucksport WWTP	Sewer	High	Plant Operations
Longs WWTP	Sewer	High	Plant Operations
Loris WWTP	Sewer	High	Plant Operations
Socastee Sod Farm Equalization Basin	Sewer	High	Plant Operations
Bull Creek Raw Water Pump Station	Water	High	Plant Operations
Bucksport Compost Facility	Sewer	Medium	Plant Operations
Bull Creek SWTP	Water	High	Plant Operations
Central Equalization Basin	Sewer	High	Field Operations
Myrtle Beach SWTP	Water	High	Plant Operations
Central Administrative Building	Admin	High	Adminstration
Central Operations Building	Admin	High	Adminstration
Central Repairs Building	Admin	High	Adminstration
Central Warehouse	Admin	Medium	Adminstration
Central Fleet Operations	Admin	Medium	Adminstration
Central Pump Repairs Building	Admin	Medium	Adminstration
Central Sheds	Admin	Medium	Adminstration
Conway Booster Ground Storage Tank, Booster Station and Well	Water	High	Field Operations
Perry Road Booster Ground Storage Tank, Booster Station and Well	Water	High	Field Operations
South Ground Storage Tank and Booster Station	Water	High	Field Operations
North Booster Pump Station and ASR Well	Water	High	Field Operations
Mill Pond Booster Pump Station	Water	High	Field Operations
Buck Creek Booster Pump Station	Water	High	Field Operations
Hwy 9/Loris Booster Pump Station	Water	High	Field Operations
Boggy Road Booster Pump Station	Water	High	Field Operations
Hwy 319 Booster Station	Water	High	Field Operations
Hwy 905 Booster Pump Station	Water	High	Field Operations
Hwy 501 / Aynor Pump Station	Water	High	Field Operations
Cool Springs Elevated Storage Tank	Water	High	Field Operations
Aynor Tank Elevated Storage Tank and Well	Water	High	Field Operations
Conway Mills Elevated Storage Tank	Water	High	Field Operations
Longs Elevated Storage Tank	Water	High	Field Operations
Caropines Elevated Storage Tank	Water	High	Field Operations
Surfside 10th Ave Elevated Storage Tank	Water	High	Field Operations

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Garden City Elevated Storage Tank	Water	High	Field Operations
Deerfield Elevated Storage Tank and ASR Well	Water	High	Field Operations
Burning Ridge Elevated Storage Tank and ASR Well	Water	High	Field Operations
Surfside 3rd Ave Elevated Storage Tank and ASR Well	Water	High	Field Operations
Hwy 501 Elevated Storage Tank and ASR Well	Water	High	Field Operations
Carolina Forest Elevated Storage Tank and ASR Well	Water	High	Field Operations
North Tank Elevated Storage Tank and ASR Well	Water	High	Field Operations
Watsons Riverside ASR Well	Water	High	Field Operations
Aynor Park ASR Well	Water	High	Field Operations
Studio City ASR Well	Water	High	Field Operations
Caropines ASR Well	Water	High	Field Operations
Pirateland ASR Well	Water	High	Field Operations
Crystal Lakes ASR Well	Water	High	Field Operations
Prestwick ASR Well	Water	High	Field Operations
Daisy ASR Well	Water	High	Field Operations
Seaside ASR Well	Water	High	Field Operations
Tilly ASR Well	Water	High	Field Operations
Jamestown ASR Well	Water	High	Field Operations
Chestnut ASR Well	Water	High	Field Operations
TPI ASR Well	Water	High	Field Operations
Green Sea Floyds Blend Well	Water	Medium	Field Operations
Tern Hall Blend Well	Water	Medium	Field Operations
Bay Road Blend Well	Water	Medium	Field Operations
Long Bay Blend Well	Water	High	Field Operations
WKZQ SCADA Tower	Technology	High	Technology
Jackson Bluff SCADA Tower	Technology	High	Technology
PS 319	Sewer	High	Field Operations
PS 253	Sewer	High	Field Operations
PS 692	Sewer	High	Field Operations
PS Central	Sewer	High	Field Operations
PS 1	Sewer	High	Field Operations
PS 2	Sewer	High	Field Operations
PS 3	Sewer	High	Field Operations
PS 225	Sewer	High	Field Operations
PS 10	Sewer	High	Field Operations
PS 605	Sewer	High	Field Operations
PS 63	Sewer	Medium	Field Operations
PS 171	Sewer	Medium	Field Operations
PS 21	Sewer	Medium	Field Operations
PS 50	Sewer	Medium	Field Operations
PS 53	Sewer	Medium	Field Operations

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PS 58	Sewer	Medium	Field Operations
PS 37	Sewer	Medium	Field Operations
PS 74	Sewer	Medium	Field Operations
PS 80	Sewer	Medium	Field Operations
PS164	Sewer	Medium	Field Operations

Horry County and Participating Jurisdictions Critical Facilities Flood Vulnerability Maps

The following maps show the location of these facilities in each jurisdiction in comparison to the flood, storm surge and tsunami, hazard areas. These maps were presented to the local LEPC and the mitigation task force for public comment and discussion purposes when identifying the vulnerable assets of each jurisdiction.

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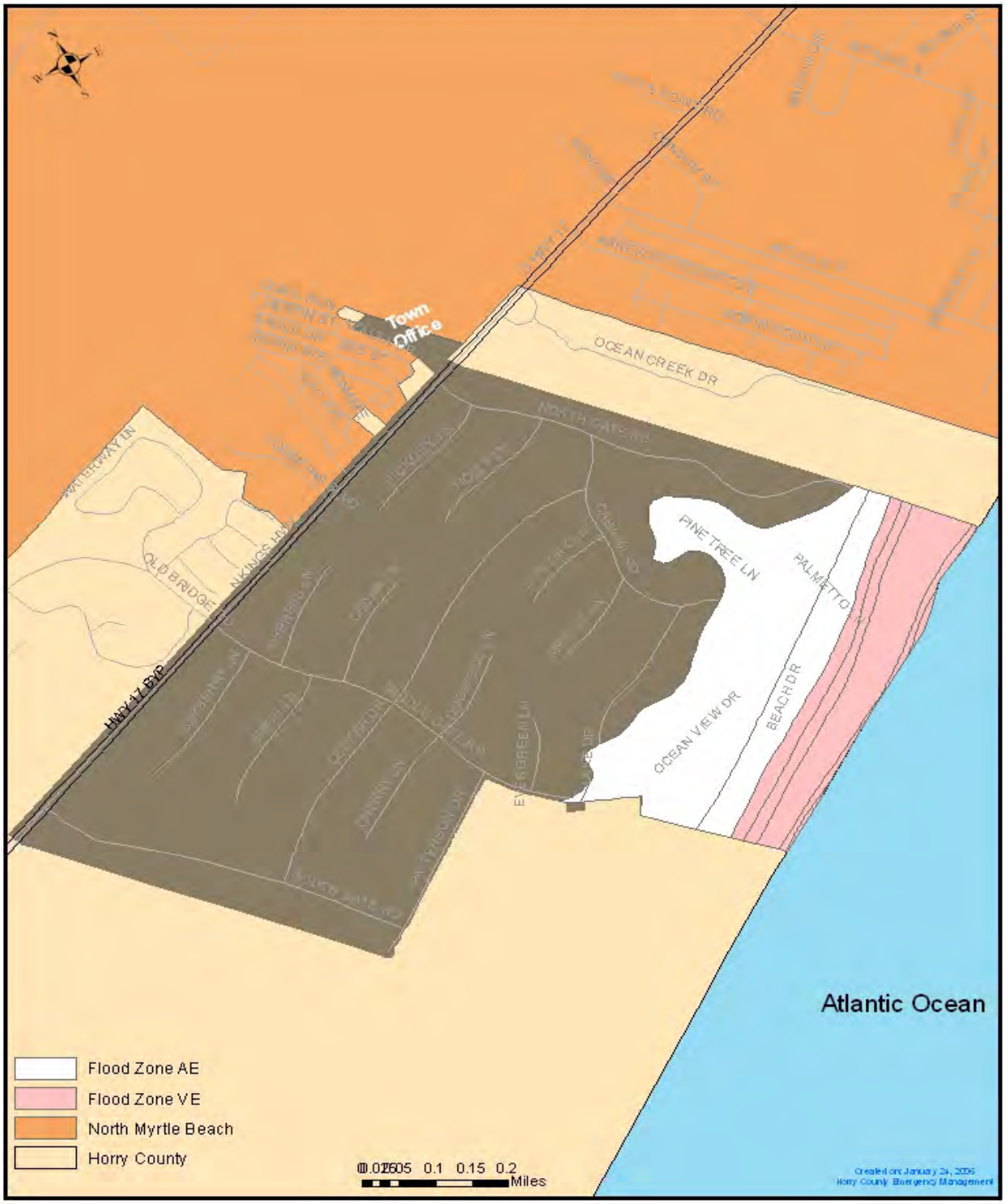
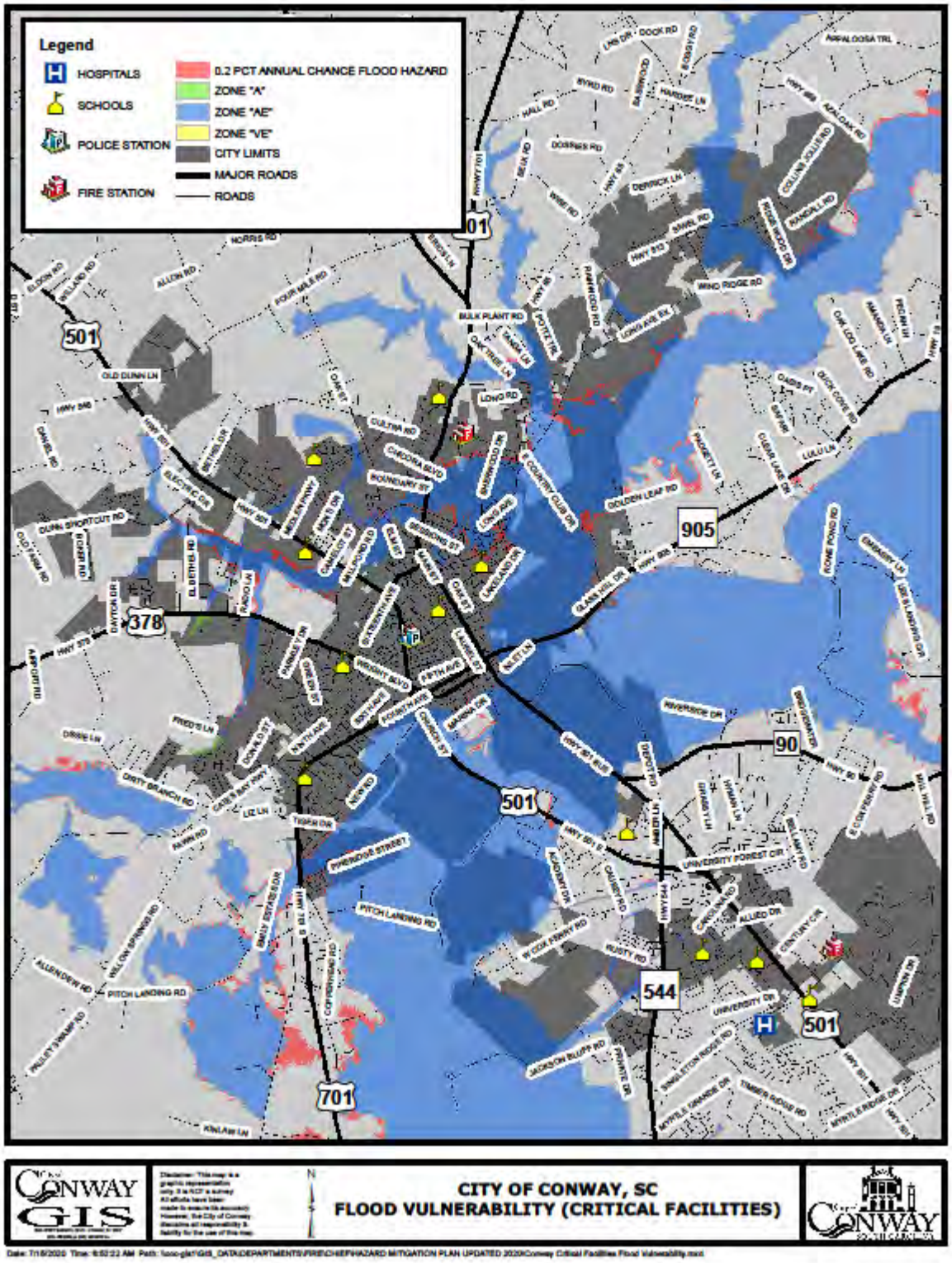
Town of Briarcliffe Acres (Critical Facilities) Flood Vulnerability



Map Generated by Horry County Emergency Management



Map Provided by the City of Conway

The maps for Horry County are broken down by critical facilities (Level 1 & Level 2 both on one map), Essential Facilities, Utility Facilities and Transportation Structures.

Critical Facilities (Both present on one map)

- Level 1 (Must remain operational)
  - E911 and Government Center
  - Emergency Operations Center
- Level 2 (Must be operational within 24 hours)
  - Hospitals
  - Police Stations
  - Fire Stations
  - Emergency Shelters (Schools)

Essential Facilities (must be operational within 48 hours)

- Public Schools (non-shelter)
- University (non-shelter)
- County Buildings
- Post Office
- Library
- Boat Landings
- Landfill

Utility Facilities (must be operational within 48 hours)

- Radio Towers
- Electrical utilities
- Sewage treatment plants
- Water treatment plans and pumping stations

Transportation Structures (must be operational within 48 hours)

- Major Bridges
- Airports

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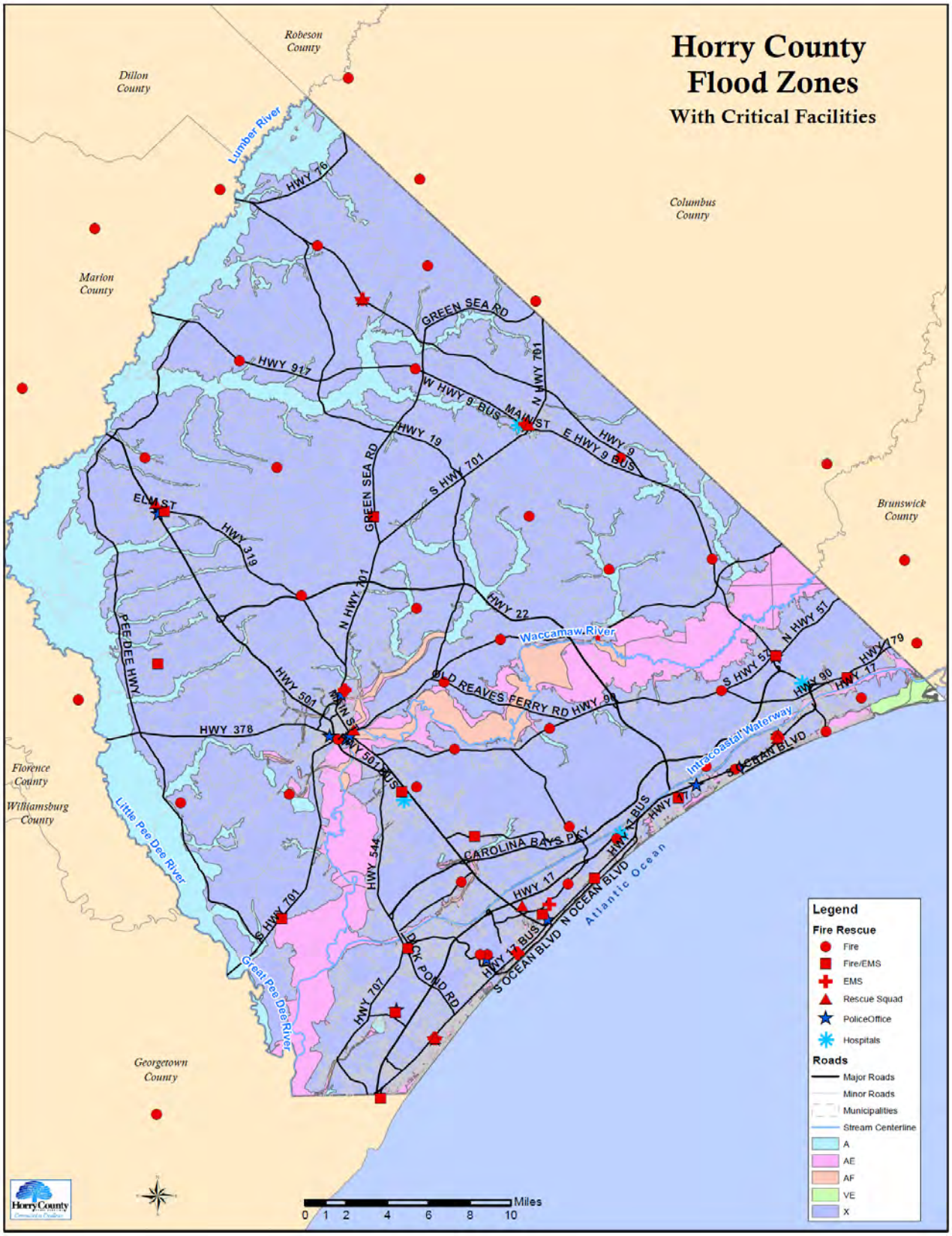

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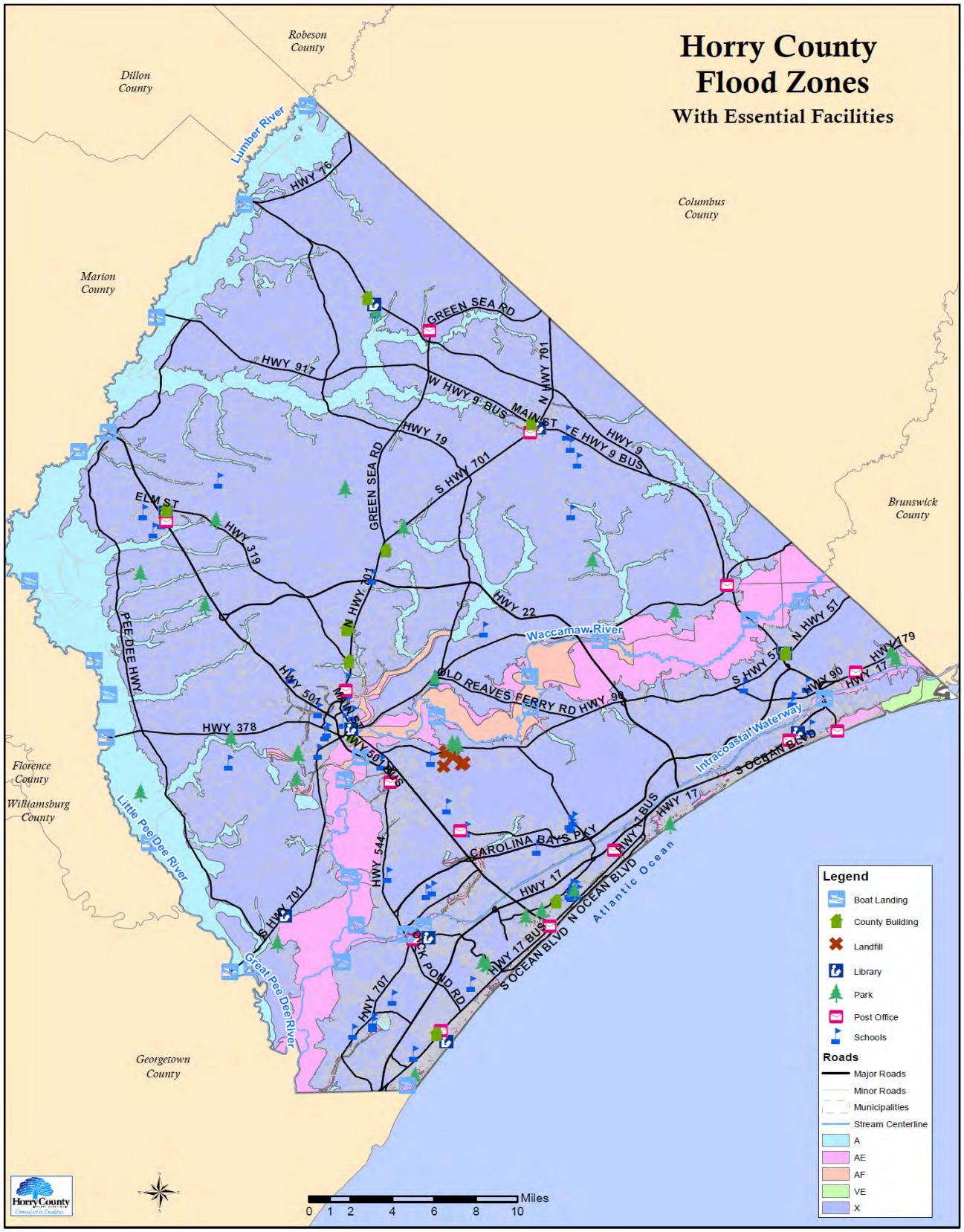

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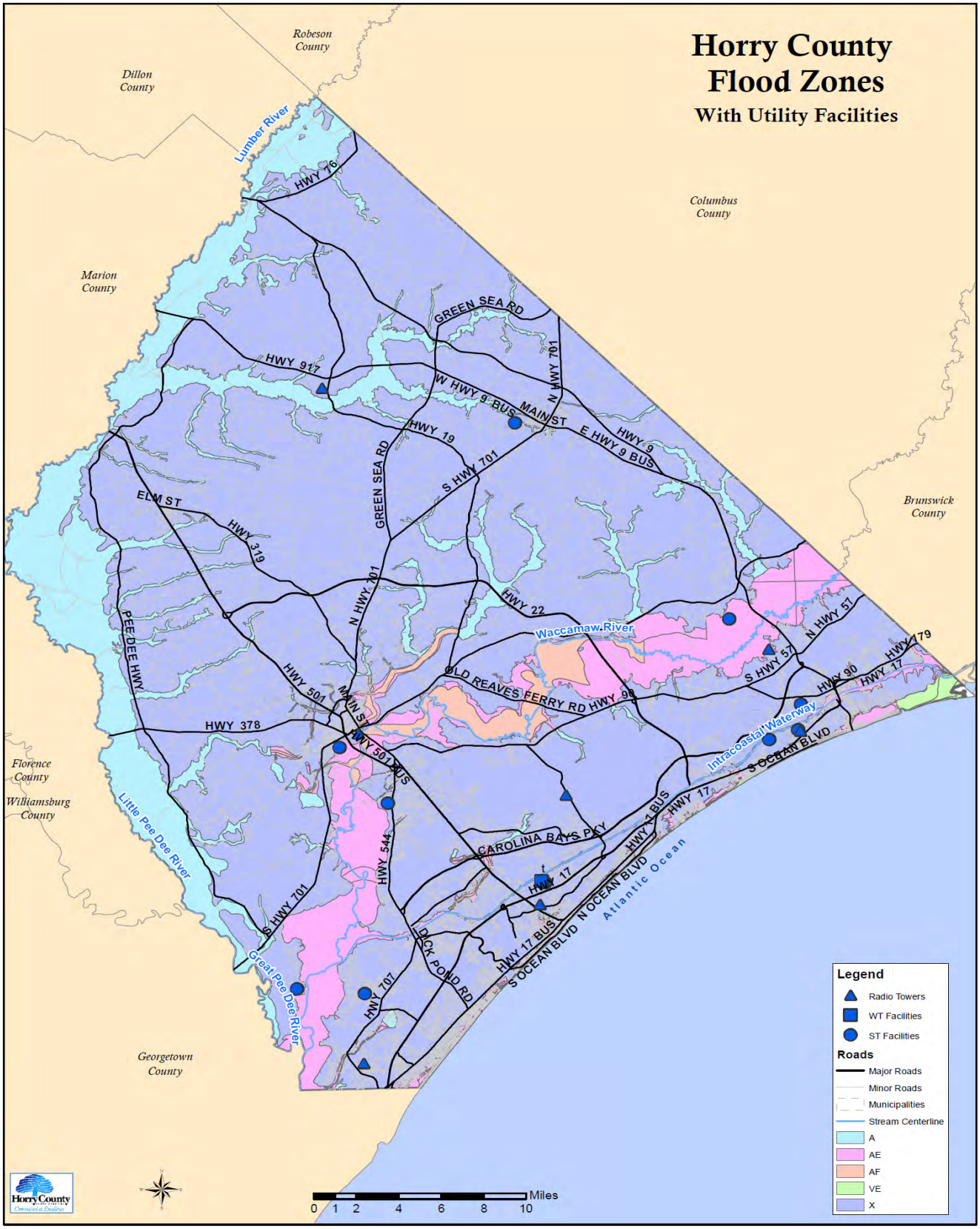

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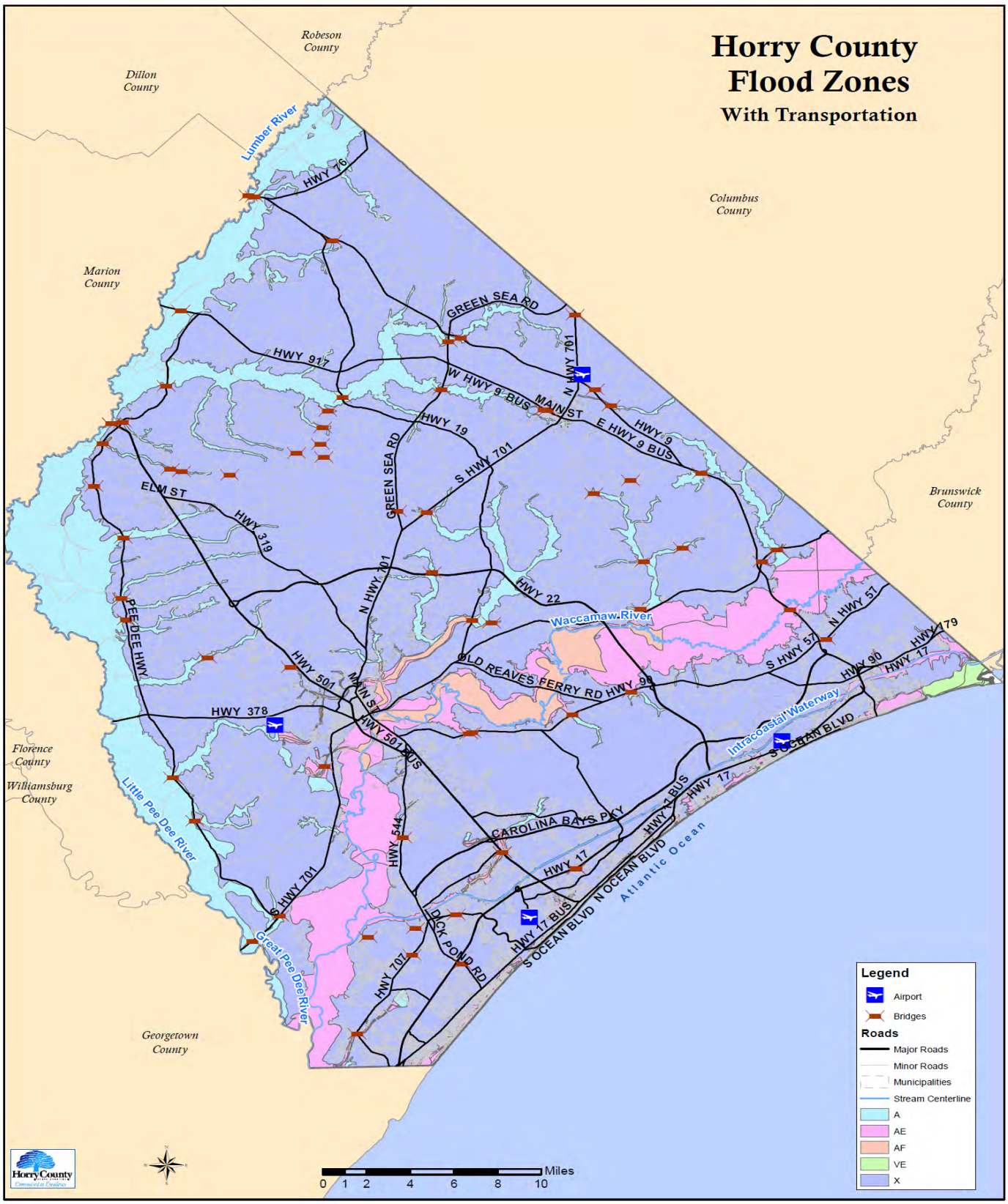
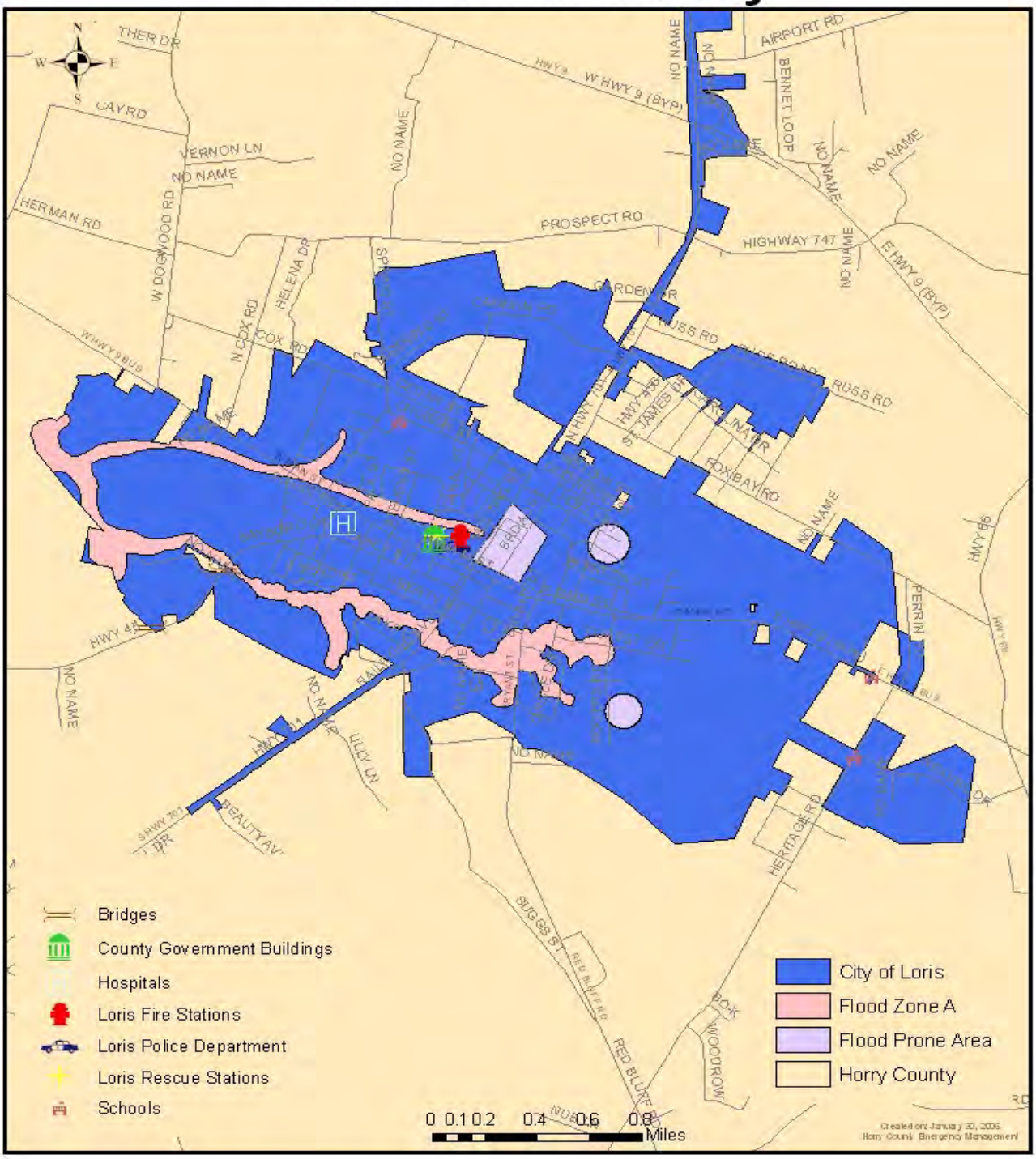


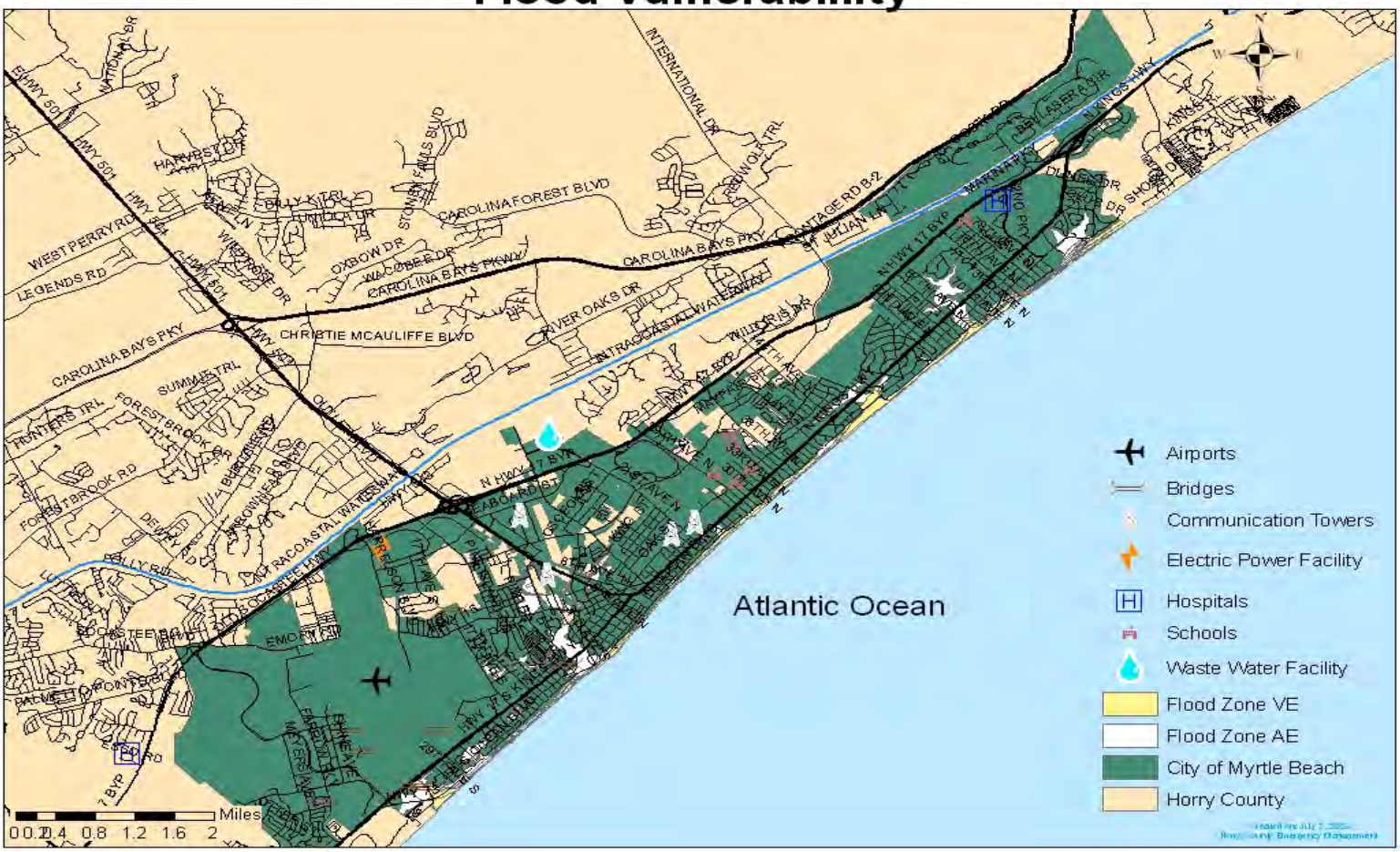
Map Generated by Horry County GIS

City of Loris (Critical Facilities) Flood Vulnerability



Map Generated by Horry County Emergency Management

City of Myrtle Beach (Critical Facilities) Flood Vulnerablility



Map Generated by Horry County Emergency Management

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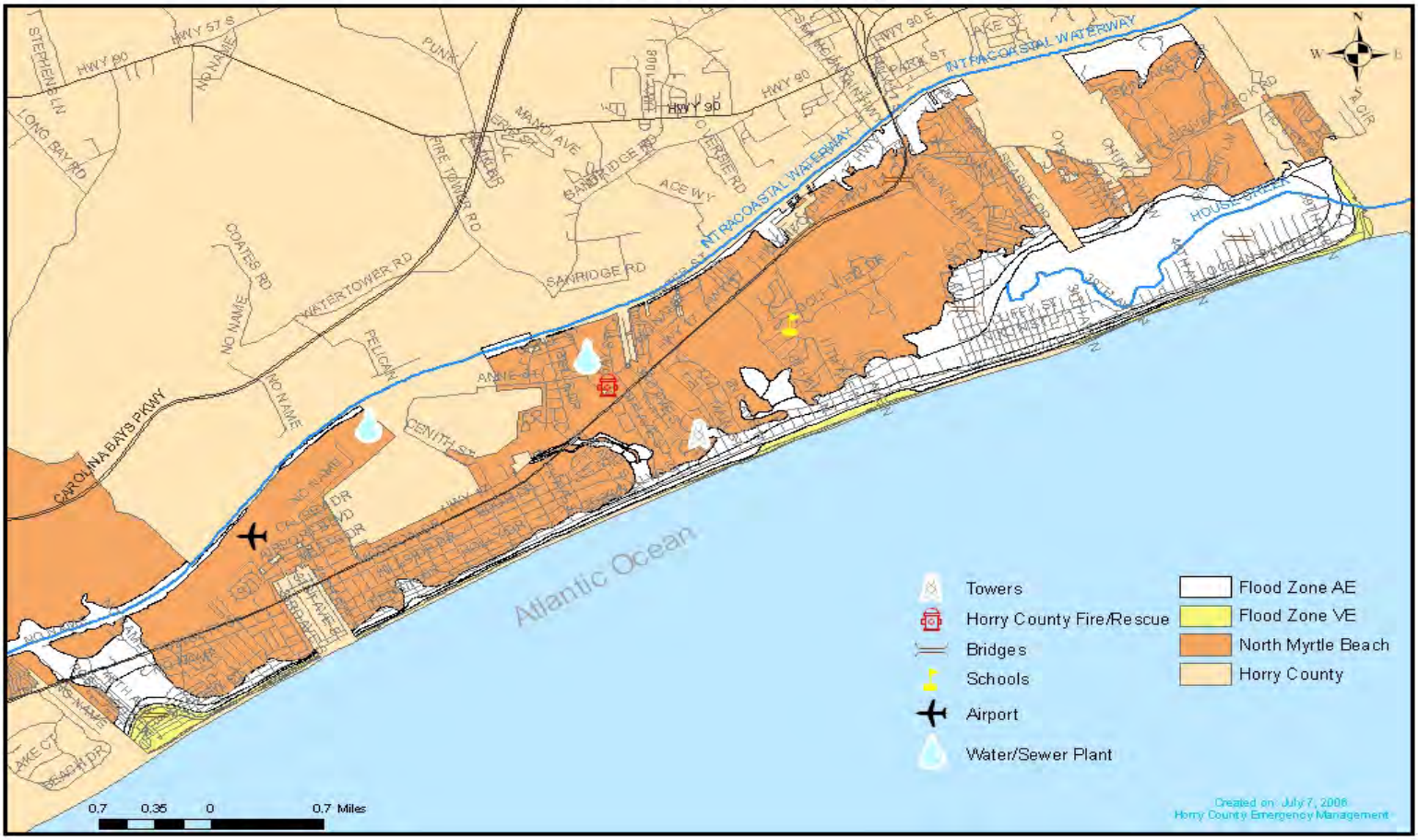
City of North Myrtle Beach (Critical Facilities) Flood Vulnerability



Map Generated by Horry County Emergency Management

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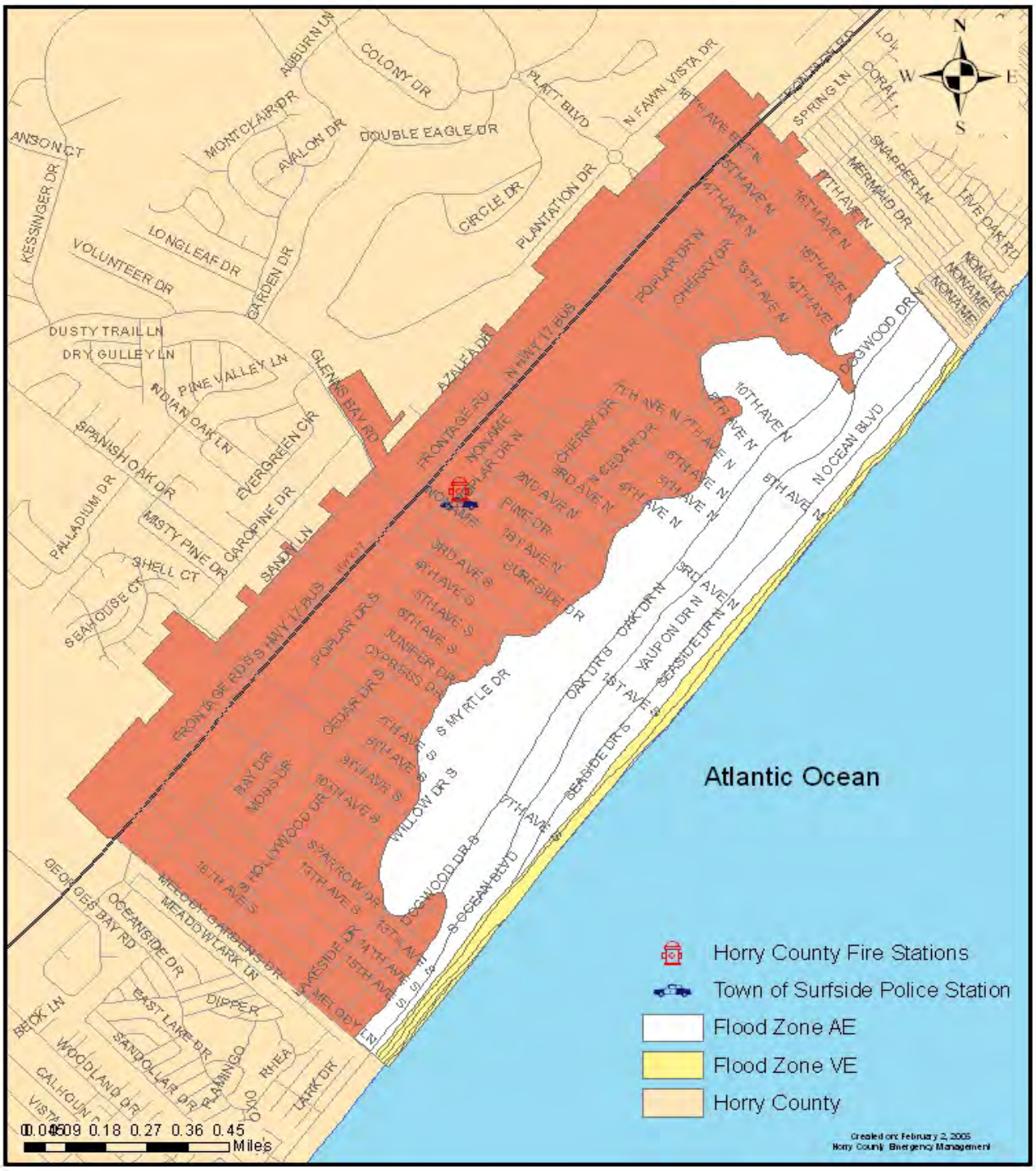
Town of Surfside Beach (Critical Facilities) Flood Vulnerability



Map Generated by Horry County Emergency Management

Horry County and Participating Jurisdictions Critical Facilities Storm Surge Vulnerability Maps

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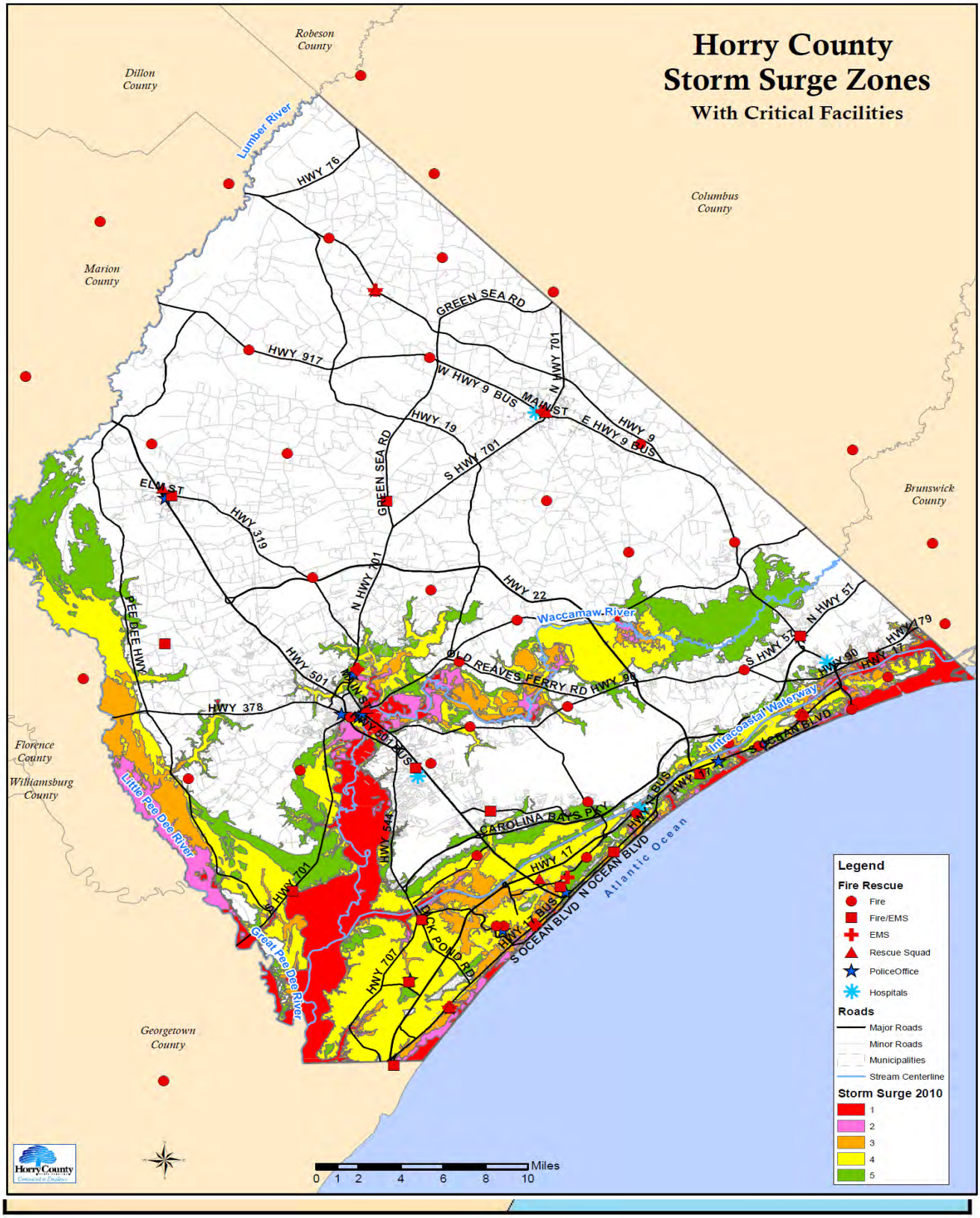

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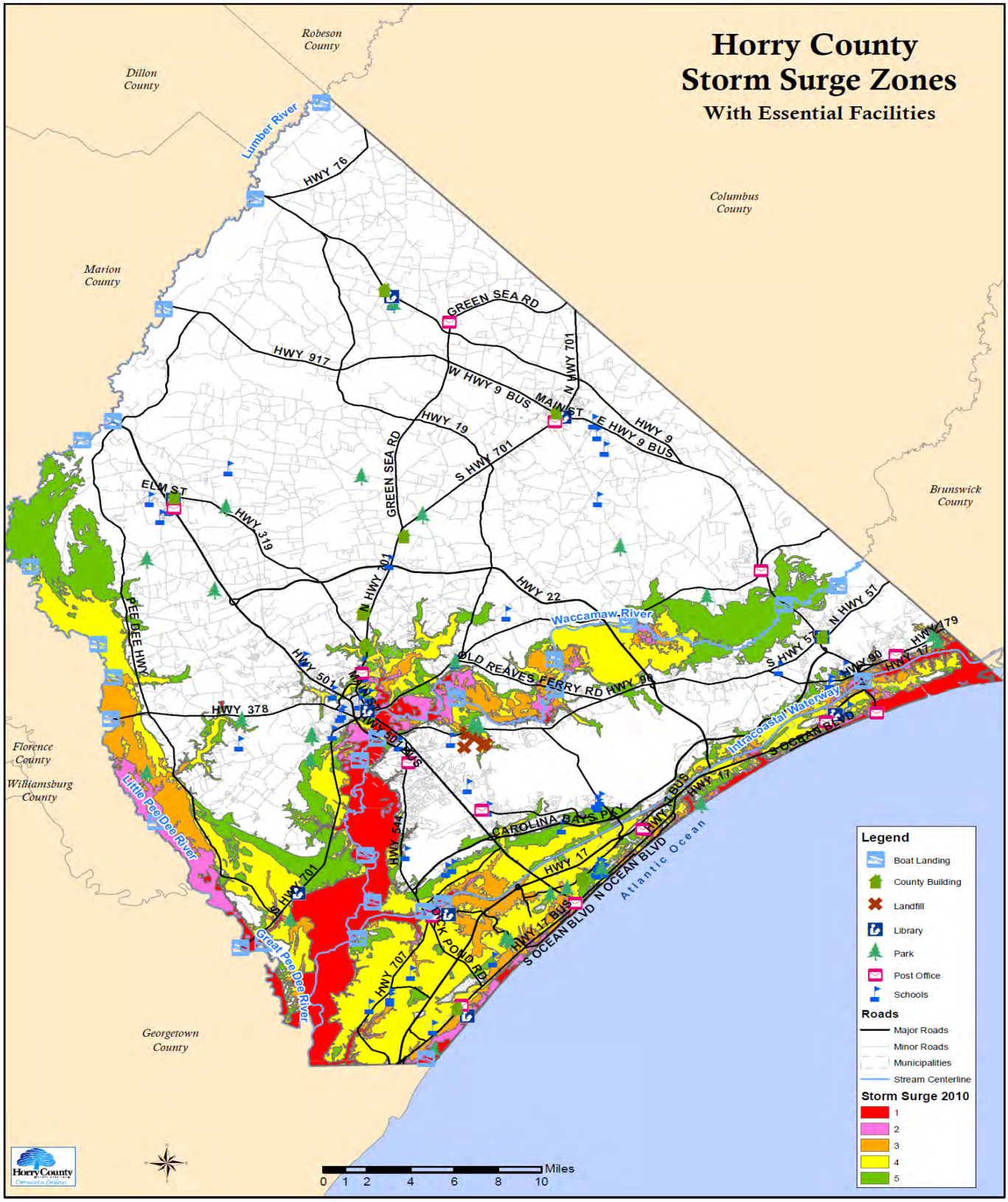

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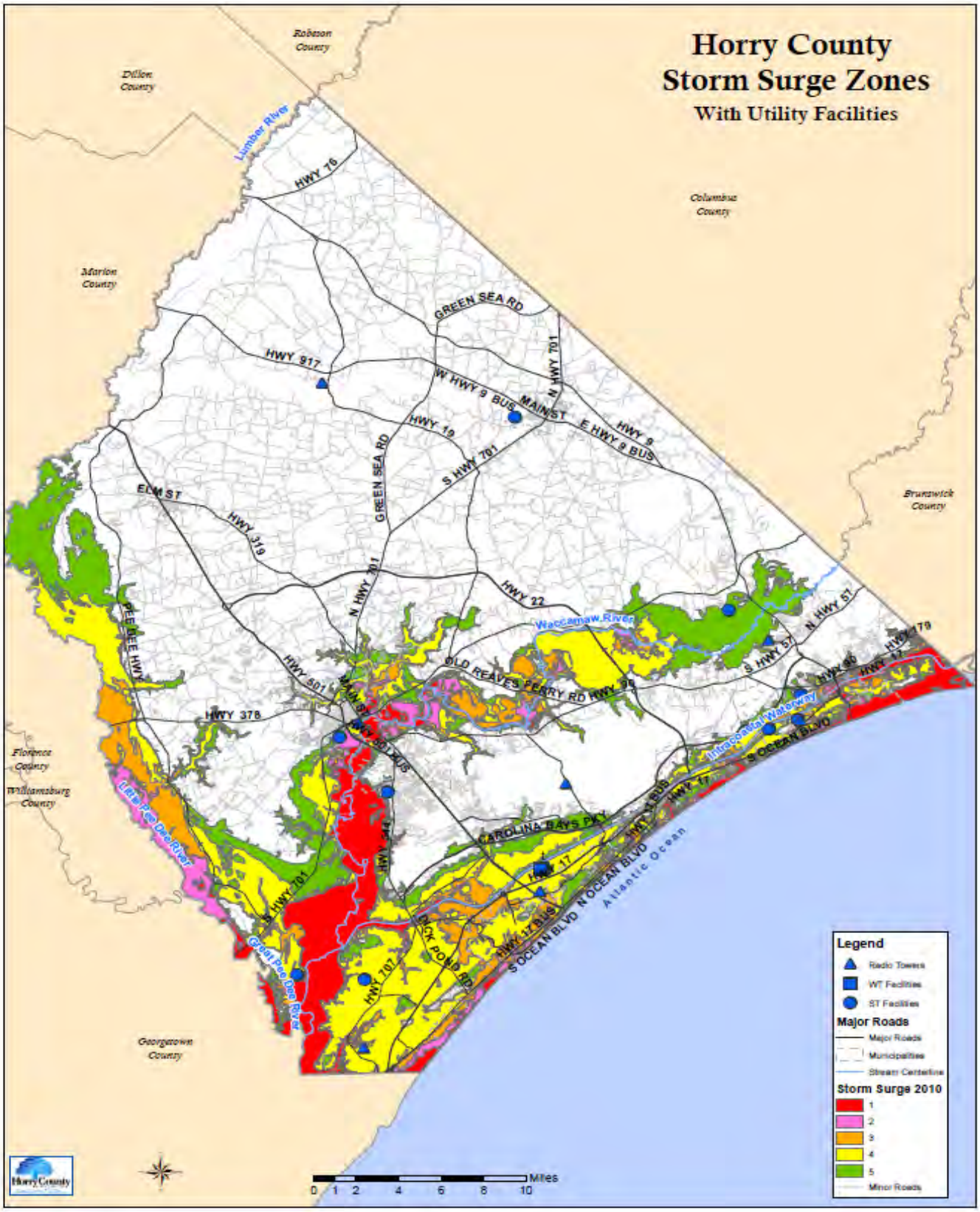

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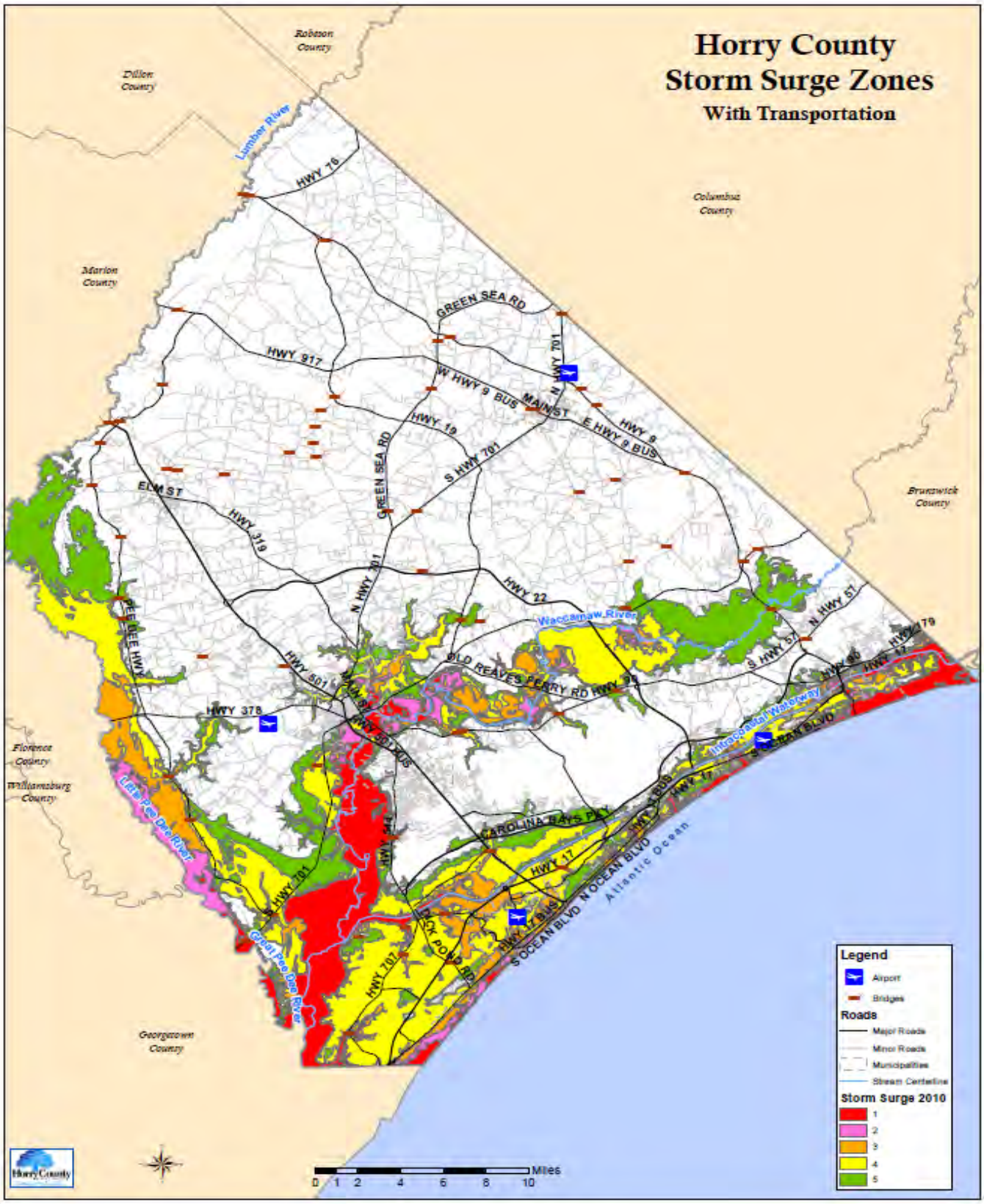

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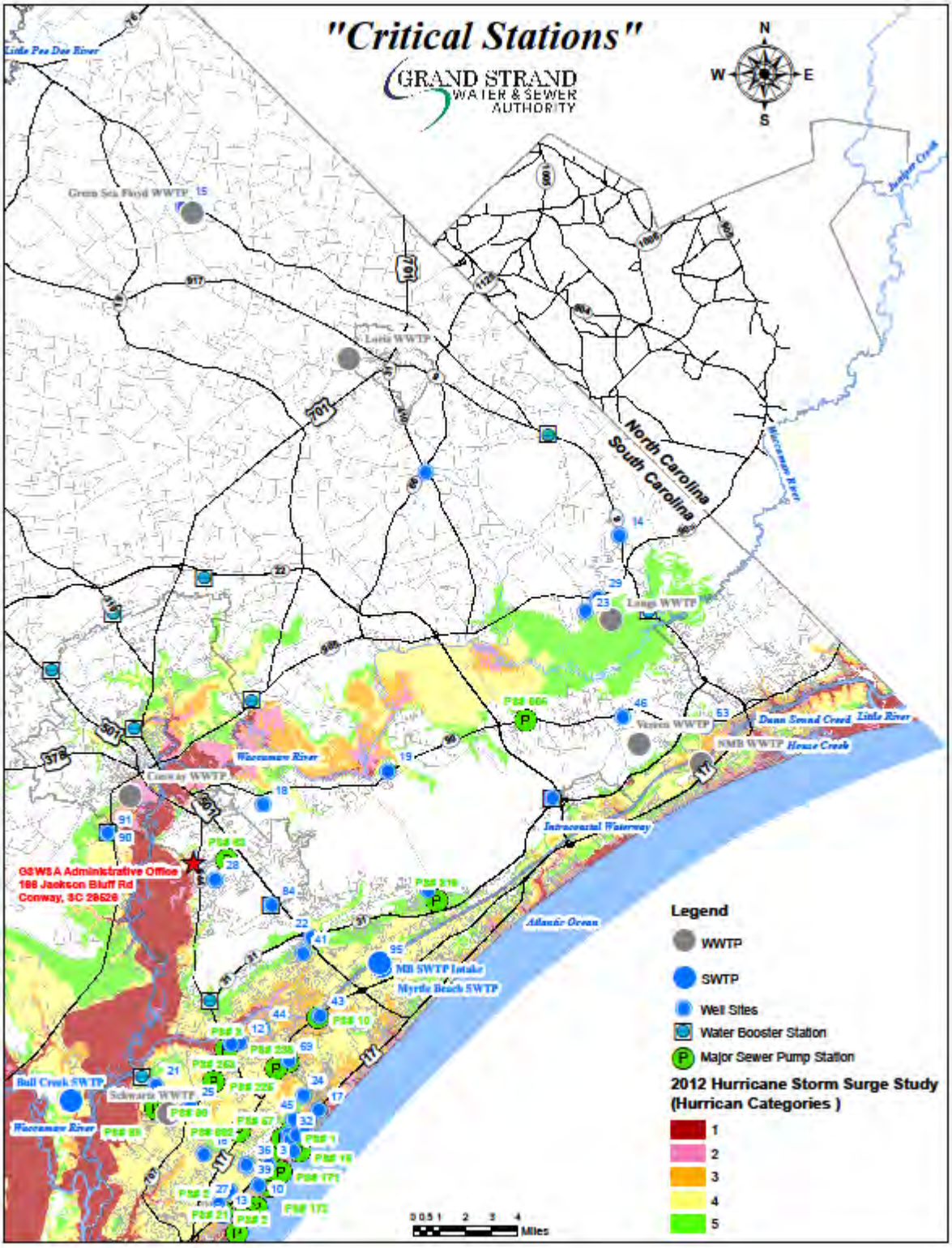
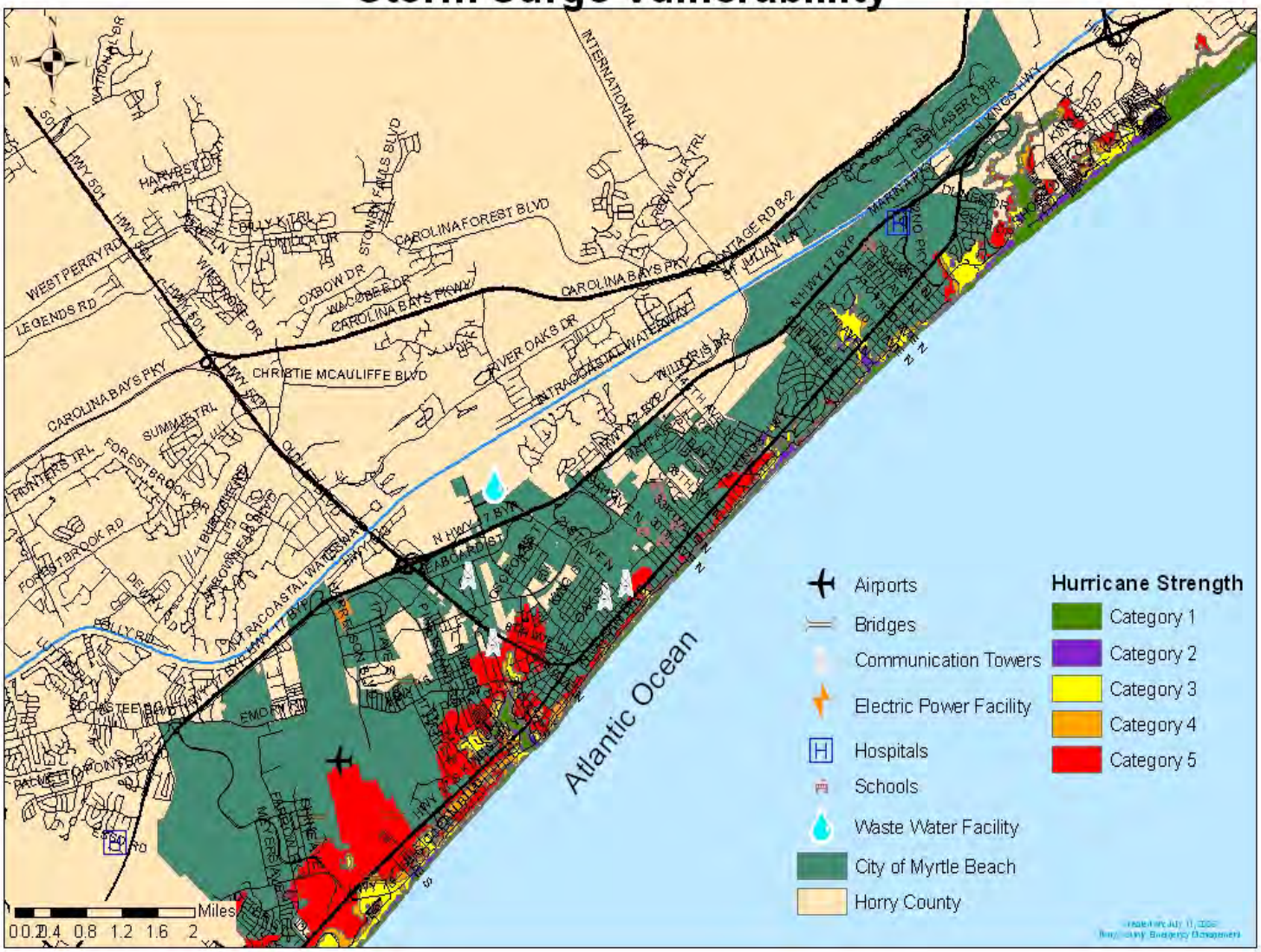


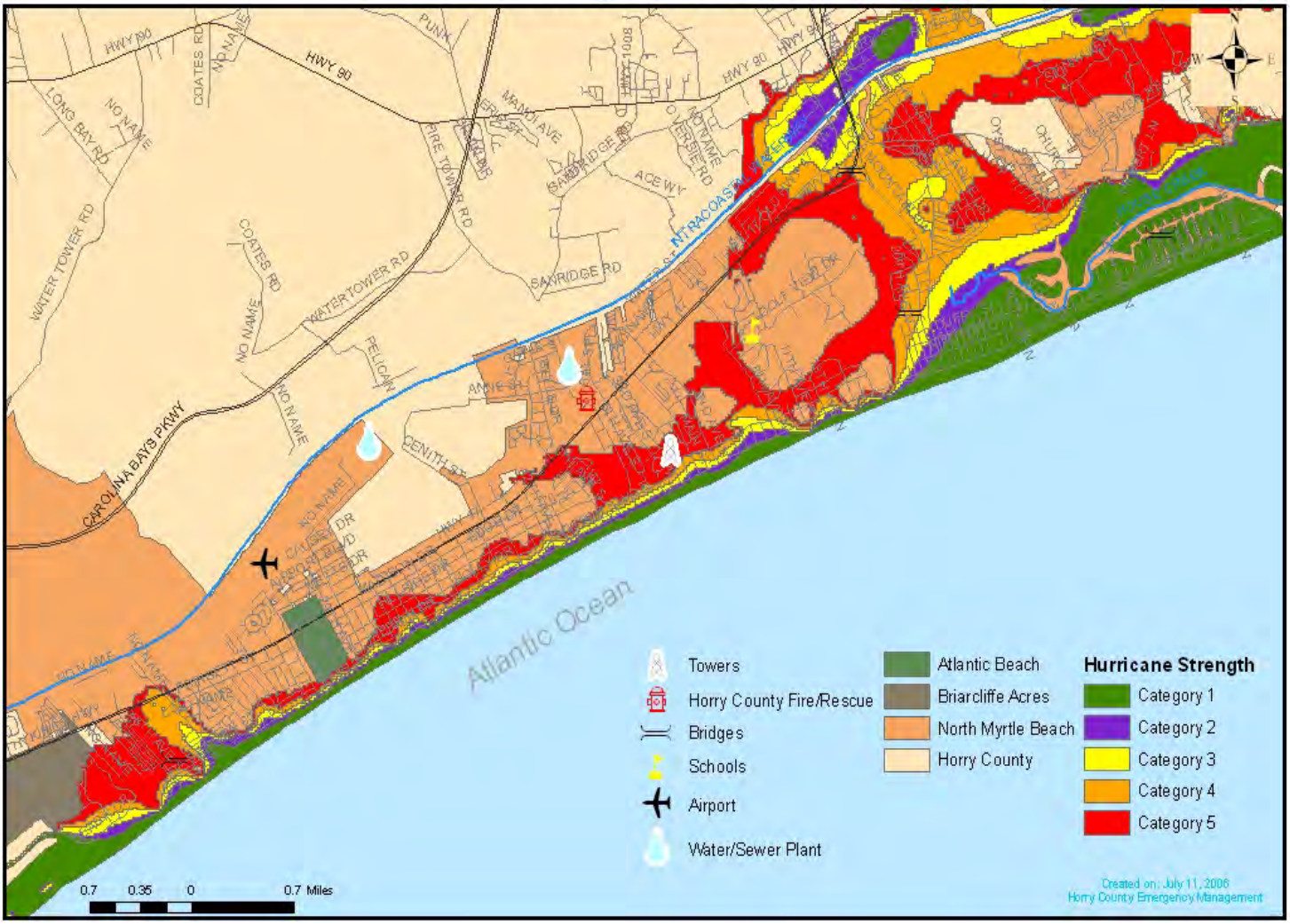
Map provided by Grand Strand Water and Sewer Authority

City of Myrtle Beach (Critical Facilities) Storm Surge Vulnerablility



Map Generated by Horry County Emergency Management

City of North Myrtle Beach (Critical Facilities) Storm Surge Vulnerability



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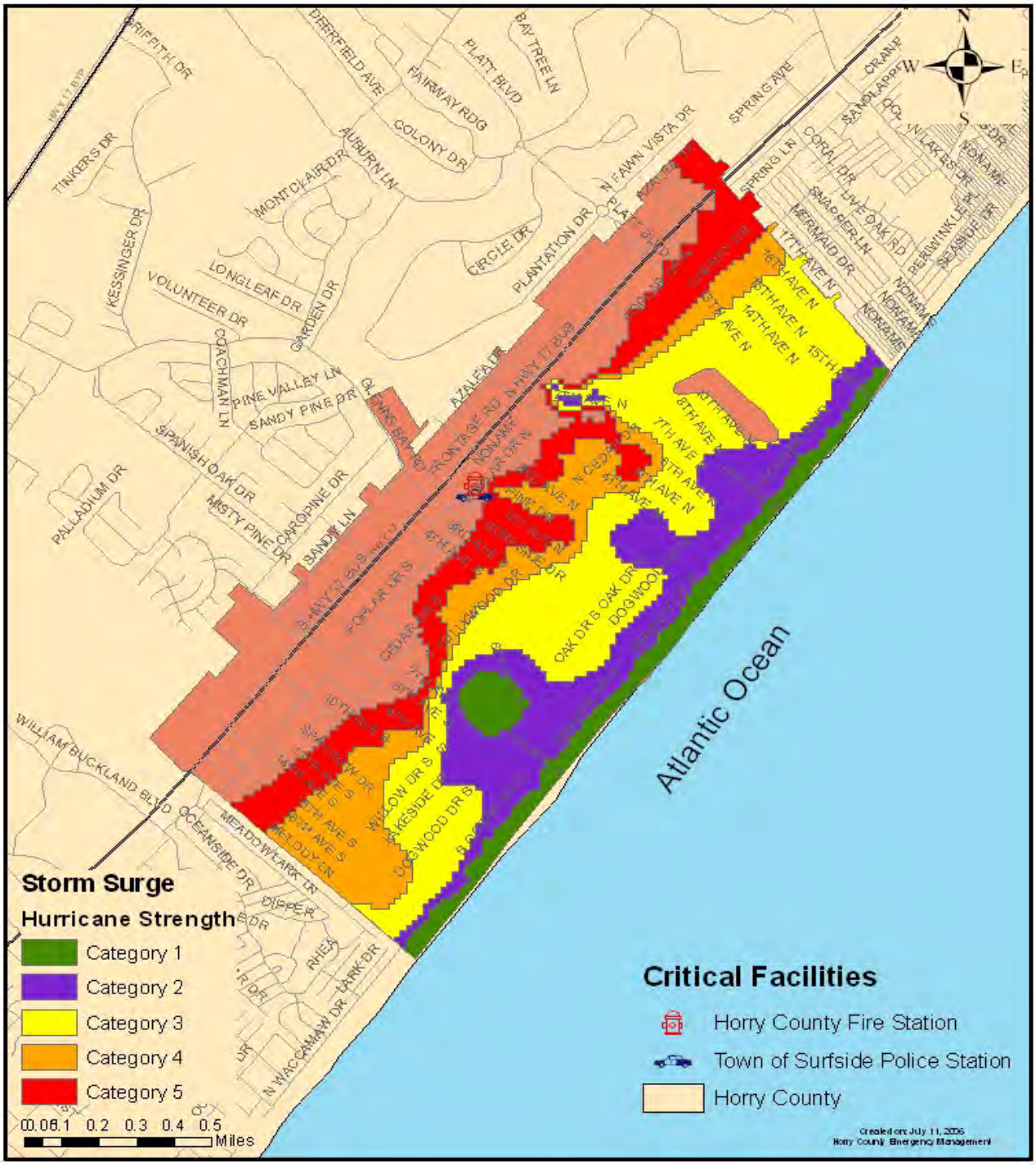
Town of Surfside Beach (Critical Facilities) Storm Surge Vulnerability



Map Generated by Horry County Emergency Management

Horry County and Participating Jurisdictions Critical Facilities Tsunami Vulnerability Maps

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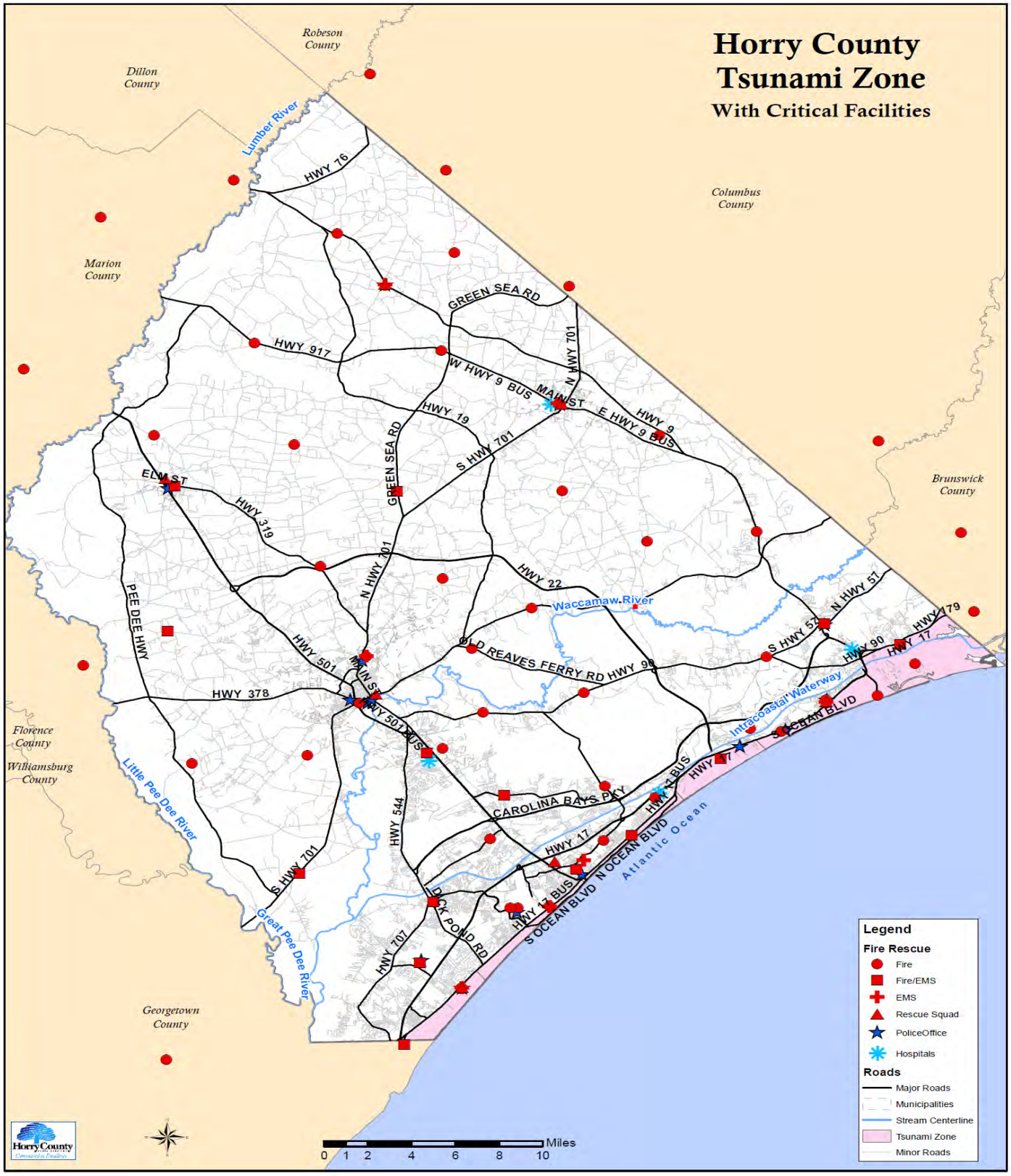
Horry County
Tsunami Zone
With Critical Facilities
Robeson County
Dillon County
Columbus County
Marion County
Brunswick County
Florence County
Williamsburg County
Georgetown County
Lumber River
Little Pee Dee River
Great Pee Dee River
Waccamaw River
Intracoastal Waterway
Atlantic Ocean
HWY 76
HWY 917
GREEN SEA RD
W HWY 9 BUS
MAIN ST
E HWY 9 BUS
HWY 9
N HWY 701
HWY 19
S HWY 701
ELM ST
HWY 319
PEE DEE HWY
N HWY 701
HWY 22
N HWY 57
S HWY 57
HWY 179
HWY 90
HWY 17
HWY 501
OLD REAVES FERRY RD
HWY 99
HWY 378
HWY 501 BUS
S OCEAN BLVD
HWY 544
CAROLINA BAYS PKY
HWY 17 BUS
HWY 17
N OCEAN BLVD
S OCEAN BLVD
DUCK POND RD
HWY 707
Legend
Fire Rescue
Fire
Fire/EMS
EMS
Rescue Squad
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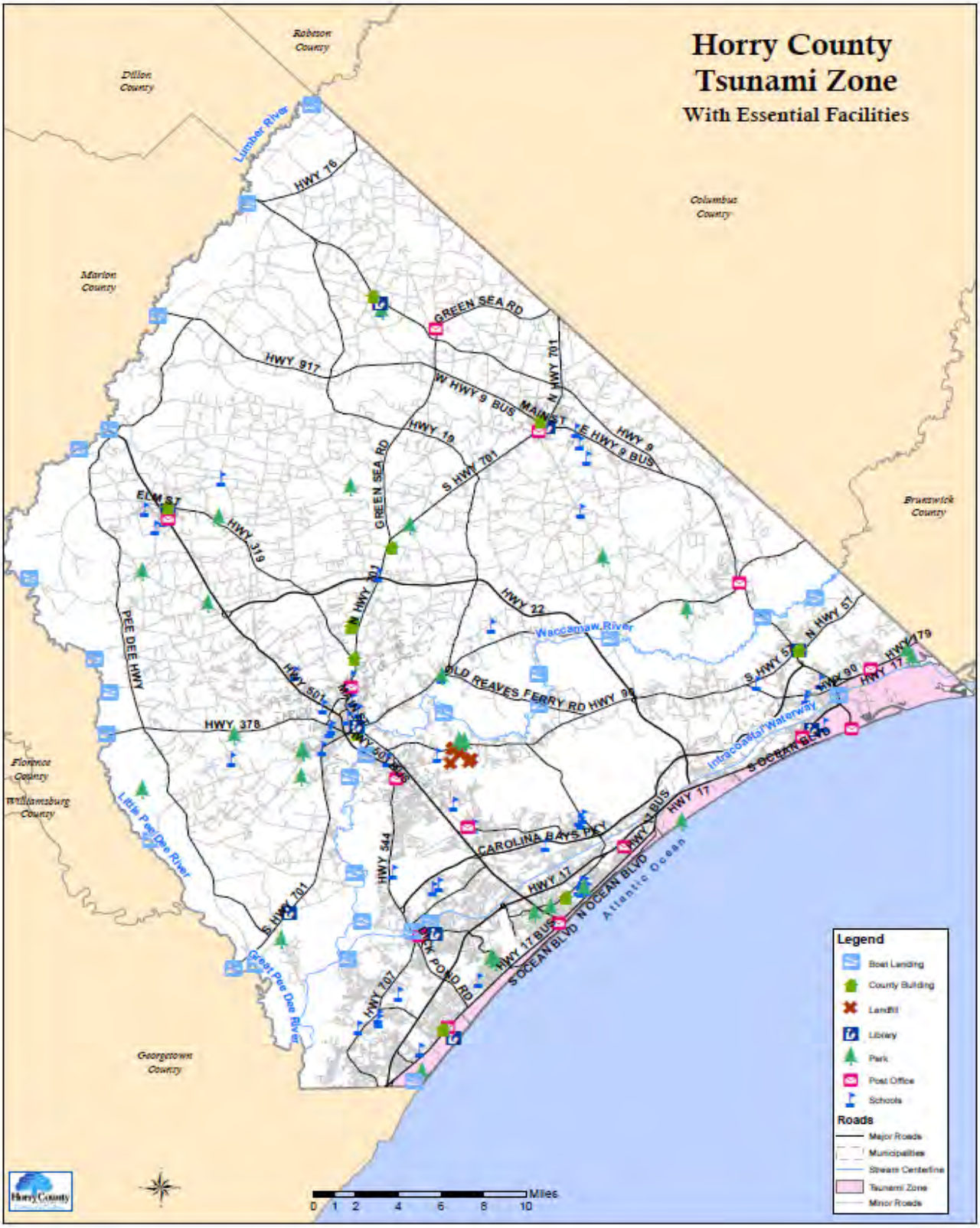
Tsunami Zone
Minor Roads
Miles
0 1 2 4 6 8 10
Horry County



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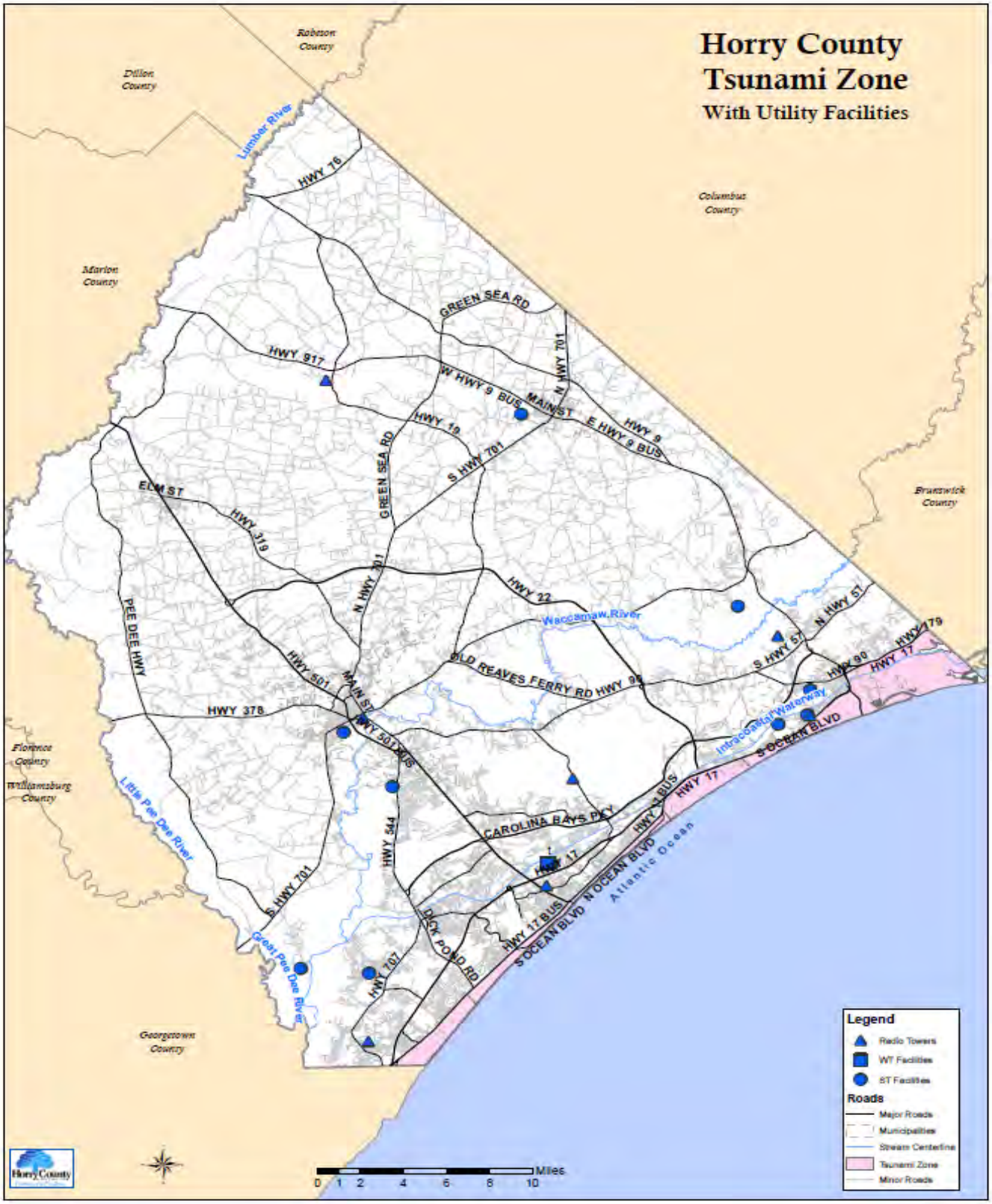

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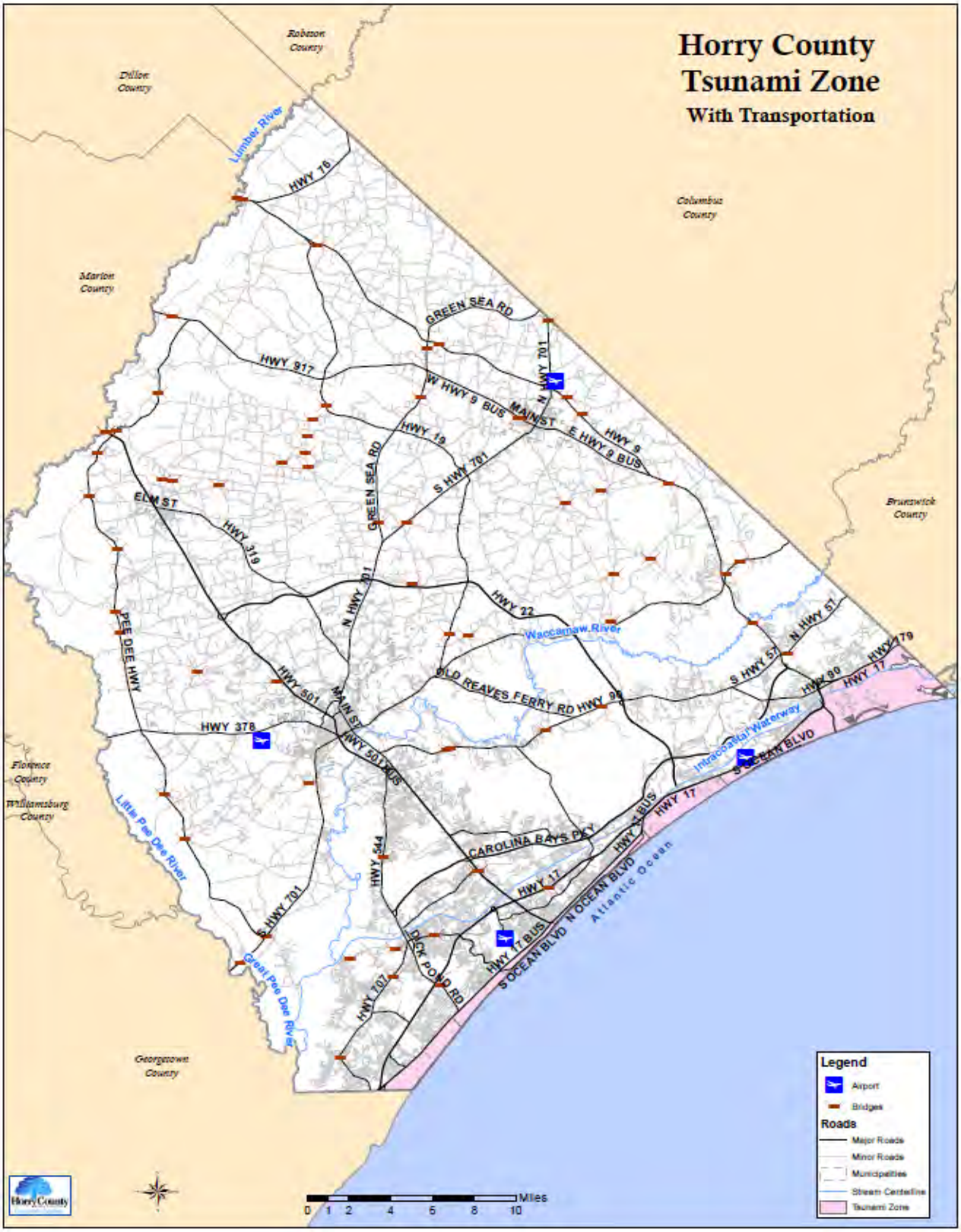

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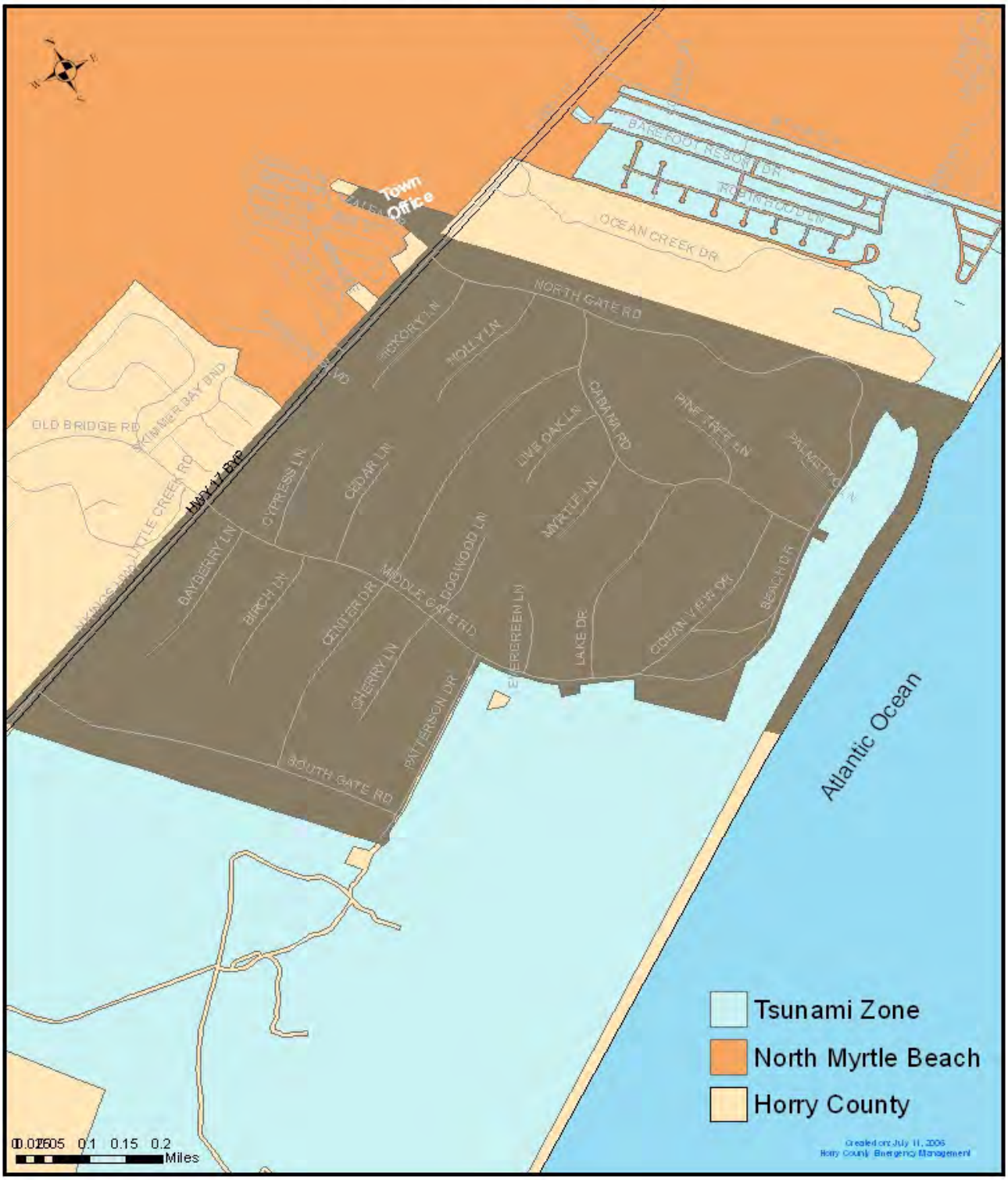
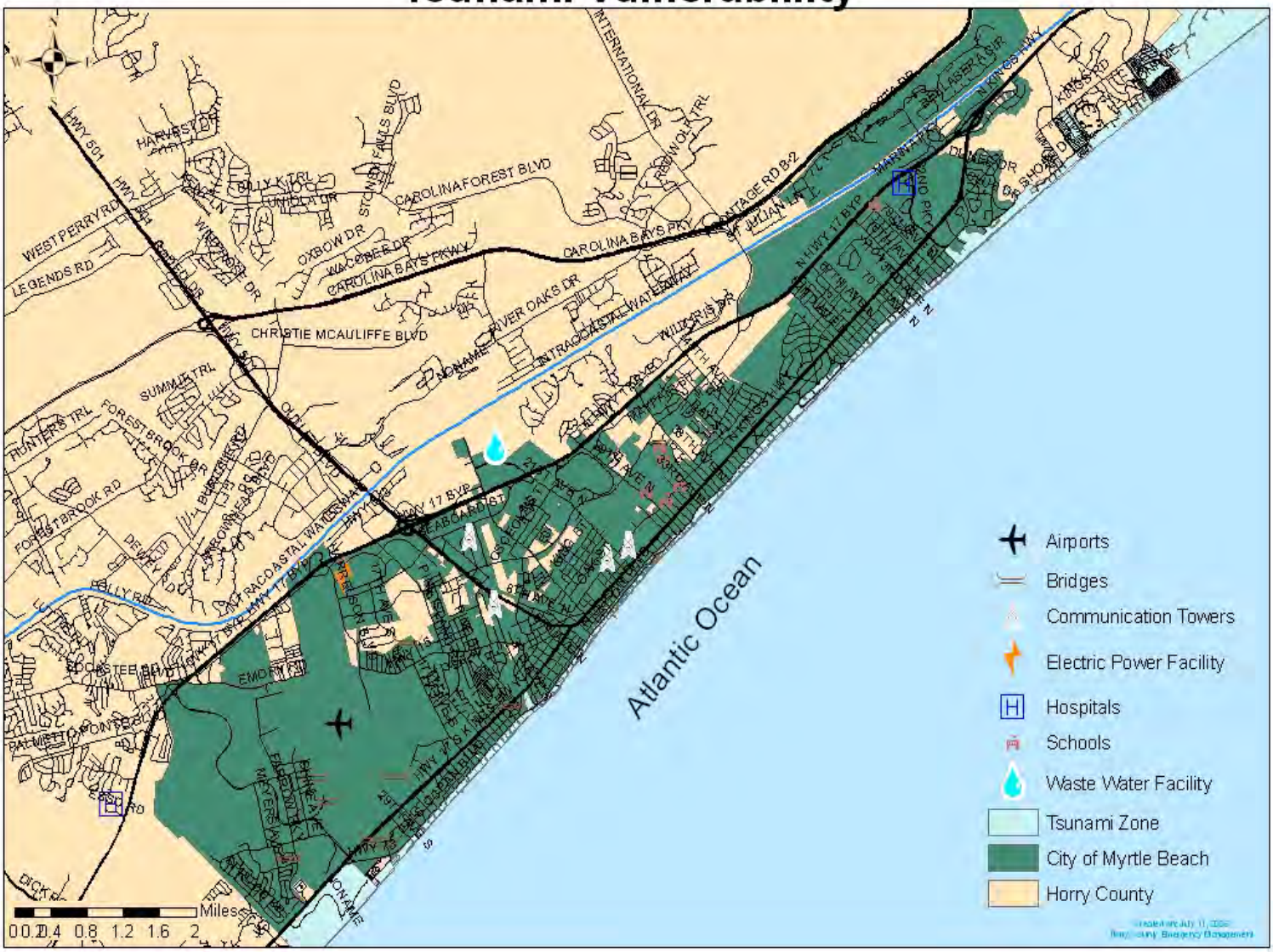
Town of Briarcliffe Acres (Critical Facilities) Tsunami Vulnerability



Map Generated by Horry County Emergency Management

City of Myrtle Beach (Critical Facilities) Tsunami Vulnerablility



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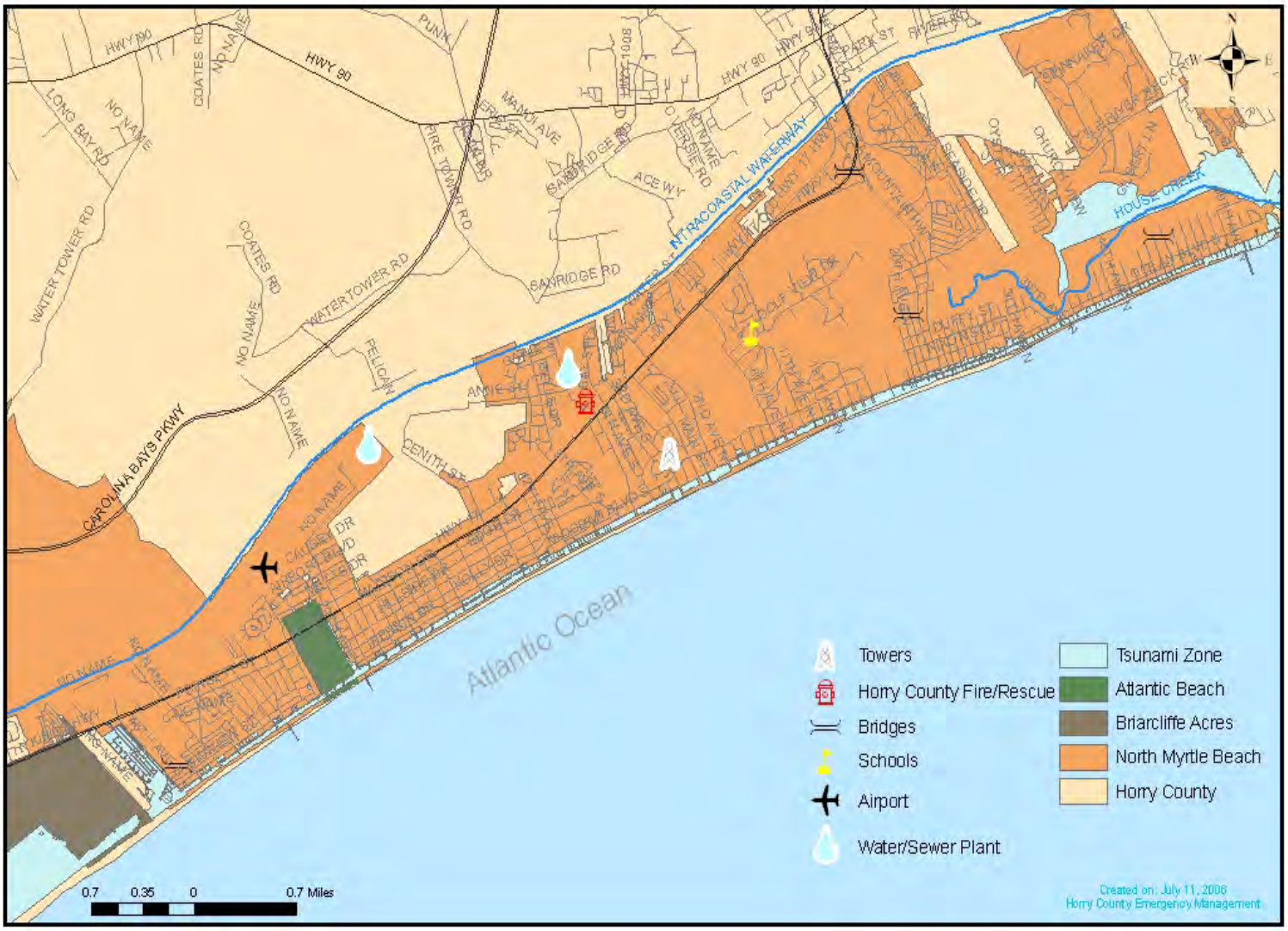
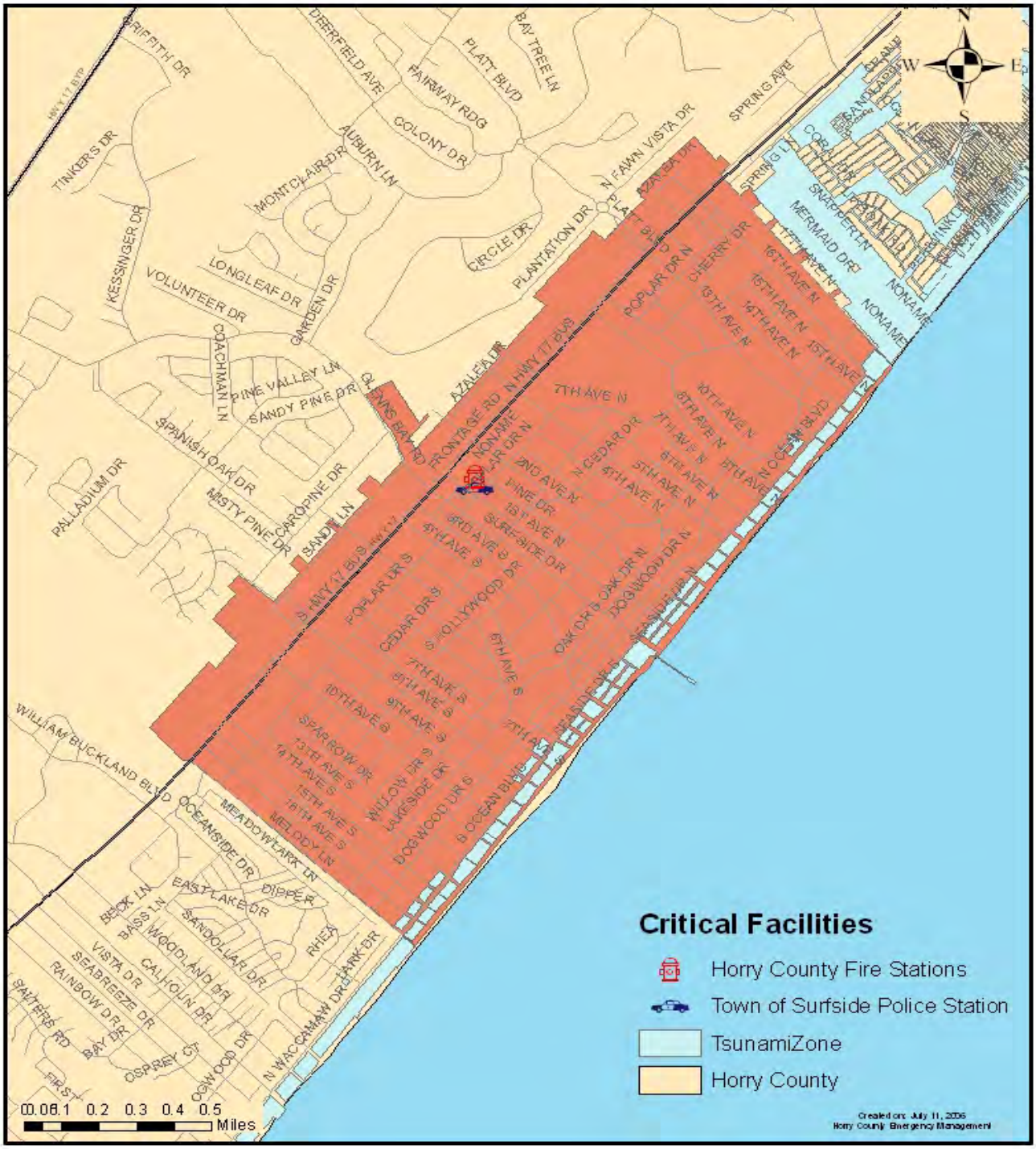
City of North Myrtle Beach (Critical Facilities) Tsunami Vulnerability



Map Generated by Horry County Emergency Management

Town of Surfside Beach (Critical Facilities) Tsunami Vulnerability



Map Generated by Horry County Emergency Management

3.3.4 ASSESSING VULNERABILITY: ESTIMATING POTENTIAL LOSSES

The planning team reviewed and analyzed this section of the plan during the update. The charts were updated with the most current information available at the time of the update in January 2015 and reviewed again in June 2020. Portions of the data was obtained from the 2010 census and some of the information came from the Horry County Assessor's Office and it was applied where available.

The following charts summarize the types and numbers of existing buildings in flood, storm surge and tsunami hazard areas as mapped. Included are charts for hurricane, tornado, thunderstorm, winter storm, earthquake, lightning, drought, and extreme heat summarizing the types and numbers of existing buildings affected by the above hazards. This information was gathered from United States Census Bureau (2010), Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool, local comprehensive plans, and the Horry County GIS database. The potential dollar losses were estimated by taking the specific number of structures in an area and then divide that number by the number of structures in the hazard area (structures in hazard area divided by structures in town equals percent in hazard area). The Horry County Assessor's Office provided the property values for each jurisdiction participating in the plan. From this point the total improved property value (which is the value of the structures on the property-not including the actual land value as it is rarely unusable after an event) was multiplied by each respective percentage of properties in hazard area to obtain the total value of structures. For each class total (i.e.-residential, commercial, government etc.) the percentage of their makeup of the total structure count was obtained. Then that percentage amount was used to determine what total dollar amount that class represented of the total property value. After getting this number then the percentage in hazard area number was used to determine that class's potential dollar loss. Although, not complete scientific it does provide an idea and average of what potential losses could be incurred during the given events (depending on many variables).

WORKING DRAFT

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Atlantic Beach

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	138	10	7.24%	$764,311.73
Commercial	47	*	*	*
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	*	-	-	-
Government	1	0	-	-
Education	-	-	-	-
TOTAL	**186**	**10**	**5.37%**	**$764,118.78**

Green = Local data from the Town of Atlantic Beach
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Aynor

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	282	11	3.90%	$1,047,227.06
Commercial	81	-	-	-
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	5	0	0	0
Government	3	0	0	0
Education	3	0	0	0
TOTAL	**374**	**11**	**2.94%**	**$1,047,013.38**

Green = Local data from the Town of Aynor
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Briarcliffe Acres

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	246	42	17.07%	$ 10,562,272.02
Commercial	-	-	-	-
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	1	0	0	0
Government	1	0	0	0
Education	1	0	0	0
TOTAL	**249**	**42**	**16.86%**	**$ 10,560,109.26**

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

City of Conway

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in City	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	7474	849	11.36%	$1,189,653,546
Commercial	761	90	11.83%	$526,066,421
Industrial	*	*	-	-
Agricultural	*	*	-	-
Religious	32	*	-	-
Government	3	*	-	-
Education	42	9	21.43%	$169,975,000
TOTAL	**8312**	**948**	**11.41%**	**$1,885,694,967**

Green = Local data from the City of Conway
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Horry County

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in County	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	258,069	14,688	5.69%	$ 1,881,136,224
Commercial	10,786	376	*	*
Industrial	*	*	*	*
Agricultural	*	*	*	*
Religious	310	6	1.93%	$766,770.25
Government	60	0	-	-
Education	45	0	-	-
TOTAL	**270,135**	**15,070**	**7.62%**	**$1,881,902,994.25**

Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

City of Loris

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in City	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	962	145	15.07%	$15,486,217.56
Commercial	224	*	*	*
Industrial	*	*	*	*
Agricultural	*	*	*	*
Religious	14	0	0	0
Government	1	0	0	0
Education	4	0	0	0
TOTAL	**1205**	**145**	**12.04%**	**$15,485,021.45**

Green = Local data from the City of Loris
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Surfside Beach

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	3,964	1,196	30.17%	$178,699,908.75
Commercial	350	260	74.28%	$ 38,829,149.78
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	4	0	-	-
Government	1	0	-	-
Education	-	-	-	-
TOTAL	**4,319**	**1,456**	**33.66%**	**$217,227,637.44**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

HORRY ELECTRIC COOPERATIVE, INC.

Type of Structure Occupancy Class	Number of Substation			Value of Substations
	Total Substations	Substations in Hazard Area	% in Hazard Area	Potential Dollar Losses
Substations	22	0	-	-
TOTAL	**22**	**0**	**-**	**-**

Green = Local data from Horry Electric Cooperative, Inc.
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FLOOD HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS Types and Numbers of Buildings in Hazard Area				
GRAND STRAND WATER & SEWER AUTHORITY				
Type of Structure Occupancy Class	**Number of Plants**			**Value of Plants**
	Total Substations	Substations in Hazard Area	% in Hazard Area	Potential Dollar Losses
Substations	62	1	1.61%	$20,000,000.00
TOTAL	**62**	**1**	**1.61%**	**$20,000,000.00**

Green = Local data from Grand Strand Water & Sewer Authority
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

The following charts show the existing structures that are in the storm surge hazard area in each jurisdiction as mapped.

STORM SURGE HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS Types and Numbers of Buildings in Hazard Area				
Town of Atlantic Beach				
Type of Structure Occupancy Class	**Number of Structures**			**Value of Structures**
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	138	35	25.36%	$ 2,677,202.42
Commercial	47	*	-	-
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	*	-	-	-
Government	1	0	-	-
Education	-	-	-	-
TOTAL	**186**	**35**	**18.91%**	**$2,690,779.54**

Green = Local data from the Town of Atlantic Beach
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

STORM SURGE HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Briarcliffe Acres

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	246	75	30.48%	$ 18,859,874.11
Commercial	-	-	-	-
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	1	0	-	-
Government	1	0	-	-
Education	1	0	-	-
TOTAL	**249**	**75**	**30.12%**	**$ 18,865,390.92**

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

STORM SURGE HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Horry County

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in County	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	258,069	14,688	5.69%	$ 1,881,136,224
Commercial	10,786	376	-	-
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	310	6	1.93%	$766,770.25
Government	60	0	-	-
Education	45	-	-	-
TOTAL	**270,135**	**15,070**	**7.62%**	**$ 1,881,902,994.25**

Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

STORM SURGE HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Surfside Beach

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	3,964	2,412	60.84%	$360,361,367.20
Commercial	350	260	74.28%	$38,829,149.78
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	4	2	50%	$298,833.21
Government	1	0	0	0
Education	-	-	-	-
TOTAL	**4319**	**2,674**	**61.91%**	**$399,541,385.44**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

STORM SURGE HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

HORRY ELECTRIC COOPERATIVE, INC.

Type of Structure Occupancy Class	Number of Substation			Value of Substations
	Total Substations	Substations in Hazard Area	% in Hazard Area	Potential Dollar Losses
Substations	22	1	4.5%	2.8 million
TOTAL	**22**	**1**	**4.5%**	**2.8 million**

Green = Local data from Horry Electric Cooperative, Inc.
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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STORM SURGE HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS Types and Numbers of Buildings in Hazard Area				
GRAND STRAND WATER & SEWER AUTHORITY				
Type of Structure Occupancy Class	**Number of Plants**			**Value of Plants**
	Total Substations	Substations in Hazard Area	% in Hazard Area	Potential Dollar Losses
Substations	62	3	4.83%	$343,000,000.00
TOTAL	**62**	**3**	**4.83%**	**$343,000,000.00**

Green = Local data from Grand Strand Water & Sewer Authority
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

The following charts show the existing structures that are in the tsunami hazard area in each jurisdiction as mapped.

TSUNAMI HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS Types and Numbers of Buildings in Hazard Area				
Town of Atlantic Beach				
Type of Structure Occupancy Class	**Number of Structures**			**Value of Structures**
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	138	*	-	*
Commercial	47	*	-	-
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	*	*	-	-
Government	1	*	-	-
Education	-	-	-	-
TOTAL	**186**	*****	*****	*****

Green = Local data from the Town of Atlantic Beach
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

TSUNAMI HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS
Types and Numbers of Buildings in Hazard Area

Town of Briarcliffe Acres

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	246	1	.4%	$ 247,504.91
Commercial	-	-	-	-
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	1	0	0	0
Government	1	0	0	0
Education	1	0	0	0
TOTAL	**249**	**1**	**.4%**	**$250,536.40**

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

TSUNAMI HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS
Types and Numbers of Buildings in Hazard Area

Horry County

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in County	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	190,814	800	.4%	$ 97,834,015.44
Commercial	9,001	*	*	*
Industrial	*	*	*	*
Agricultural	*	*	*	*
Religious	310	5	1.61%	$639,637.36
Government	60	0	-	-
Education	45	0	0	-
TOTAL	**200,229**	**806**	**.4%**	**$98,473,652.80**

Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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TSUNAMI HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Surfside Beach

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	3964	213	5.37%	$ 31,807,043.75
Commercial	350	260	74.28%	$ 38,829,149.78
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	4	2	50%	$298,800.94
Government	1	0	-	-
Education	-	-	-	-
TOTAL	**4319**	**475**	**10.99%**	**$70,924,888.16**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

TSUNAMI HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

HORRY ELECTRIC COOPERATIVE, INC.

Type of Structure Occupancy Class	Number of Substation			Value of Substations
	Total Substations	Substations in Hazard Area	% in Hazard Area	Potential Dollar Losses
Substations	22	0	-	-
TOTAL	**22**	**0**	**-**	**-**

Green = Local data from Horry Electric Cooperative, Inc.
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

TSUNAMI HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS Types and Numbers of Buildings in Hazard Area				
GRAND STRAND WATER & SEWER AUTHORITY				
Type of Structure Occupancy Class	Number of Plants			Value of Plants
	Total Substations	Substations in Hazard Area	% in Hazard Area	Potential Dollar Losses
Substations	62	0	-	-
TOTAL	**62**	**0**	**-**	**-**

Green = Local data from Grand Strand Water & Sewer Authority
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

The following charts summarizes the total of types and numbers of existing buildings and infrastructure in the drought, earthquakes, hurricanes, tornados, severe thunderstorms/lightning/hail, winter storms, HAZMAT, terrorism, and cyber terrorism hazard areas.

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS Types and Numbers of Buildings in Hazard Area				
Town of Atlantic Beach				
Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	138	138	100%	$ 10,556,791.86
Commercial	47	47	100%	$3,594,346.44
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	*	-	-	-
Government	1	1	100%	$76,497.25
Education	-	-	-	-
TOTAL	**186**	**186**	**100%**	$14,229,400.00

Green = Local data from the Town Atlantic Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Aynor

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	282	282	100%	$26,851,975.80
Commercial	81	81	100%	$7,710,149.55
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	5	5	100%	$473,648.91
Government	3	3	100%	$285,660.15
Education	3	3	100%	$52,206,804.25
TOTAL	**371**	**371**	**100%**	**$87,528,328.66**

Green = Local data from the Town of Aynor
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Briarcliffe Acres

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	246	246	100%	$61,876,227.39
Commercial	0	0	0	0
Industrial	0	0	0	0
Agricultural	0	0	0	0
Religious	1	1	100%	$42,937.63
Government	1	1	100%	$42,937.63
Education	1	1	100%	$42,937.63
TOTAL	**249**	**249**	**100%**	**$56,319,700.00**

- Religious Structure encompasses educational component; thus potential dollar loss

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

City of Conway

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in City	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	7474	849	100%	$1,189,653,546
Commercial	761	90	100%	$526,066,421
Industrial	*	*	*	*
Agricultural	*	*	*	*
Religious	32	*	100%	*
Government	3	*	100%	*
Education	42	9	100%	$169,975,000
TOTAL	**8312**	**948**	**100%**	**$1,885,694,967**

Green = Local data from the City of Conway
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Horry County

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in County	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	190,814	190,814	100%	$24,458,503,859.55
Commercial	9,001	9,001	100%	$1,153,630,376.17
Industrial	*	*	*	*
Agricultural	*	*	*	*
Religious	310	310	100%	$39,729,028.30
Government	60	60	100%	$7,689,158.19
Education	45	45	100%	$794,144,232.14
TOTAL	**200,230**	**200,230**	**100%**	**$26,453,696,654.35**

Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

City of Loris

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in City	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	962	962	100%	$102,761,894.87
Commercial	224	224	100%	$23,922,043.11
Industrial	*	*	*	*
Agricultural	*	*	*	*
Religious	14	14	100%	$1,491,912.37
Government	1	1	100%	$106,813.21
Education	4	4	100%	$54,719,805.52
TOTAL	**1205**	**1205**	**100%**	**$183,002,469.08**

Green = Local data from the City of Loris
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS

Types and Numbers of Buildings in Hazard Area

Town of Surfside Beach

Type of Structure Occupancy Class	Number of Structures			Value of Structures
	Structures in Town	Structures in Hazard Area	% in Hazard Area	Potential Dollar Losses
Residential	3,964	3,964	100%	$592,309,939.52
Commercial	350	350	100%	$52,274,030.40
Industrial	-	-	-	-
Agricultural	-	-	-	-
Religious	4	4	100%	$597,601.88
Government	1	1	100%	$149,400.47
Education	-	-	-	-
TOTAL	**4319**	**4319**	**100%**	**$645,358,400.00**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation
* Information not available/Not Complete

WORKING DRAFT

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS Types and Numbers of Buildings in Hazard Area				
HORRY ELECTRIC COOPERATIVE, INC.				
Type of Structure Occupancy Class	Number of Substation			Value of Substations
	Total Substations	Substations in Hazard Area	% in Hazard Area	Potential Dollar Losses
Substations	22	22	100%	$28,955,965.40
TOTAL	**22**	**22**	**100%**	**$28,955,965.40**

Green = Local data from Horry Electric Cooperative, Inc.
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

HAZARD AREA – TYPES AND NUMBERS OF BUILDINGS Types and Numbers of Buildings in Hazard Area				
GRAND STRAND WATER & SEWER AUTHORITY				
Type of Structure Occupancy Class	Number of Plants			Value of Plants
	Total Substations	Substations in Hazard Area	% in Hazard Area	Potential Dollar Losses
Substations	62	62	100%	$1,166,250,000.00
TOTAL	**62**	**62**	**100%**	**$1,166,250,000.00**

Green = Local data from Grand Strand Water & Sewer Authority
Blue = Local Data from Horry County
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

The following charts summarize the types and numbers of existing critical facilities in the identified hazard areas. The intended use of these charts is to guide community leaders and planners in determining which areas of Horry County and participating jurisdictions are most vulnerable. The following charts detail vulnerability for Horry County and the participating jurisdictions critical facilities.

Ownership issues were one of the limitations for this dataset. Throughout Horry County there are many County government structures that are located in local municipalities. Although these structures are located within a municipality they are still the responsibility of the County. For purposes of this plan structures will not be categorized by ownership but rather by locality. Additionally, for this purposes of this dataset the information provided by each jurisdiction was used first where available. If no information was available directly from the responsible

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jurisdiction then the information was obtain from the Horry County Land Records where it was available. As in the previous data set the replacement value for structures in the hazard zones were determined using the value of the structures on the parcels alone. Not using the value of the land as most land will remain intact and useable after an event has occurred.

CRITICAL FACILITIES TOWN OF ATLANTIC BEACH					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	-	-	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	$450,000.00	-	-
2	Schools	-	-	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**1**	**$450,000.00**	**0**	**$0**

Green = Local data from the Town of Atlantic Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES TOWN OF AYNOR					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	1	$387,500.00	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	*	-	-
2	Schools	3	$52,206,804.25	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
TOTAL		**5**	**$52,594,304.25**	**0**	**$0**

Green = Local data from the Town of Aynor
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES TOWN OF BRIARCLIFFE ACRES					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	-	-	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	$178,000.00	-	-
2	Schools	1	*	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**2**	**$178,000.00**	**0**	**$0**

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES CITY OF CONWAY					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	2	$29,023,518	1	
1	Communications/ Towers		-	-	-
2	Hospitals	1	$67,085,480	0	-
2	Fire/Rescue/Police	1	$169,880 (police)	0	-
		3	$773,321 (fire/rescue)		
2	Major Roads & Bridges		*		-
2	Gov't Buildings	15	$4,983,723	2	-
2	Schools	9	$17,999,152	2	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	1	$10,528	1	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**32**	**$120,045,602**	**6**	**$***

Green = Local data from the City of Conway
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES HORRY COUNTY					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	4	$328,000.00	-	-
2	Hospitals	1	18,840,600.00	-	-
2	Police	-	-	-	-
2	Fire/Rescue	32	$13,264,900.00*	-	-
2	Major Roads & Bridges	303	*	146	*
2	Gov't Buildings	7	$9,314,200.00	-	-
2	Schools	45	$794,144,232.14	-	-
3	Electrical Utilities	1	$460,020,000.00	-	-
3	Airports	2	$2,954,900.00*	-	-
3	Waste Water Facilities	20	$538,000,000.00		
3	Potable Water Facilities	39	$333,250,000.00		
	TOTAL	**454**	**$2,170,116,832.1***	**146**	*****

Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES CITY OF LORIS					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	1	$9,749,200.00	-	-
2	Police	1	$1,900,000.00*	-	-
2	Fire/Rescue	1	*	-	-
2	Major Roads & Bridges	2	$346,000,000.00	-	-
2	Gov't Buildings	1	*	-	-
2	Schools	4	$54,719,805.52	-	
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	1	$125,000,000.00	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**11**	**$537,369,005.52**	**0**	**$0**

Green = Local data from the City of Loris
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES CITY OF MYRTLE BEACH					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	5	$7,141,400.00	-	-
2	Hospitals	1	$39,498,400.00	-	-
2	Police	-	-	-	-
2	Fire/Rescue	2	$107,100.00*	-	-
2	Major Roads & Bridges	9	*	2	*
2	Gov't Buildings	1	$956,000.00	-	-
2	Schools	6	$134,463,815.98	-	-
3	Electrical Utilities	1	*	-	-
3	Airports	1	$40,025,700	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**26**	**$225,065,125.98**	**2**	*****

Green = Local data from the City of Myrtle Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool

* Information not available/Not Complete (Municipality currently has their own All-Hazards Mitigation Plan, but it does not cover all the special purpose jurisdictions within in jurisdictional boundaries)

CRITICAL FACILITIES CITY OF NORTH MYRTLE BEACH					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	1	-	-	-
1	Communications/ Towers	1	$1.1 million	-	-
2	Hospitals (North Strand-stand-alone ER)	1	-	-	-
2	Police	1	-	-	-
2	Fire/Rescue	5	107,100.00*	1 (station 2 Cherry Grove)	-
2	Major Roads & Bridges	5	-	-	-
2	Gov't Buildings	35	-	-	-
2	Schools	1	$19,625,357.00	0	-
3	Electrical Utilities	4 (Santee Cooper)	-	-	-
3	Airports	1	$10,483,400.00*	0	-
3	Waste Water Facilities	101 (99 lift station, 2 tx plants)	-	0	-
3	Potable Water Facilities	6 Water Towers 2 Storage Tanks 2 Pump Stations	-	2 1 1	-
	TOTAL	**166**	**$31,315,857**	**5**	*****

Green = Local data from the City of North Myrtle Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete (Municipality currently has their own All-Hazards Mitigation Plan, but it does not cover all the special purpose jurisdictions within in jurisdictional boundaries)

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CRITICAL FACILITIES TOWN OF SURFSIDE BEACH					
Priority Level	**Type of Facility**	**Flood Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	1	$849,000.00	-	-
2	Fire/Rescue	1	$2,800,000.00	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	7	$2,737,000.00	-	-
2	Schools	-	-	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Sewage Treatment Plants	-	-	-	-
3	Water Treatment & Pump Stations	-	-	-	-
	TOTAL:	**9**	**$6,386,000.00**	**0**	**$0**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES TOWN OF ATLANTIC BEACH					
Priority Level	**Type of Facility**	**Storm Surge Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	-	-	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	$450,000.00	-	-
2	Schools	-	-	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**1**	**$450,000.00**	**0**	**$0**

Green = Local data from the Town of Atlantic Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES TOWN OF BRIARCLIFFE ACRES					
Priority Level	**Type of Facility**	**Storm Surge Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	-	-	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	$178,000.00	1	178,000.00
2	Schools	1	*	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**2**	**$178,000.00**	**1**	**$178,000.00**

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES HORRY COUNTY					
Priority Level	**Type of Facility**	**Storm Surge Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	4	$328,000.00	-	-
2	Hospitals	1	18,840,600.00	-	-
2	Police	-	-	-	-
2	Fire/Rescue	32	$13,264,900.00*	-	-
2	Major Roads & Bridges	303	*	6	*
2	Gov't Buildings	7	$9,314,200.00	-	-
2	Schools	45	$794,144,232.14	16	$350,902,139.95
3	Electrical Utilities	1	$460,020,000.00	-	-
3	Airports	2	$2,954,900.00*	-	-
3	Waste Water Facilities	20	$538,000,000.00	2	$208,000,000.00
3	Potable Water Facilities	39	$333,250,000.00	1	$135,000,000.00
	TOTAL	**454**	**$2,170,116,832.1***	26	**$693,902,139.95**

Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES CITY OF MYRTLE BEACH					
Priority Level	**Type of Facility**	**Storm Surge Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	5	$7,141,400.00	5	$7,141,400.00
2	Hospitals	1	$39,498,400.00	1	$39,498,400.00-
2	Police	-	-	-	-
2	Fire/Rescue	2	$107,100.00*	2	$107,100.00*
2	Major Roads & Bridges	9	*	4	*
2	Gov't Buildings	1	$956,000.00	-	-
2	Schools	6	$134,463,815.98	6	$134,463,815.98
3	Electrical Utilities	1	*	-	-
3	Airports	1	$40,025,700	1	$40,025,700
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**26**	**$168,194,593.00**	**27**	**$221,236,415.98***

Green = Local data from the City of Myrtle Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool

* Information not available/Not Complete (Municipality currently has their own All-Hazards Mitigation Plan, but it does not cover all the special purpose jurisdictions within in jurisdictional boundaries)

CRITICAL FACILITIES CITY OF NORTH MYRTLE BEACH					
Priority Level	**Type of Facility**	**Storm Surge Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	1	-	-	-
1	Communications/ Towers	1	$1.1 million	-	-
2	Hospitals	1	-	-	-
2	Police	1	-	-	-
2	Fire/Rescue	5	107,100.00*	-	-
2	Major Roads & Bridges	5	*	5	*
2	Gov't Buildings	35	-	-	-
2	Schools	1	$19,625,357.00	1	-
3	Electrical Utilities	-	-	-	-
3	Airports	1	$10,483,400.00	-	-
3	Waste Water Facilities	101 (99 lift stations, 2 treatment plants)	-	-	-
3	Potable Water Facilities	6 Water Towers 2 Storage Tanks 2 Pump Stations	-	2 1 1	-
	TOTAL	**166**	**$31,315,857**	**5**	**$ ***

Green = Local data from the City of North Myrtle Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete (Municipality currently has their own All-Hazards Mitigation Plan, but it does not cover all the special purpose jurisdictions within in jurisdictional boundaries)

WORK

CRITICAL FACILITIES TOWN OF SURFSIDE BEACH					
Priority Level	**Type of Facility**	**Storm Surge Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	0	0
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	1	$849,000.00	1	$849,000.00
2	Fire/Rescue	1	$2,800,000.00	1	$2,800,000.00
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	7	$2,737,000.00	7	$2,737,000.00
2	Schools	-	-	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**9**	**$6,386,000.00**	**9**	**$6,386,000.00**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete Information not available

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CRITICAL FACILITIES TOWN OF ATLANTIC BEACH					
Priority Level	**Type of Facility**	**Tsunami Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	-	-	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	$450,000.00	*	*
2	Schools	-	-	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**1**	**$450,000.00**	*****	*****

Green = Local data from the Town of Atlantic Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES TOWN OF BRIARCLIFFE ACRES					
Priority Level	**Type of Facility**	**Tsunami Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	-	-	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	$178,000.00	-	-
2	Schools	1	*	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**2**	**$178,000.00**	**0**	**$0**

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES HORRY COUNTY					
Priority Level	**Type of Facility**	**Tsunami Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	4	$328,000.00	-	-
2	Hospitals	1	18,840,600.00	-	-
2	Police	-	-	-	-
2	Fire/Rescue	32	$13,264,900.00*	-	
2	Major Roads & Bridges	303	*	*	*
2	Gov't Buildings	7	$9,314,200.00	-	-
2	Schools	45	$794,144,232.14	-	-
3	Electrical Utilities	1	$460,020,000.00	-	-
3	Airports	2	$2,954,900.00*	-	-
3	Waste Water Facilities	20	$538,000,000.00	-	-
3	Potable Water Facilities	39	$333,250,000.00	-	-
	TOTAL	**454**	**$2,170,116,832.1***	**0**	**$0**

Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES CITY OF MYRTLE BEACH					
Priority Level	**Type of Facility**	**Tsunami Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	5	$7,141,400.00	-	-
2	Hospitals	1	$39,498,400.00	-	-
2	Police	-	-	-	-
2	Fire/Rescue	2	$107,100.00*	-	-
2	Major Roads & Bridges	9	*	-	-
2	Gov't Buildings	1	$956,000.00	-	-
2	Schools	6	$134,463,815.98	-	-
3	Electrical Utilities	1	*	-	-
3	Airports	1	$40,025,700	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**26**	**$225,172,225.98***	**0**	**$0**

Green = Local data from the City of Myrtle Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES CITY OF NORTH MYRTLE BEACH					
Priority Level	**Type of Facility**	**Tsunami Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	1	-	-	-
1	Communications/ Towers	1	$1.1 million	-	-
2	Hospitals	1	-	-	-
2	Police	1	-	-	-
2	Fire/Rescue	5	107,100.00*	1	-
2	Major Roads & Bridges	5	*	-	-
2	Gov't Buildings	35	-	-	-
2	Schools	1	$19,625,357.00	-	-
3	Electrical Utilities	4	-	-	-
3	Airports	1	$10,483,400.00	-	-
3	Waste Water Facilities	101 (99 lift stations, 2 tx plants)	-	-	-
3	Potable Water Facilities	6 Water Towers 2 Storage Tanks 2 Pump Stations	-	2 1 1	-
	TOTAL	**166**	**$31,315,857***	**5**	**$**

Green = Local data from the City of North Myrtle Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool

* Information not available/Not Complete (Municipality currently has their own All-Hazards Mitigation Plan, but it does not cover all the special purpose jurisdictions within in jurisdictional boundaries)

WORK

CRITICAL FACILITIES TOWN OF SURFSIDE BEACH					
Priority Level	**Type of Facility**	**Tsunami Vulnerability**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	1	$849,000.00	-	-
2	Fire/Rescue	1	$2,800,000.00	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	7	$2,737,000.00	-	-
2	Schools	-	-	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**9**	**$6,386,000.00**	**0**	**$0**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

The above charts defined the vulnerability to flood, storm surge and tsunami hazards. For the other identified hazards, which are found in section 3.1 Identifying hazards, task force members were not able to identify specific hazard areas. Those hazards are tornados, severe thunderstorms, winter storms, earthquake, lightning, drought, and extreme heat. These hazards and their occurrences are not limited to any particular area based on past historical events and documentation as provided in the hazard profiles. These particular hazards can affect any jurisdiction at any time making every asset of each jurisdiction vulnerable. Therefore, hazard specific maps were only created for flood, hurricane, storm surge, and tsunami hazard areas. Information for the wildfire hazard area is still not available in the specific manner which is required for this portion of the plan. However, the information availability will continue to be monitored and will be included in updates to this plan if available.

The following chart summarizes what structures are vulnerable to hurricanes, tornados, severe thunderstorms, winter storms, earthquake, lightning, drought and extreme heat.

CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**TOWN OF ATLANTIC BEACH**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	1	$450,000.00	1	$450,000.00
2	Fire/Rescue	-	-	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	-	-	-	-
2	Schools	-	-	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**1**	**$450,000.00**	**1**	**$450,000.00**

Green = Local data from the Town of Aynor
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**TOWN OF AYNOR**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	1	$387,500.00	1	$387,500.00
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	*	1	*
2	Schools	3	$52,206,804.25	3	$52,206,804.25
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**5**	**$52,594,304.25***	**5**	**$52,594,304.25***

Green = Local data from the Town of Aynor
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**TOWN OF BRIARCLIFFE ACRES**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	-	-	-	-
2	Fire/Rescue	-	-	-	-
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	1	$178,000.00	1	$178,000.00
2	Schools	1	*	1	*
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**2**	**$178,000.00**	**2**	**$178,000.00***

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**CITY OF CONWAY**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	2	$29,023,518	2	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	1	$67,085,480	1	-
2	Fire/Rescue	1	$169,880	4	-
		3	$773,321		
2	Major Roads & Bridges		*		-
2	Gov't Buildings	15	$4,983,723	3	-
2	Schools	9	$17,999,152	13	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	1	$10,528	1	-
3	Potable Water Facilities	-	-	-	-
TOTAL		**32**	**$120,045,602**	**32**	**-**

Green = Local data from the City of Conway
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**HORRY COUNTY**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	4	$328,000.00	4	$328,000.00
2	Hospitals	1	18,840,600.00	1	18,840,600.00
2	Police	-	-	-	-
2	Fire/Rescue	32	$13,264,900.00*	32	$13,264,900.00*
2	Major Roads & Bridges	303	*	303	*
2	Gov't Buildings	7	$9,314,200.00	7	$9,314,200.00
2	Schools	45	$794,144,232.14	45	$794,144,232.14
3	Electrical Utilities	1	$460,020,000.00	1	$460,020,000.00
3	Airports	2	$2,954,900.00*	2	$2,954,900.00*
3	Waste Water Facilities	20	$538,000,000.00	20	$538,000,000.00
3	Potable Water Facilities	39	$333,250,000.00	39	$333,250,000.00
	TOTAL	**454**	**$2,170,116,832.1***	**454**	**$2,170,116,832.1***

Blue = Local Data from Horry County
Purple = United States Census Bureau
Red = Horry County School District
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORK

CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**CITY OF LORIS**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	1	$9,749,200.00	1	$9,749,200.00
2	Police	1	1,900,000.00*	1	$1,900,000.00*
2	Fire/Rescue	1	*	1	*
2	Major Roads & Bridges	2	$346,000,000.00	2	$346,000,000.00
2	Gov't Buildings	1	*	1	*
2	Schools	4	$54,719,805.52	4	$54,719,805.52
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	1	125,000,000.00	1	125,000,000.00
3	Potable Water Facilities	-	-	-	-
	TOTAL	**11**	**$537,369,005.52***	**11**	**$537,369,005.52***

Green = Local data from the City of Loris
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**CITY OF MYRTLE BEACH**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	5	$7,141,400.00	5	$7,141,400.00
2	Hospitals	1	$39,498,400.00	1	$39,498,400.00
2	Police	-	-	-	-
2	Fire/Rescue	2	$107,100.00*	2	$107,100.00*
2	Major Roads & Bridges	9	*	9	*
2	Gov't Buildings	1	$956,000.00	1	$956,000.00
2	Schools	6	$134,463,815.98	6	$134,463,815.98
3	Electrical Utilities	1	*	1	*
3	Airports	1	$40,025,700.00	1	$40,025,700.00
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL	**27**	**$222,192,415.98***	**27**	**$222,192,415.98***

Green = Local data from the City of Myrtle Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete (Municipality currently has their own All-Hazards Mitigation Plan, but it does not cover all the special purpose jurisdictions within in jurisdictional boundaries)

WORK

CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**CITY OF NORTH MYRTLE BEACH**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	1	-	-	-
1	Communications/ Towers	1	1.1 million	-	-
2	Hospitals	1	-	-	-
2	Police	1	-	-	-
2	Fire/Rescue	5	$107,00.00	1	-
2	Major Roads & Bridges	5	*	-	*
2	Gov't Buildings	35	-	-	-
2	Schools	1	$19,625,357.00	-	-
3	Electrical Utilities	4	-	-	-
3	Airports	1	$10,483,400.00	-	-
3	Waste Water Facilities	101 (99 lift stations, 2 tx plants)	-	-	-
3	Potable Water Facilities	6 Water Towers 2 Storage Tanks 2 Pump Stations	-	2 1 1	-
	TOTAL	**166**	**$31,315,857**	**5**	**$***

Green = Local data from the City of North Myrtle Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete (Municipality currently has their own All-Hazards Mitigation Plan, but it does not cover all the special purpose jurisdictions within in jurisdictional boundaries)

WORK

CRITICAL FACILITIES Hurricanes, Tornados, Thunderstorms, Winter Storms, Earthquake, Lightning, Drought, and Extreme Heat					
Priority Level	**Type of Facility**	**TOWN OF SURFSIDE BEACH**			
		# Of existing buildings	Current replacement value	# in hazard area	Replacement value for structures in hazard zone
1	EOC	-	-	-	-
1	Communications/ Towers	-	-	-	-
2	Hospitals	-	-	-	-
2	Police	1	$849,000.00	1	$849,000.00
2	Fire/Rescue	1	$2,800,000.00	1	$1,500,000.00
2	Major Roads & Bridges	-	-	-	-
2	Gov't Buildings	7	$2,737,000.00	7	$1,574,100.00
2	Schools	-	-	-	-
3	Electrical Utilities	-	-	-	-
3	Airports	-	-	-	-
3	Waste Water Facilities	-	-	-	-
3	Potable Water Facilities	-	-	-	-
	TOTAL:	**9**	**$6,386,000.00**	**9**	**$6,386,000.00**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation ool
* Information not available/Not Complete

WORK

The following charts summarize by category the types and numbers of future buildings that may become vulnerable to future hazards. Task Force Members used these projections for each jurisdiction to guide the development of policies and strategies for mitigation actions as defined in this plan. Projections vary by jurisdiction and were updated as necessary during the rewrite process.

FUTURE TYPES AND NUMBERS OF BUILDINGS
TOWN OF AYNOR

Type of Development	Current Conditions			Projected Future Conditions		
	# of Existing Private Buildings	Current Value	Current # of People	# of Private Buildings	Projected Value	Projected # of People
Residential	252	$30,737,200.00	587	300	$35,880,000.00	800
Commercial	61	$6,683,900.00		*	*	
Industrial	-	-		-	-	
Agriculture	-	-		-	-	
Educational	3	$52,206,804.25		-	-	
Religion/Non-profit	5	$11,291,200.00		*	*	
HAZMAT Storage Facilities	9	*		*	*	
TOTAL	**330**	**$100,919,104.25**	**587**	**300**	**$35,880,000.00**	**800**

Green = Local data from the Town of Aynor
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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FUTURE TYPES AND NUMBERS OF BUILDINGS TOWN OF BRIARCLIFFE ACRES						
	Current Conditions			Projected Future Conditions		
Type of Development	# of Existing Private Buildings	Current Value	Current # of People	# of Private Buildings	Projected Value	Projected # of People
Residential	239	$55,000,000.00	507	246	$2,100,000.00	521
Commercial	-	-		-	-	
Industrial	-	-		-	-	
Agriculture	-	-		-	-	
Educational	1	*		-	-	
Religion/Non-profit	1	$1,309,900.00		-	-	
HAZMAT Storage Facilities	-	-		-	-	
Government	1	$10,000.00		2	$162,000	
TOTAL	**242**	**$56,309,000.00**	**587**	**248**	**$57,262,000.00**	**521**

Data Set is limited to information contained in the Town of Briarcliffe Acres Comprehensive Plan (1999).

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FUTURE TYPES AND NUMBERS OF BUILDINGS CITY OF CONWAY						
	Current Conditions			Projected Future Conditions		
Type of Development	# of Existing Private Buildings	Current Value	Current # of People	# of Private Buildings	Projected Value	Projected # of People
Residential	4,783	$449,123,700.00	13,293	*	*	*
Commercial	*	*		*	*	
Industrial	*	*		*	*	
Agriculture	*	*		*	*	
Educational	13	$205,466,163.16		0	$352,640,005.00	
Religion/Non-profit	47	$9,081,340.00		*	*	
HAZMAT Storage Facilities	3	*		*	*	
TOTAL	**4,846**	**$663,671,203.16**	**13,293**	*	**$352,640,005.00**	*

Green = Local data from the City of Conway
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FUTURE TYPES AND NUMBERS OF BUILDINGS HORRY COUNTY						
Type of Development	Current Conditions			Projected Future Conditions		
	# of Existing Private Buildings	Current Value	Current # of People	# of Private Buildings	Projected Value	Projected # of People (2020)
Residential	122,085	$14,613,574,500.00	217,608	126,113	*	308,301
Commercial	*	*		*	*	
Industrial	*	*		*	*	
Agriculture	*	*		*	*	
Educational	45	$794,144,232.14		*	*	
Religion/Non-profit	310	$47,780,000.00		*	*	
HazMat Storage Facilities	391	*		*	*	
TOTAL	**122,831**	**$841,924,232.14**	**217,608**	**126,113**	*****	**308,301**

Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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FUTURE TYPES AND NUMBERS OF BUILDINGS CITY OF LORIS						
Type of Development	Current Conditions			Projected Future Conditions		
	# of Existing Private Buildings	Current Value	Current # of People	# of Private Buildings	Projected Value	Projected # of People
Residential	4,304	$348,624,000.00	3,399	*	*	*
Commercial	*	*		*	*	
Industrial	*	*		*	*	
Agriculture	*	*		*	*	
Educational	4	$54,719,805.52		0	$26,948,554.00	
Religion/Non-profit	14	$3,544,800.00		*	*	
HAZMAT Storage Facilities	23	*		*	*	
TOTAL	**4,345**	**$406,888,605.52**	**3,399**	**0**	**$26,948,554.00**	*****

Green = Local data from the City of Loris
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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FUTURE TYPES AND NUMBERS OF BUILDINGS TOWN OF SURFSIDE BEACH						
Type of Development	Current Conditions			Projected Future Conditions		
	# of Existing Private Buildings	Current Value	Current # of People	# of Private Buildings	Projected Value	Projected # of People (2030)
Residential	3,758	$845,550,000.00	4,425	4600	$1,035,000,000.00	7,525
Commercial	408	*		460	*	
Industrial	-	-		-	-	
Agriculture	-	-		-	-	
Educational	-	-		-	-	
Religion/Non-profit	4	$2,959,300.00		*	*	
HAZMAT Storage Facilities	11	*		*	*	
TOTAL	**4,181**	**$848,509,300.00**	**4,425**	**5,060**	**$1,035,000,000.00**	**7,525**

Green = Local data from the Town of Surfside Beach
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* Information not available/Not Complete

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FUTURE TYPES AND NUMBERS OF BUILDINGS HORRY ELECTRIC COOPERATIVE, INC.				
	Current Conditions		Projected Future Conditions	
Type of Development	# of Existing Substations	Current Value	# of Future Substations	Projected Value
Substations	22	$28,955,965.40	6	$10,800,000.00
TOTAL	**22**	**$28,955,965.40**	**6**	**$10,800,000.00**

Green = Local data from Horry Electric Cooperative, Inc.
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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The following charts summarize the types and numbers of future critical facilities that may become vulnerable to future hazards. Task Force Members used these projections for each jurisdiction to guide the development of policies and strategies for mitigation actions as defined in this plan. Projections vary by jurisdiction and were updated as necessary during the rewrite process.

FUTURE CRITICAL FACILITES
TOWN OF AYNOR

Priority Level	Type of Facility	Current Conditions			Projected Future Conditions		
		# of Existing Buildings /Facilities	Current Replacement Value	# of People	Projected # of Buildings /Facilities	Projected Replacement Value	Projected # of People
1	EOC	-	-	-	-	-	-
1	Communications	-	-	-	-	-	-
2	Hospitals	-	-	-	-	-	-
2	Police	1	$1,000,000.00	6	-	-	-
2	Fire/Medical Stations	2	$1,500,000.00	*	-	-	-
2	Major Bridges & Roads	-	-	-	-	-	-
2	Gov't Buildings	-	-	-	-	-	-
2	Schools	3	$52,206,804.25	1941	-	-	-
3	Electrical Utilities	-	-	-	-	-	-
3	Waste Water Facilities	-	-	-	-	-	-
3	Airports	-	-	-	-	-	-
3	Potable Water Facilities	-	-	-	-	-	-
	TOTAL	**6**	**$54,706,804.25**	**1947**	**-**	**-**	**-**

Green = Local data from the Town of Aynor
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

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FUTURE CRITICAL FACILITES TOWN OF BRAIRCLIFFE ACRES							
		Current Conditions			Projected Future Conditions		
Priority Level	Type of Facility	# of Existing Buildings/ Facilities	Current Replacement Value	# of People	Projected # of Buildings /Facilities	Projected Replacement Value	Projected # of People
1	EOC	-	-	-	-	-	-
1	Communications	-	-	-	-	-	-
2	Hospitals	-	-	-	-	-	-
2	Police	-	-	-	-	-	-
2	Fire/Medical Stations	-	-	-	-	-	-
2	Major Bridges & Roads	-	-	-	-	-	-
2	Gov't Buildings	1	$10,000.00	1	-	-	-
2	Shelters/Schools	1	*	9	-	-	-
3	Electrical Utilities	-	-	-	-	-	-
3	Waste Water Facilities	-	-	-	-	-	-
3	Airports	-	-	-	-	-	-
3	Potable Water Facilities	-	-	-	-	-	-
	TOTAL	**2**	**$10,000.00**	**10**	**0**	**0**	**0**

Green = Local data from the Town of Briarcliffe Acres
Blue = Local Data from Horry County
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Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FUTURE CRITICAL FACILITES CITY OF CONWAY							
		Current Conditions			Projected Future Conditions		
Priority Level	Type of Facility	# of Existing Buildings/ Facilities	Current Replacement Value	# of People	Projected # of Buildings /Facilities	Projected Replacement Value	Projected # of People
1	EOC	2	$4,517,100.00	*	-	-	-
1	Communications	-	-	-	-	-	-
2	Hospitals	1	$39,792,000.00	*	-	-	-
2	Fire/Medical Stations/Police	3	$5,500,000.00	47	-	-	-
2	Major Bridges & Roads	15	*	-	-	-	-
2	Gov't Buildings	1	$9,314,200.00	-	-	-	-
2	Schools	13	$205,466,163.16	11,109	-	-	-
3	Electrical Utilities	-	-	-	-	-	-
3	Waste Water Facilities	2	$170,000,000.00	-	-	-	-
3	Airports	-	-	-	-	-	-
3	Potable Water Facilities	-	-	-	-	-	-
	TOTAL	**38**	**$434,559,463.16**	**11,156**	**0**	**-**	**0**

Green = Local data from the City of Conway
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FUTURE CRITICAL FACILITES
HORRY COUNTY

Priority Level	Type of Facility	Current Conditions			Projected Future Conditions		
		# of Existing Buildings/ Facilities	Current Replacement Value	# of People	Projected # of Buildings/ Facilities	Projected Replacement Value	Projected # of People
1	EOC	-	-	-	-	-	-
1	Communications	4	$328,000.00	-	*	*	*
2	Hospitals	-	-	-	*	*	*
2	Police	-	-	-	3	$900,000.00	100
2	Fire/Medical Stations	37	$27,750,000.00		*	*	*
2	Major Bridges & Roads	303	*	-	-	-	-
2	Gov't Buildings	7	$9,314,200.00	85	*	*	*
2	Schools	45	$794,144,232.14	26,312	-	-	
3	Electrical Utilities	1	$460,020,000.00	*	-	-	-
3	Waste Water Facilities	20	$538,000,000.00	-	-	-	-
3	Airports	2	$1,315,200.00	-	*	*	-
3	Potable Water Facilities	39	$333,250,000.00	-	*	*	-
	TOTAL	**458**	**$1,292,871,632.14**	**26,397**	**3**	**900,000.00**	**100**

Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FUTURE CRITICAL FACILITES CITY OF LORIS							
		Current Conditions			Projected Future Conditions		
Priority Level	Type of Facility	# of Existing Buildings/ Facilities	Current Replacement Value	# of People	Projected # of Buildings/ Facilities	Projected Replacement Value	Projected # of People
1	EOC	-	-	-	-	-	-
1	Communications	-	-	-	-	-	-
2	Hospitals	1	$9,000,000.00	*	-	-	-
2	Police	1	*	20	-	-	-
2	Fire/Medical Stations	1	$750,000.00	20	-	-	-
2	Major Bridges & Roads	2	$346,000,000.00	n/a	*	*	*
2	Gov't Buildings	-	-	-	-	-	-
2	Schools	4	$54,719,805.52	1,698	-	-	-
3	Electrical Utilities	-	-	-	-	-	-
3	Waste Water Facilities	1	125,000,000.00	-	-	-	-
3	Airports	-	-	-	-	-	-
3	Potable Water Facilities	-	-	-	-	-	-
	TOTAL	**10**	**$535,469,805.52**	**1,738**	**-**	**-**	**-**

Green = Local data from the City of Loris
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

FUTURE CRITICAL FACILITES TOWN OF SURFSIDE BEACH							
		Current Conditions			Projected Future Conditions		
Priority Level	Type of Facility	# of Existing Buildings/ Facilities	Current Replacement Value	# of People	Projected # of Buildings/ Facilities	Projected Replacement Value	Projected # of People
1	EOC	-	-	-	-	-	-
1	Communications	-	-	-	-	-	-
2	Hospitals	-	-	-	-	-	-
2	Police	1	$849,000.00	19	0	$849,000.00	20
2	Fire/Medical Stations	1	$2,800,000.00	35	0	$2,800,000.00	40
2	Major Bridges & Roads	-	-	-	-	-	-
2	Gov't Buildings	7	$2,737,000.00	43	0	$2,737,000.00	45
2	Schools	-	-	-	-	-	-
3	Electrical Utilities	-	-	-	-	-	-
3	Waste Water Facilities	-	-	-	-	-	-
3	Airports	-	-	-	-	-	-
3	Potable Water Facilities	-	-	-	-	-	-
	TOTAL	**9**	**$6,386,000.00**	**107**	**0**	**$6,386,000.00**	**117**

Green = Local data from the Town of Surfside Beach
Blue = Local Data from Horry County
Red = Horry County School District
Purple = United States Census Bureau
Orange = Federal Emergency Management Agency – HAZUS MH1 Loss Estimation Tool
* Information not available/Not Complete

WORKING DRAFT

3.4 DEVELOPMENT TRENDS

The Mitigation Planning Task Force has updated and reviewed this section of the plan. Additional information was discussed and added to this section to incorporate the recommendation and suggestions made during the last mitigation plan review. During the 2020 review and update, Horry County Planning and Zoning provided additional data as illustrated through maps and graphs at the end of this section.

Horry County and participating jurisdictions have been subject to a large influx of residential development. Horry County grew 36.9% in population between 2000 and 2010 compared to the state's growth of 13.2%. Continued future growth is expected. As documented in Horry County Imagine 2040, the 2040 projections show that the Myrtle Beach County Census Division (CCD) and Floyds CCD will grow the least, both with 55.7% increases (or roughly 59,060 and 1,788 people respectively). The Conway CCD will grow the second least with a 63.2% increase (or roughly 29,049 people). The highest population growth rates are projected to be Conway East CCD with 130.5% (or roughly 104,734 more people) and the Longs CCD with a 367.6% increase (or roughly 27,908 or more people). By far, the greatest number of residents will live in Conway East and Myrtle Beach CCDs, accounting for roughly 60% of the population by 2040. Essential Facilities and Services are expected to grow to meet the amount of anticipated growth. The western part of Horry County, the City of Loris, and the Town of Aynor have a more sporadic population growth and even at times a loss in population as seen in more recent years; therefore essential facilities and services will not grow at the same extent in these areas.

The Mitigation Task Force discussed at length the effects of development trends and land use on the potential hazard events that could affect the area. A continued increase in population over time would obviously slow the response time and recovery time for any significant natural or man-made hazard that might affect the area. An increase in population will cause evacuation times to be longer and also cause more strain on the services provided by each jurisdiction. Also increases in population will create a need for continued education of the public regarding the hazards faced in this region. Another aspect also mentioned during the Mitigation Task Force's discussion was the idea of being cognizant of the type of population changes we are encountering. The group agreed it was important to tailor education and messages to the public that were relevant and understandable for the possibility of an influx in divergent cultures.

Also discussed by the Mitigation Task Force was the affects that a growing population has on the environment. As always, with a growing population comes industry and planned development. It was discussed, that any increase in development brings the increase in impermeable surface area which affect storm water runoff. The storm water runoff has many different natural hazards, several of which occur in this region. The hazards discussed were thunderstorms, floods, ice storms, hurricanes or any tropical system. The task force noted that continued efforts by the jurisdictional storm water, planning and zoning departments would be imperative to ensure the ability to mitigate any negative effects that potential population growth could impose in the jurisdictions.

The special purpose districts like Horry Electric, Horry Telephone, Grand Strand Water and Bucksport Water System also discussed the manmade hazards that could affect them with an increase in population growth. The discussion involved power outages caused by over strain on the electrical grids or even by cyber-attacks. Likewise the water system providers discussed the potential for drought and how additional population would be a strain on those services as well.

The Mitigation Task Force agreed that continual monitoring by each the group of each jurisdiction and special purpose district would be critical to ensure the services and response would be available before, during and after an event.

Population in South Carolina, Horry County, and participating jurisdictions from 1970-2010 actual figures

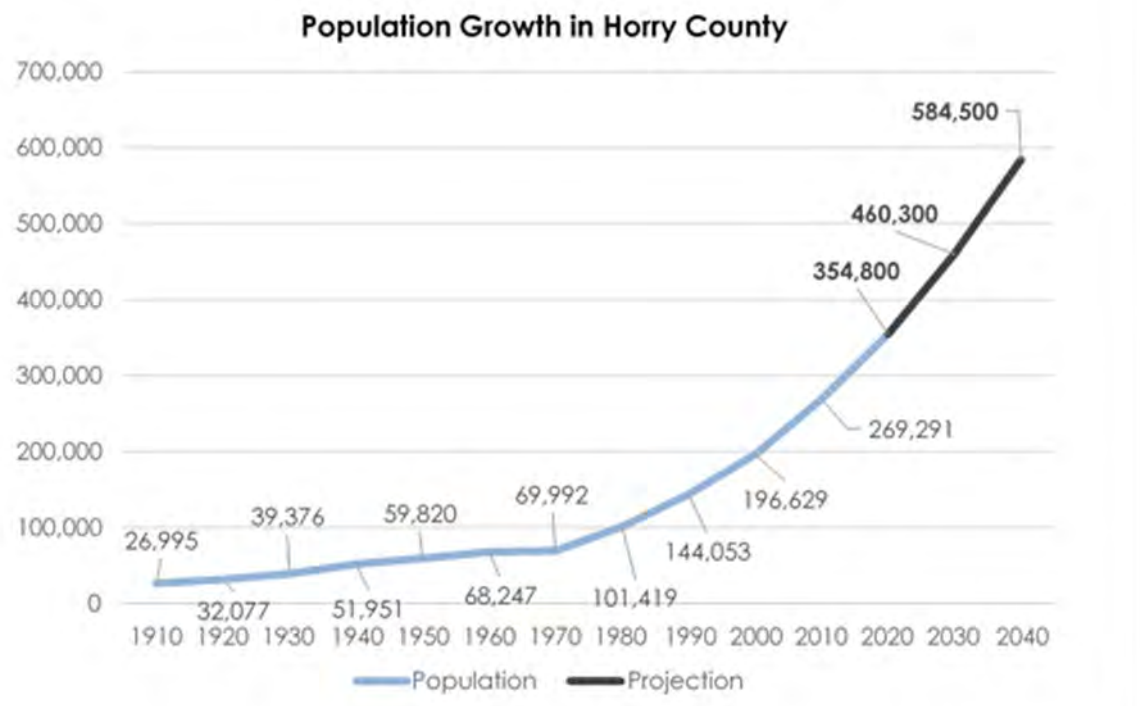
	South Carolina	Horry County	Atlantic Beach	Aynor	Briarcliffe Acres	Conway	Loris	Surfside Beach
Year	Population							
1970	2,590,516	69,992	*	536	152	8,510	1,741	1,329
% Change	20.5%	44.9%	*	20%	122.4%	20.3%	26%	89.8%
1980	3,121,820	101,419	*	643	338	10,240	2,193	2,522
% Change	11.7%	42%	*	-27%	63.3%	-4.1%	-5.7%	52.5%
1990	3,468,703	144,053	*	470	552	9, 819	2,067	3,845
% Change	15.1%	36.5%	*	24.9%	-14.9%	20%	.6%	15.1%
2000	4,012,012	196,629	351	587	470	11,788	2,079	4,425
% Change	13.2%	36.9%	-4.84%	-4.5%	-2.7%	45%	15.2%	-13.28%
2010	4,625,364	269,291	334	560	457	17,103	2,396	3,837
*Information Not Available								
Source: US Census Bureau and Horry County Comprehensive Plan, 2008 US Census Bureau, SC Budget and Control Board, Office of Statistics and Research								

Municipal Population Growth 1980-2015

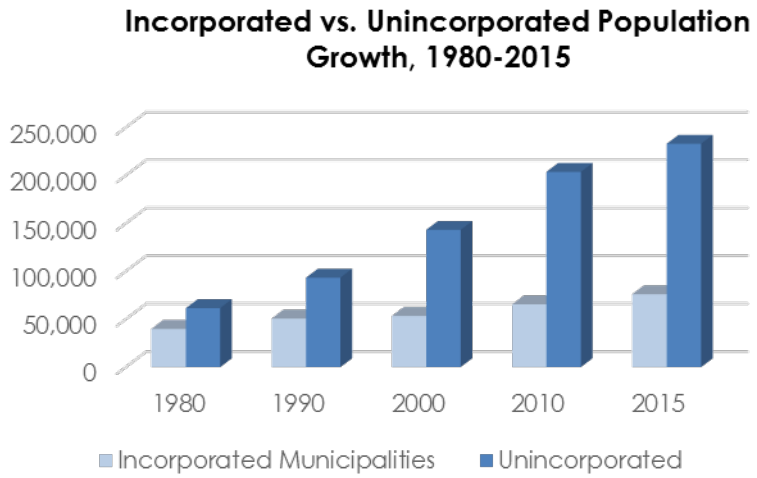
Municipalities	1980	1990	2000	2010	2015
Atlantic Beach	289	446	351	334	384
Aynor	643	470	587	560	667
Briarcliffe Acres	338	552	470	457	529
Conway	10,240	9,819	11,788	17,103	21,053
Loris	2,193	2,067	2,079	2,396	2,591
Myrtle Beach	19,702	24,848	22,759	27,109	31,035
North Myrtle Beach	3,960	8,636	10,974	13,752	15,579
Surfside	2,522	3,845	4,425	3,837	4,280
Municipal Population	**39,887**	**50,683**	**53,433**	**65,548**	**76,118**
Unincorporated Population	**61,532**	**93,370**	**143,196**	**203,743**	**233,081**
Total Population	**101,419**	**144,053**	**196,629**	**269,291**	**309,199**
Municipal Population as Percent of County	**39.30%**	**35.20%**	**27.20%**	**24.30%**	**24.40%**

Source: US Census 1980-2010; American Community Survey 2015 Estimates (ID #B01003)

							Anticipated Growth After 2015					
County Census Division	1970	1980	1990	2000	2010	2015	2020	2030	2040	Total Increase	% Growth	Annual Growth Rate
Aynor	5,634	7,190	6,844	8,908	10,052	11,285	13,000	16,000	19,000	7,715	68.4%	2.73%
Conway	18,665	23,868	26,881	33,575	39,715	45,951	50,300	61,000	75,000	29,049	63.2%	2.53%
Conway East	3,419	8,546	17,552	31,639	65,364	80,266	100,000	143,000	185,000	104,734	130.5%	5.22%
Floyds Crossroads	3,420	3,771	2,964	3,195	3,301	3,212	3,500	4,300	5,000	1,788	55.7%	2.23%
Little River	4,960	8,781	17,988	26,315	33,652	38,638	43,000	55,000	72,000	33,362	86.3%	3.45%
Longs	2,788	3,299	3,371	5,625	6,645	7,592	13,000	22,000	35,500	27,908	367.6%	14.70%
Loris	9,895	11,137	11,290	13,785	15,878	16,315	19,000	23,000	28,000	11,685	71.6%	2.86%
Myrtle Beach	21,211	34,827	58,410	73,587	94,684	105,940	113,000	136,000	165,000	59,060	55.7%	2.23%
Total	69,992	101,419	145,300	196,629	269,291	309,199	354,800	460,300	584,500	275,301	89.0%	3.56%

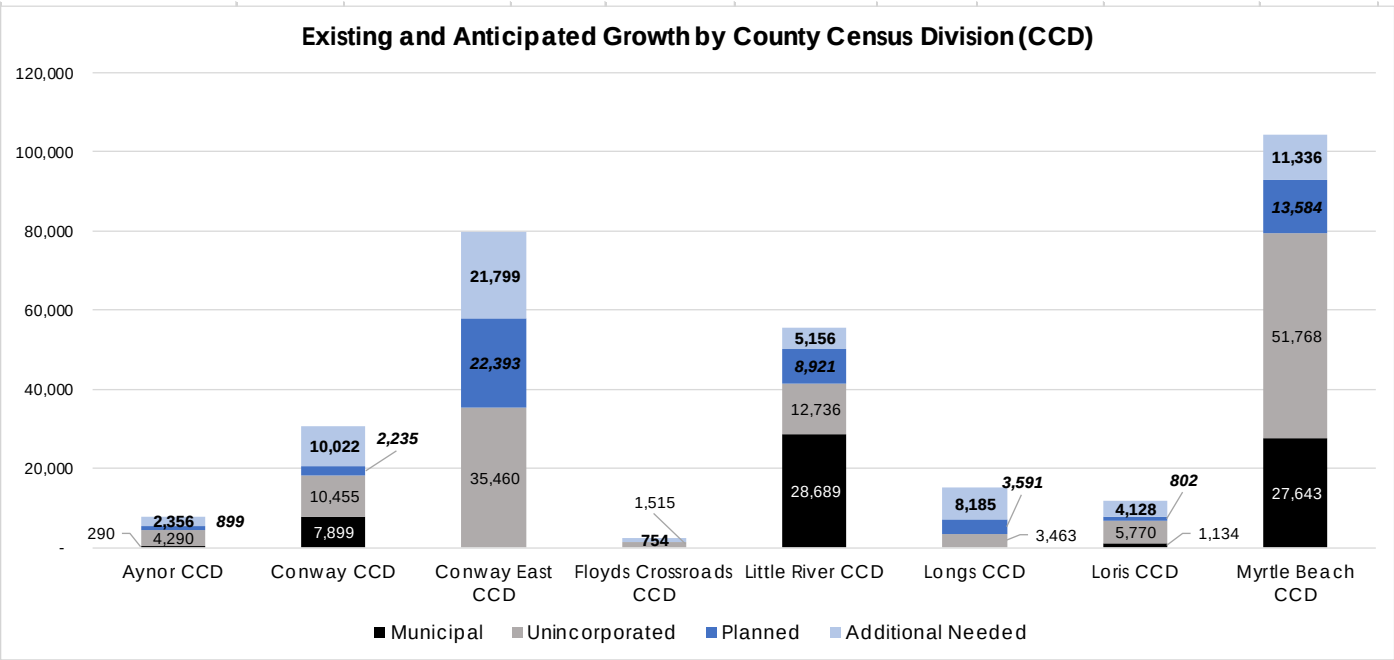


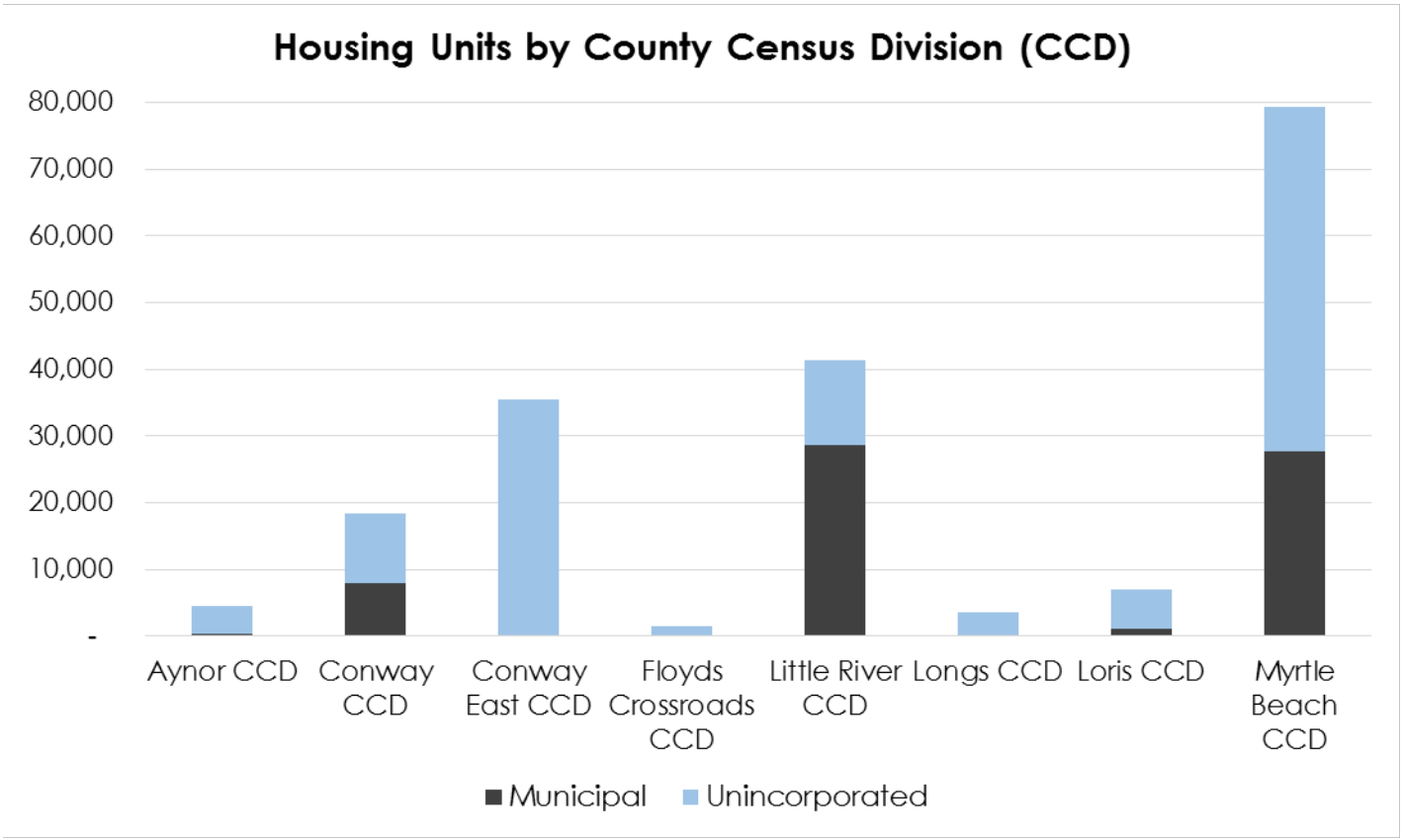
Sources: Historic population – Census. Projections - SC Revenue and Fiscal Affairs Office and Research, and Horry County Planning & Zoning.



	Existing Housing Units			Preapproved (Not Constructed)				
Census Area	Municipal	Unincorporated	Total	Multi-Family	Single-Family	Planned	Additional Needed	Total Projected
Aynor CCD	290	4,290	4,580	-	899	899	2,356	7,835
Conway CCD	7,899	10,455	18,354	-	2,235	2,235	10,022	30,611
Conway East CCD	-	35,460	35,460	9,008	13,385	22,393	21,799	79,652
Floyds Crossroads CCD	-	1,515	1,515	-	-	-	754	2,269
Little River CCD	28,689	12,736	41,425	3,886	5,035	8,921	5,156	55,502
Longs CCD	-	3,463	3,463	995	2,596	3,591	8,185	15,239
Loris CCD	1,134	5,770	6,904	-	802	802	4,128	11,834
Myrtle Beach CCD	27,643	51,768	79,411	6,473	7,111	13,584	11,336	104,331
	65,655	**125,457**	**191,112**	**20,362**	**32,063**	**52,425**	**63,736**	**307,273**

Profile of General Demographic Charcteristics: 2010						
	Total Pop	Male	Female	White	Non-White	Perc Non-White
Horry County	289,650	140,770	148,880	238,961	50,689	17.5%
Atlantic Beach	334	159	177	34	317	70.6%
Aynor	560	262	298	457	103	18.3%
Briarcliffe Acres	457	210	247	450	7	1.5%
Conway	19,300	11,271	8,029	11,502	7,798	40.4%
Loris	2,396	1,056	1,340	1,292	1,104	46.0%
Surfside Beach	3,837	1,842	1,995	3,688	149	3.8%
US Census Data						





Preapproved - these numbers are based upon property that is already zoned for a major residential subdivision. Additional Units Needed was determined by the projected population and the County's average household size (2.37 pp/household). Additional Units Needed does not account for seasonal housing needs/projections.

General Demographics for North Myrtle Beach (information provided by North Myrtle Beach)

Total Population 2018	Male	Female	White	Non-White
16,548	8,140	8,408	14,903	1,823

Population Change for North Myrtle Beach (information provided by North Myrtle Beach)

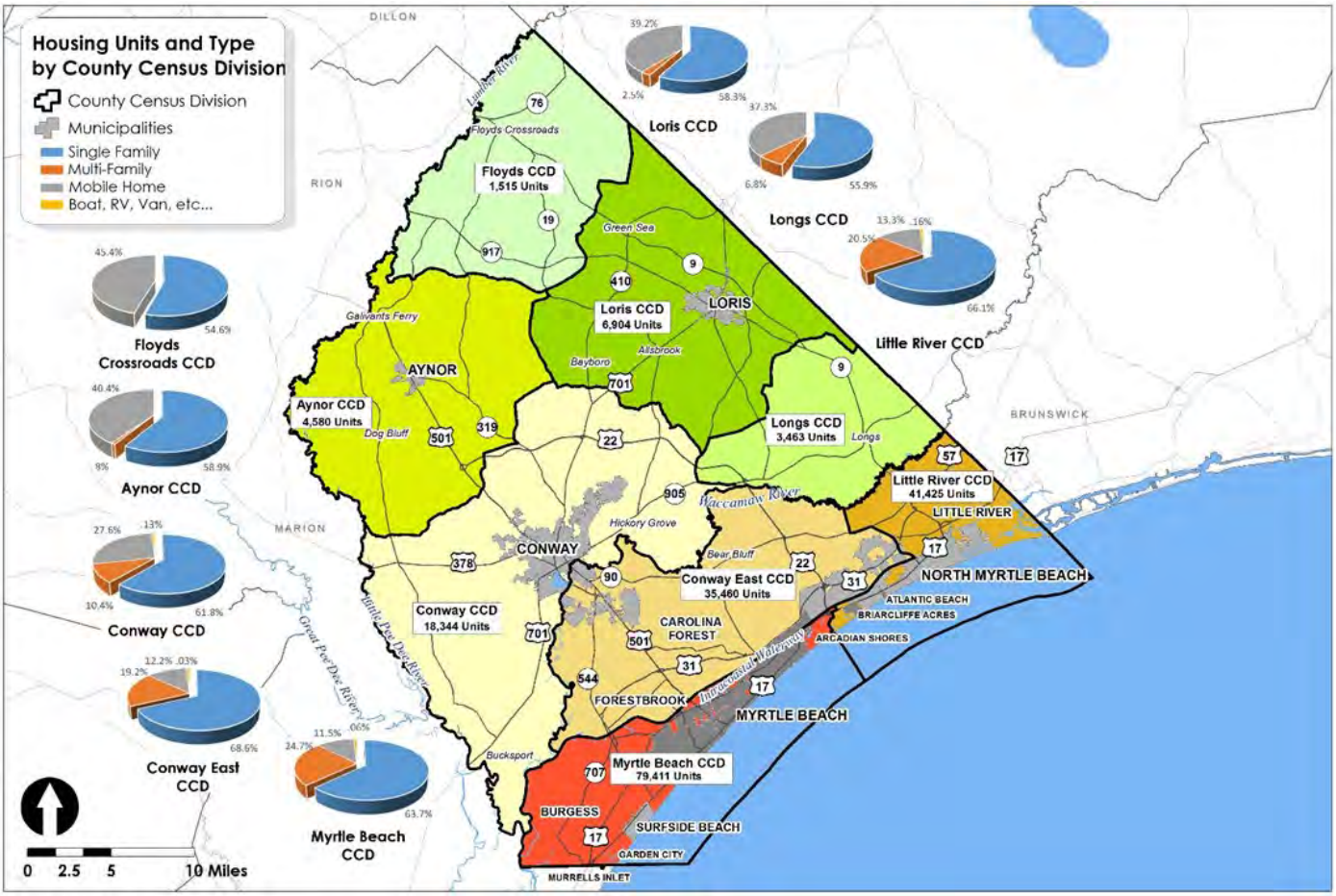
1970	1980	1990	2000	2010
1967	2379	8636	10,974	13,752

The below data provided by Horry County Planning & Zoning:

Seasonal Population for Grand Strand

Fiscal Year	Tourists
2010	14,000,000
2011	14,500,000
2012	15,200,000
2013	16,100,000
2014	17,200,000
2015	17,900,000
2016	17,900,000
2017	18,600,000
2018	19,600,000

	Occupied		Vacant				Total Units
	Owner Occupied	Renter Occupied	Seasonal	For Rent	For Sale	Other	
Aynor CCD	3,005	956	231	78	5	305	4,580
Conway CCD	11,386	4,856	551	244	216	1,091	18,344
Conway East CCD	18,319	8,494	4,650	2,488	513	996	35,460
Floyds Crossroads CCD	857	376	55	48	-	179	1,515
Little River CCD	12,202	5,015	13,981	8,715	215	1,297	41,425
Longs CCD	2,161	514	360	76	77	275	3,463
Loris CCD	4,558	1,377	250	154	212	353	6,904
Myrtle Beach CCD	29,478	15,184	22,005	9,698	825	2,221	79,411
Total	81,966	36,772	42,083	21,501	2,063	6,717	191,102
Percent Total Housing Units	42.9%	19.2%	22.0%	11.3%	1.1%	3.5%	100%



Land Use

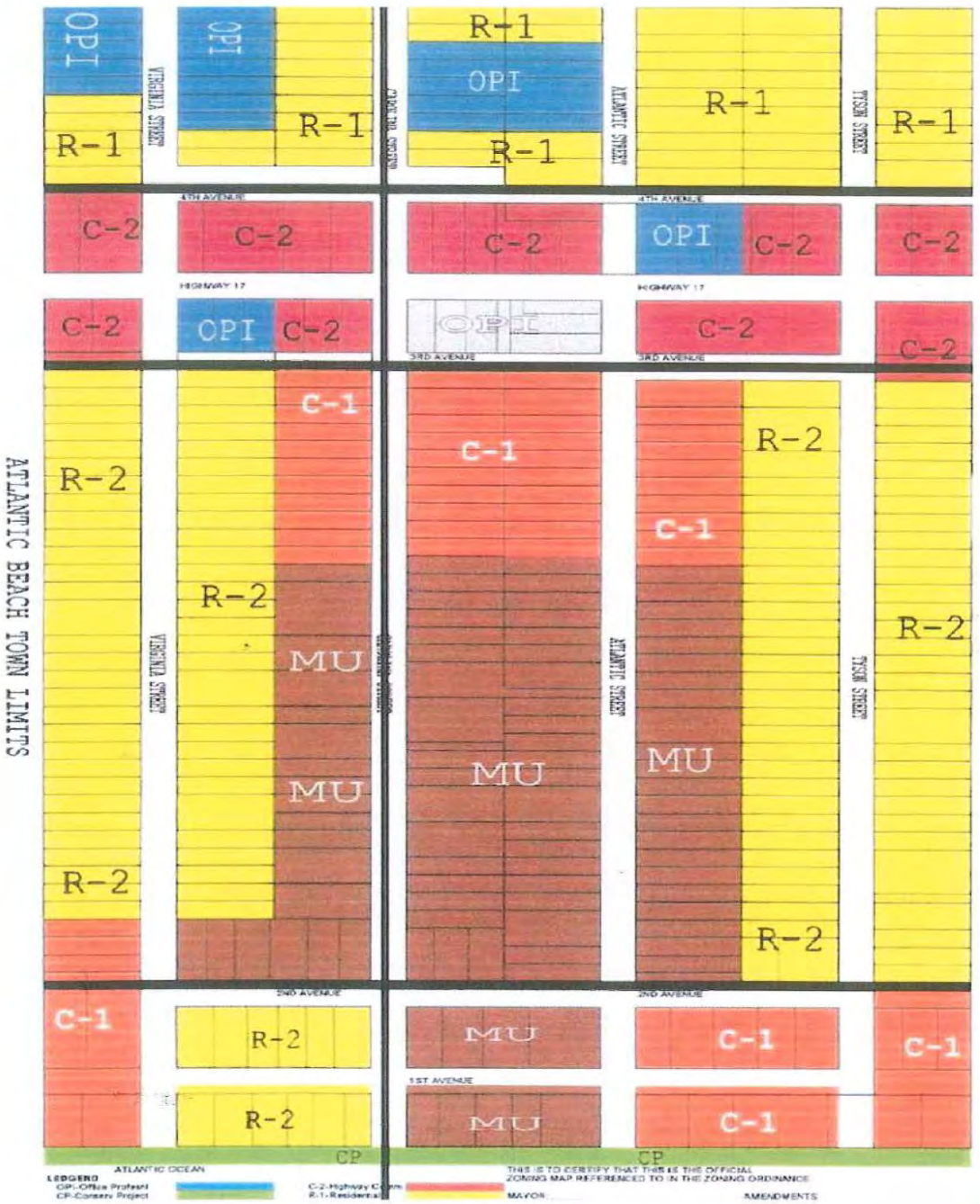
The area comprising unincorporated Horry County is primarily rural. Much of the development pattern in the remainder of the county is a mixture of land uses – residential, business/commercial, and public and civic – located in the eastern portion of the county in proximity to the more urbanized Grand Strand and major transportation arterials. This land use mixture provides limited spatial separation for dissimilar land uses, resulting in conflicting and contentious land use issues; excluding municipalities and associated outgrowth from unincorporated areas, agricultural or forestland use.

The Intracoastal Waterway has been extremely influential in the general development patterns of unincorporated Horry County, essentially creating a physical barrier to the more urbanized Grand Strand. As such, a large portion of Horry County's unincorporated growth occurs in proximity to the Intracoastal Waterway (Carolina Forest Area), along the transportation corridors that provide access across the waterway to the Grand Strand. This is especially apparent where major transportation arterials converge. This area has been the locations of several of the Wildfires that occur in Horry County and as such measure are being taken to educate the public and implement programs to try and mitigate some of the risk.

The southeast Census Divisions – Conway East, Conway, and Myrtle Beach – are the most developed unincorporated area of the county. Just east of Conway, a variety of land uses occupy the northern wedge of State Road 544 and U. S. Road 501. Growth continues along State Road 544 and State Road 707 into the unincorporated areas of Bucksport and Socastee growth area is at the northeastern edge of the county in the Little River Census Division. Development extends out State Road 9 towards I-95 and along State Road 90 toward the North Carolina line. The western municipalities – Aynor and Loris – also provide growth opportunities, generally along westward transportation corridors leading out from the Grand Strand.

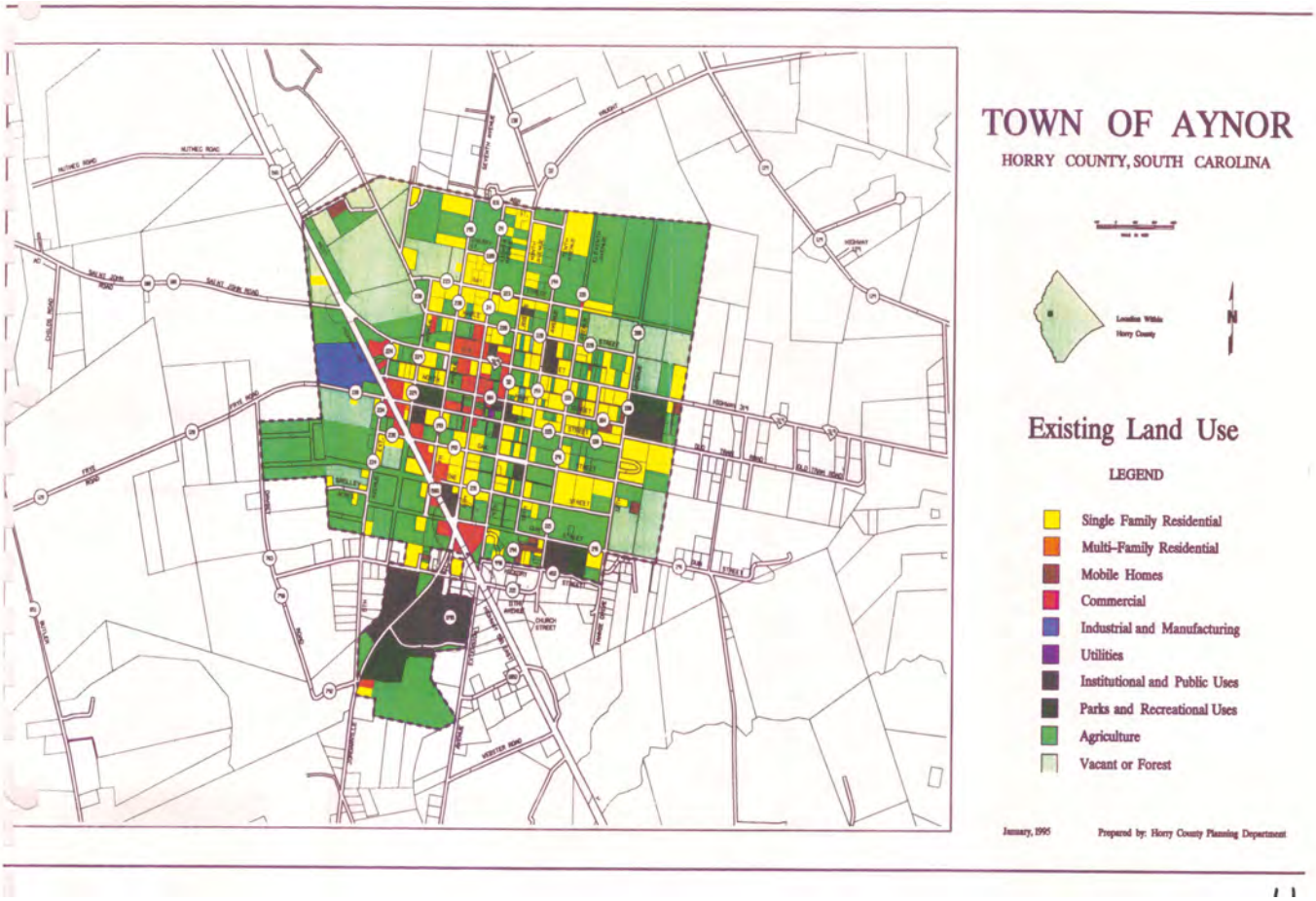
Market demand, population growth, economic development, community infrastructure, and the environmental suitability of land are the major factors affecting Horry County and participating jurisdictions future land use needs. Also influential are adopted land use goals and implementation strategies. Whether qualitative or quantitative, these factors will play a significant role in guiding the intensity, location, and timing of future growth in Horry County and participating jurisdictions.

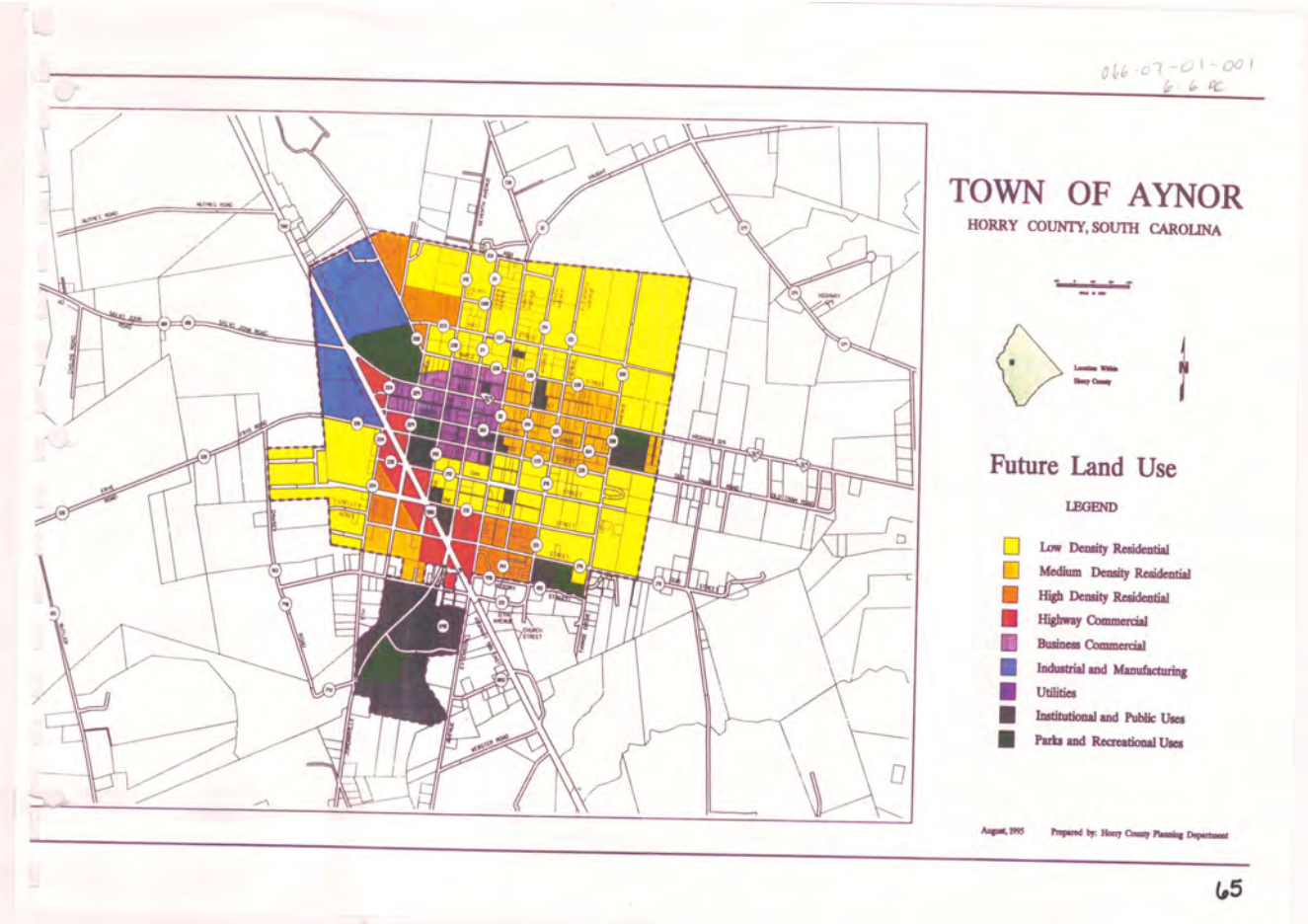
Town of Atlantic Beach Zoning Map



Map Provided by the Town of Atlantic Beach

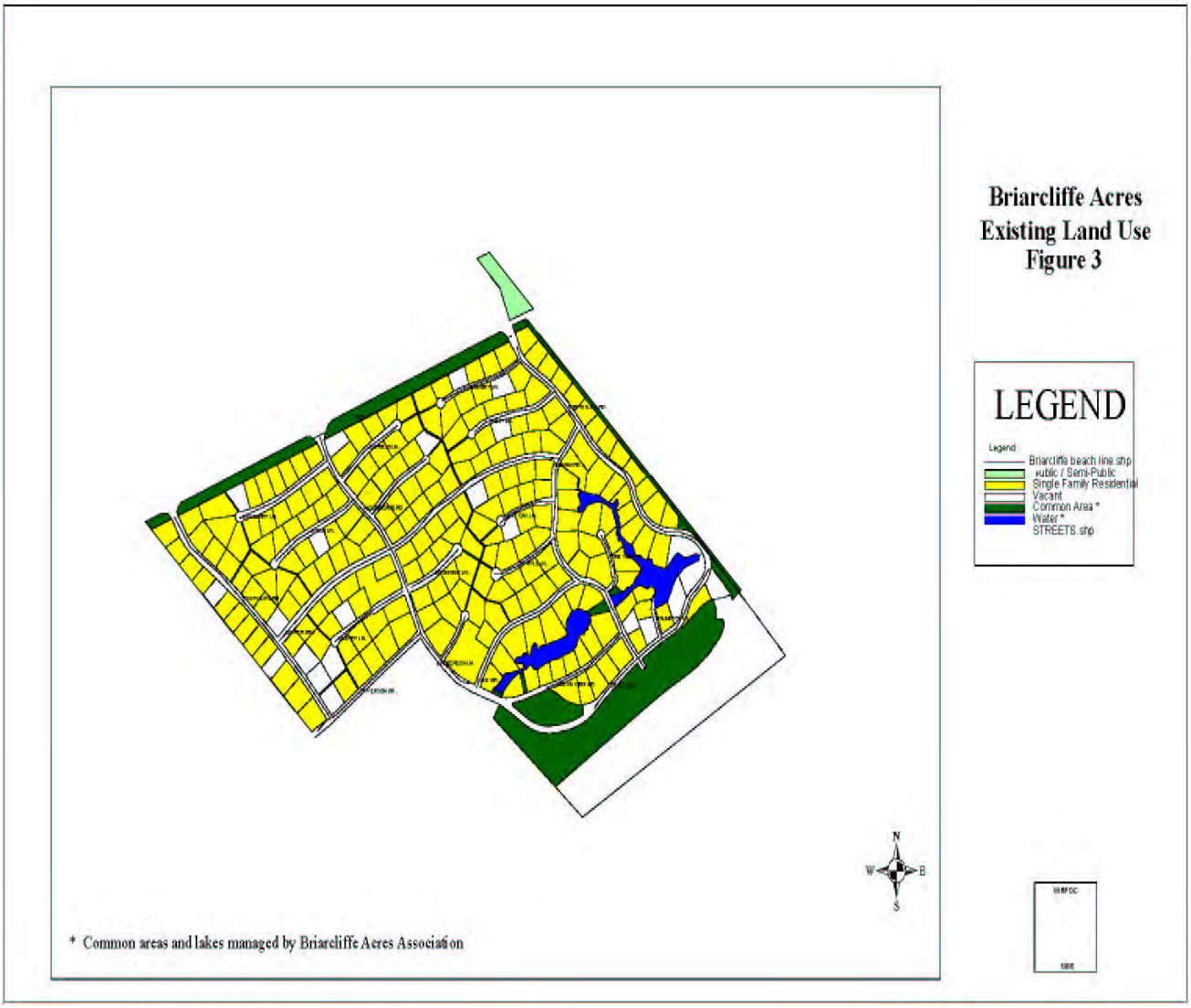
Map Provided by the Town of Aynor



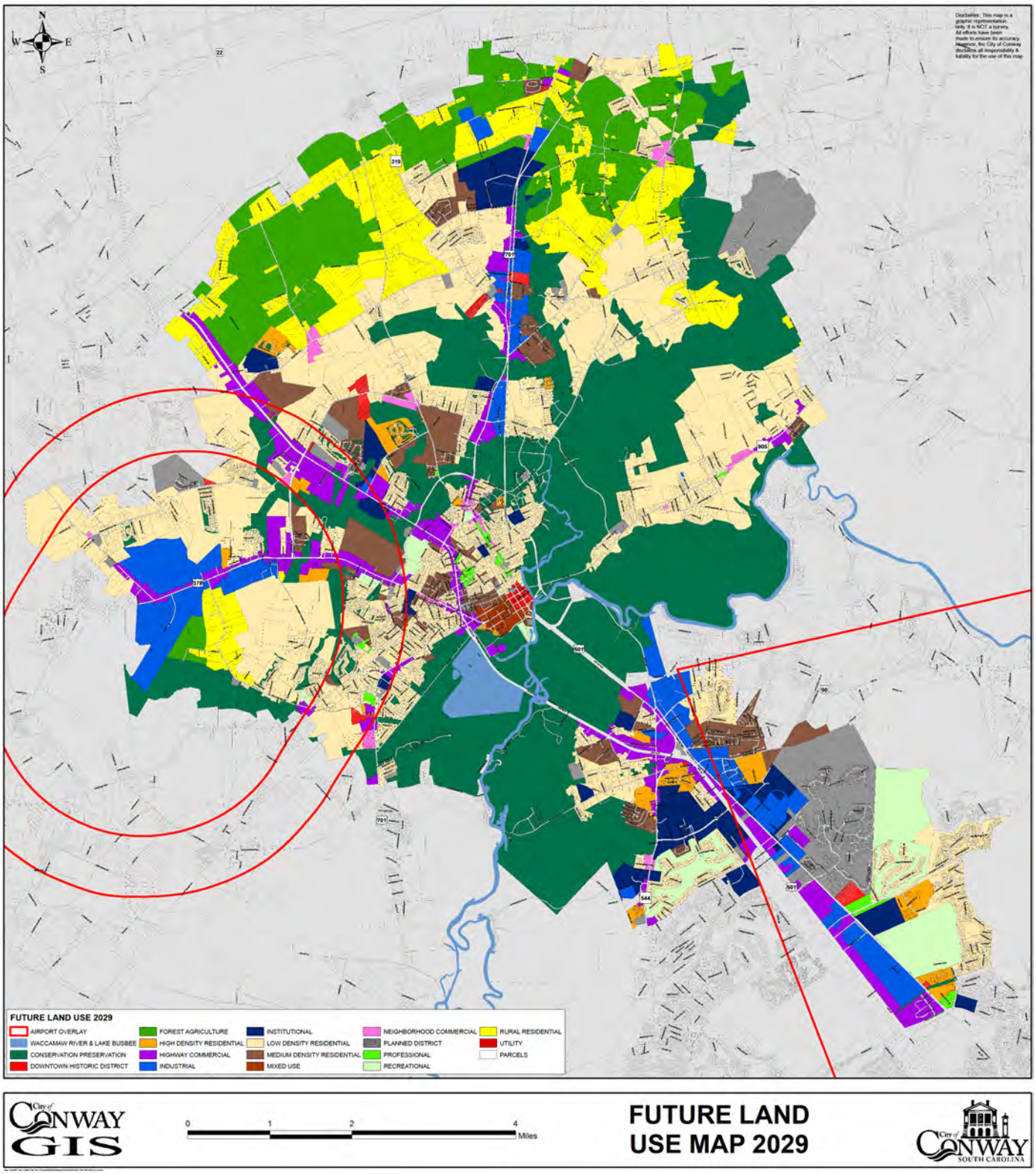


Map Provided by the Town of Aynor

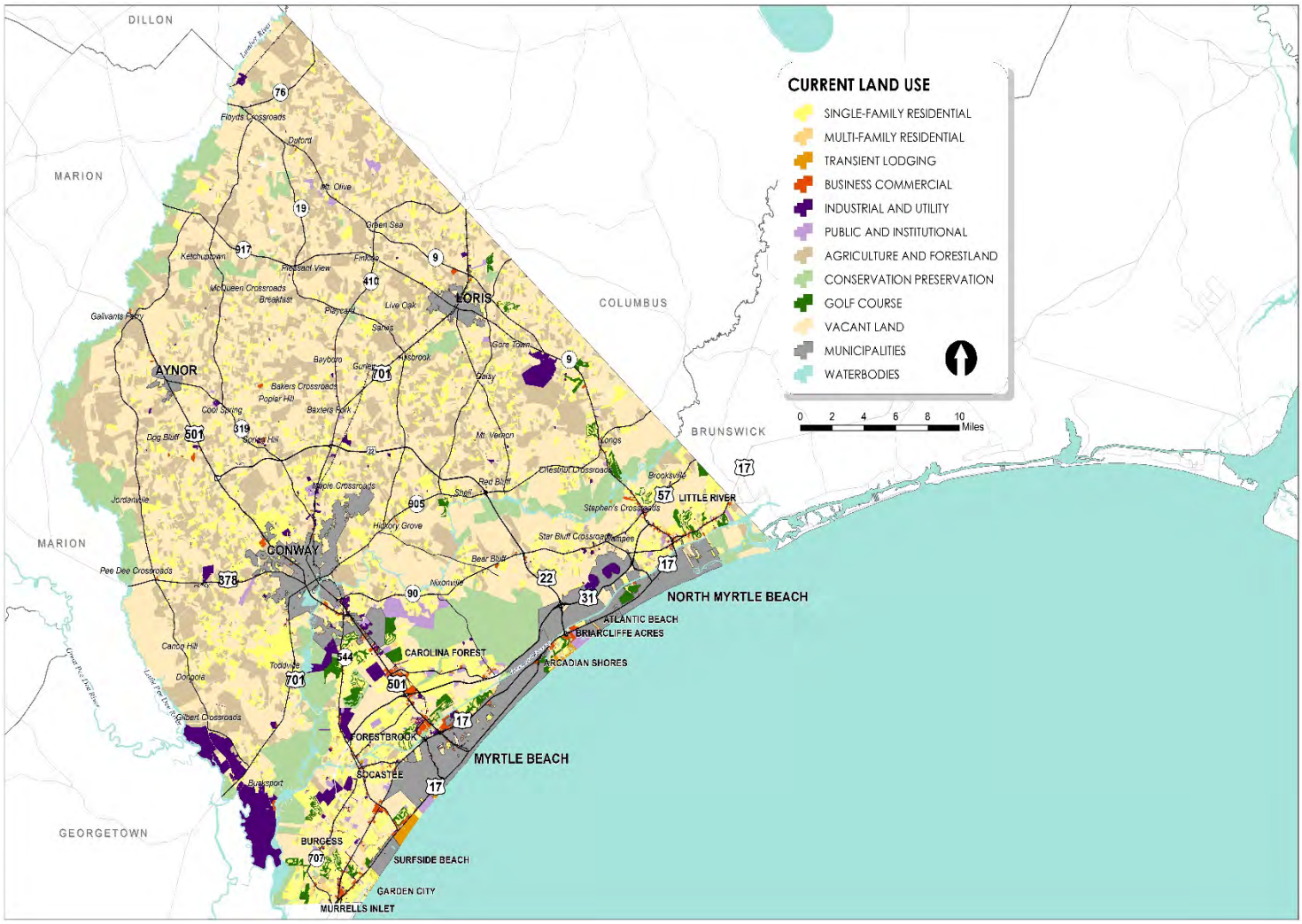
Map Provided by the Town of Briarcliffe Acres



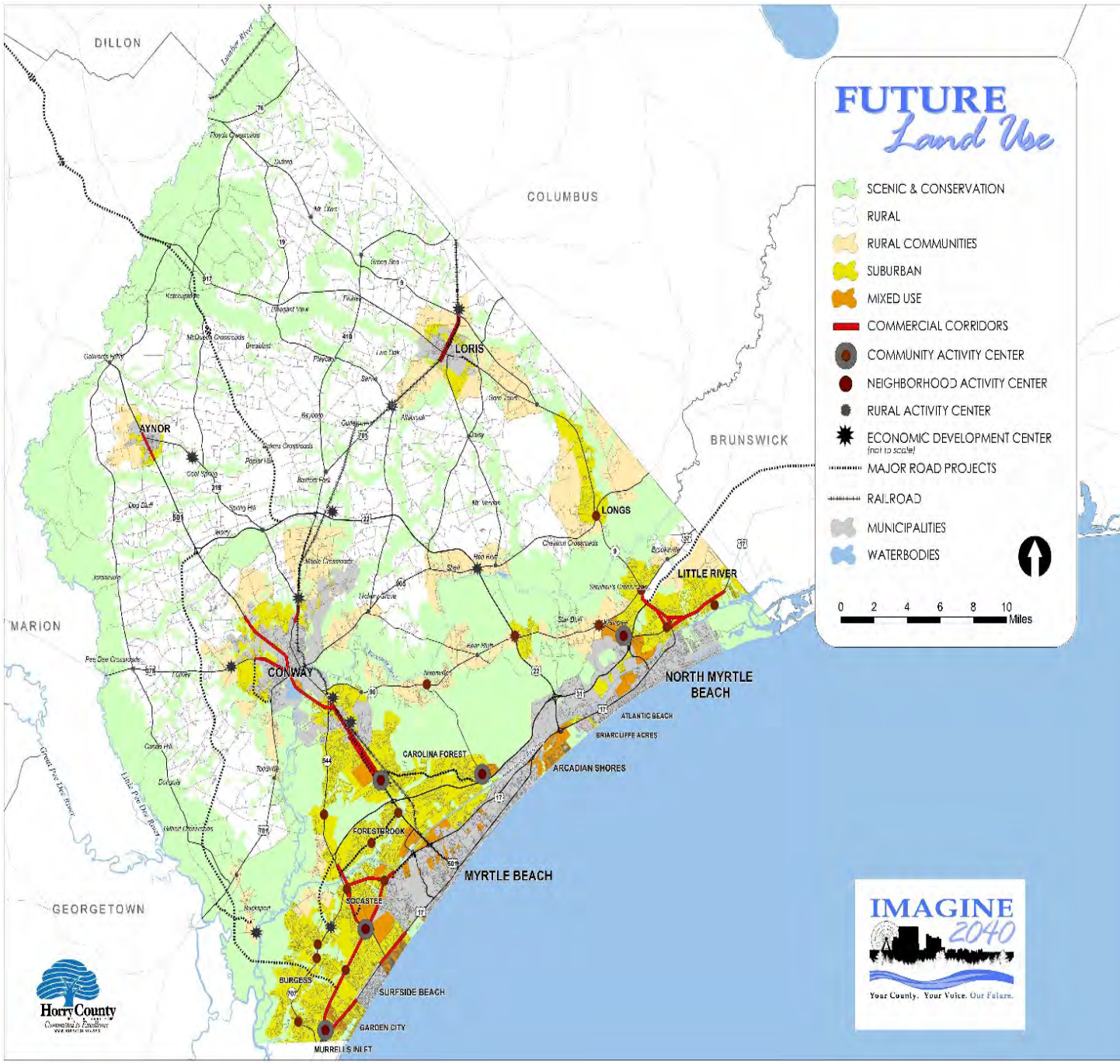
Map Provided by the Town of Briarcliffe Acres



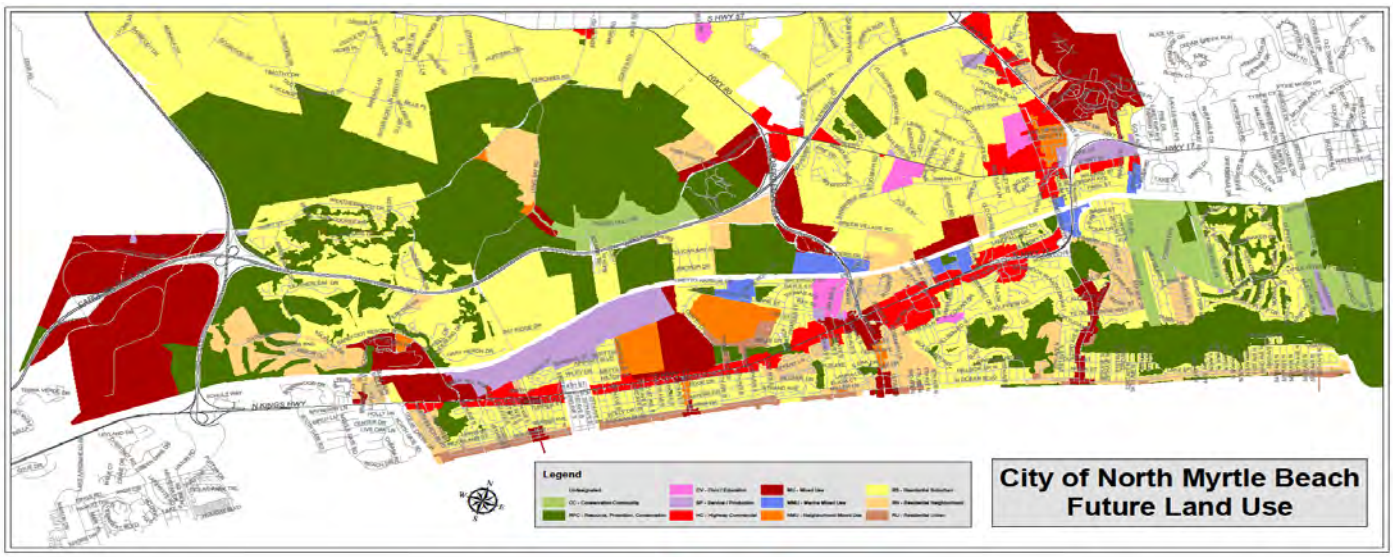
Map Provided by the City of Conway

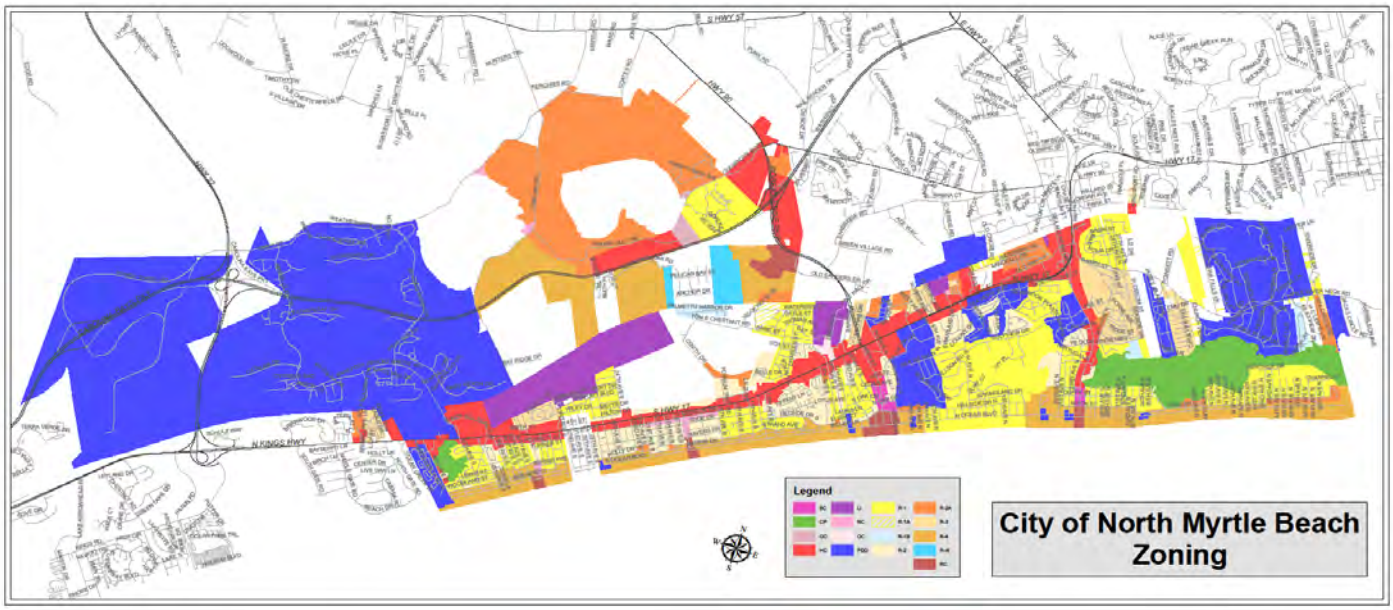


Map Generated by Horry County Planning



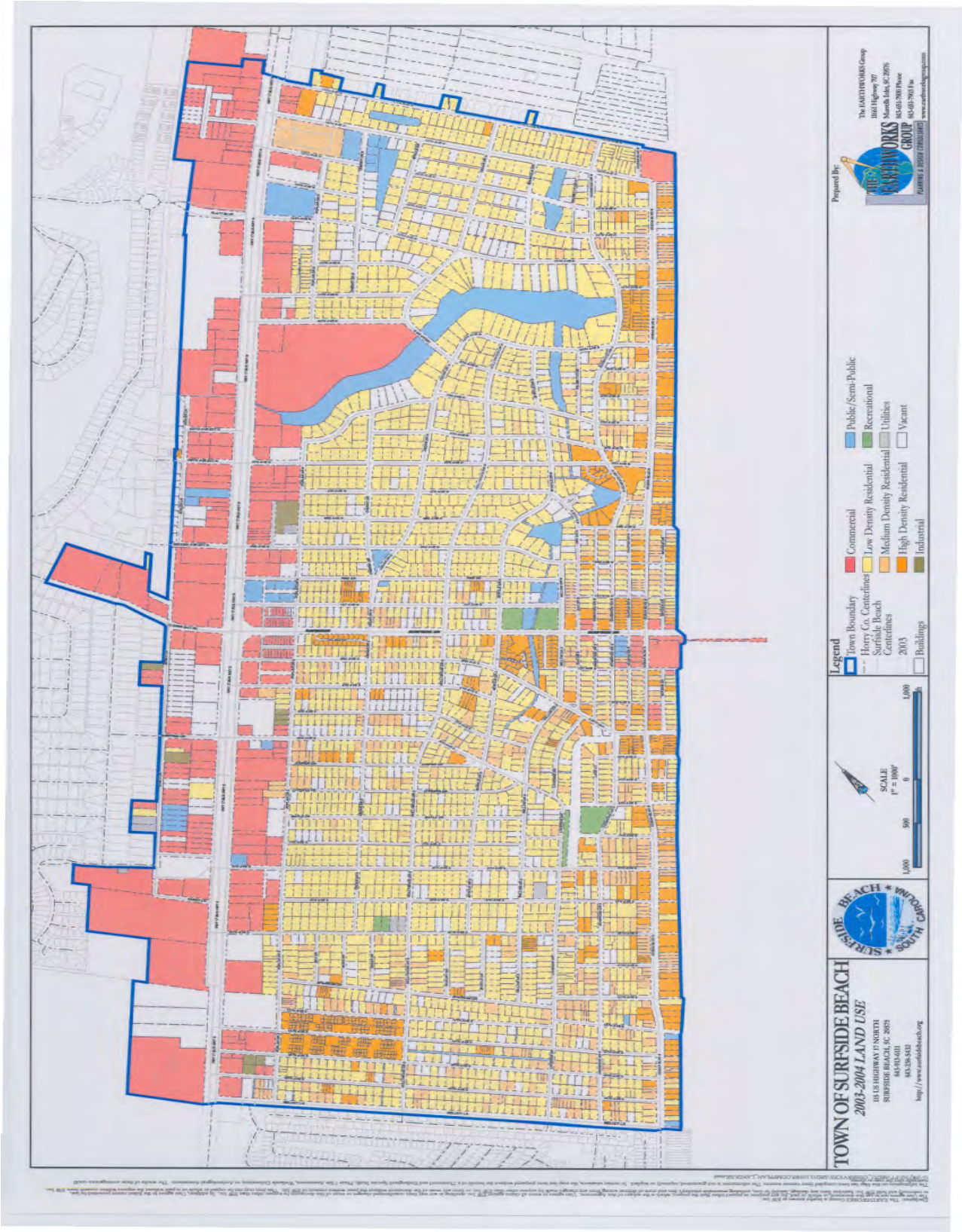
Map provided by Horry County Planning





Type of Development	# of Buildings (2020)
Residential	16,000
Commercial	2,500
Industrial	4
Agriculture	0
Educational	1
Religion	12
Haz Mat Storage	20

Maps and data provided by City of North Myrtle Beach



Map Provided by the Town of Surfside Beach

4. MITIGATION STRATEGY

The planning team reviewed and analyzed this section of the plan and generated new actions for the 2020 update. Although the mitigation goals and techniques did not change the mitigation actions were updated. The actions were reviewed individually by the group and the ranking remained the same. The format of the actions was not changed. Also the previous and completed actions were incorporated into the plan as well and are located towards the end of the actions section.

The Mitigation Strategy of this plan was created by the input of the Mitigation Task Force and public input as a result of reviewing the findings of the hazard profiles and vulnerability assessment of this plan. The Emergency Management staff used the FEMA "How to Guide on Mitigation Strategies" as a guide to developing the Mitigation goals and actions. This portion of the Hazard Mitigation Plan outlines Horry County's overall strategy to reduce the community's vulnerability to the effects of natural hazards.

4.1 LOCAL HAZARD MITIGATION GOALS

Horry County Emergency Management staff and the Mitigation Planning Task Force analyzed the risk assessment to establish goals for the reduction of those effects based upon that analysis. These goals were reviewed and analyzed again during the re-write process for the 2015 update and again in 2020. These goals will be the blueprint for the development of specific actions that will reduce the potential impacts and effects as identified in the vulnerability assessment. **Mitigation Goals** were designed to be general guidelines of what is to be achieved. These goals are long-term and represent the overall vision of the mitigation plan. The following goals were determined to have the greatest benefit in hazard reduction in Horry County.

Goal 1: Minimize loss of life and property from natural hazard events.

Goal 2: Protect public health and safety.

Goal 3: Increase public awareness of risk from natural hazards.

Goal 4: Improve government and public response to natural hazard disasters.

Goal 5: Reduce risk and effects of natural hazards.

Goal 6: Increase the technical capabilities to reduce potential losses.

Goal 7: Enhance existing or develop new policies/regulations that will reduce the potential damaging effects of hazards.

Goal 8: Protect the most vulnerable populations, buildings and critical facilities.

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4.2 MITIGATION TECHNIQUES

In formulating this Mitigation Strategy, a wide range of activities were considered in order to help achieve the goals of the Plan and to lessen the vulnerability of each jurisdiction to the effects of natural hazards. In general, all of these activities fall into one of the following broad categories of mitigation techniques. This portion of the plan was reviewed and no updates or changes were made.

Prevention (1)
Preventative activities are intended to keep hazard problems from getting worse. They are particularly effective in reducing a community's future vulnerability, especially in areas where development has not occurred or capital improvements have not been substantial. Examples of preventative activities include:

- Zoning
- Land development regulations
- Floodplain regulations
- Storm water management
- Drainage system maintenance
- Capital improvements programming
- Shoreline / riverine /fault zone setbacks

Property Protection (2)

Property protection measures protect existing structures by modifying the building to withstand hazardous events, or removing structures from hazardous locations. Examples include:

- Acquisition
- Relocation
- Building elevation
- Critical facilities protection
- Retrofitting (i.e., wind proofing, flood proofing, seismic design standards, etc.)
- Insurance
- Safe rooms

Natural Resource Protection (3)

Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their mitigative functions. Such areas include floodplains, wetlands and dunes. Parks, recreation or conservation agencies and organizations often implement these measures. Examples include:

- Floodplain protection
- Beach and dune preservation
- Riparian buffers
- Fire resistant landscaping
- Fuel Breaks
- Erosion and sediment control
- Wetland preservation and restoration

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- Habitat preservation
- Slope stabilization

Structural Projects (4)

Structural mitigation projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event. They are usually designed by engineers and managed or maintained by public works staff. Examples include:

- Reservoirs
- Levees / dikes / floodwalls / seawalls
- Diversions / Detention / Retention
- Channel modification
- Beach nourishment
- Storm sewers

Emergency Services (5)

Although not typically considered a "mitigation technique," emergency service measures do minimize the impact of a hazard event on people and property. These commonly are actions taken immediately prior to, during, or in response to a hazard event. Examples include:

- Warning systems
- Evacuation planning and management
- Sandbagging for flood protection
- Installing shutters for wind protection

Public Information and Awareness (6)

Public information and awareness activities are used to advise residents, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property. Examples of measures to educate and inform the public include:

- Outreach projects
- Speaker series / demonstration events
- Hazard map information
- Real estate disclosure
- Library materials
- School children education
- Hazard expositions
- Know Your Zone signs
- SCDOT message boards

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4.3 MITIGATION ACTIONS

During the 2015 and 2020 update to the plan the Mitigation Planning Task Force reviewed and analyzed this section and found it still to be relevant and accurate. The Mitigation Actions are designed to support and correspond directly with the Mitigation Goals. This plan includes action items specific to each jurisdiction in the planning area requesting FEMA approval or credit of the plan. These actions were developed to provide specific measures to be undertaken by each participating jurisdictions and Horry County. Each action identifies the goal(s) it is intended to achieve and provides measures to assure successful and timely implementation. The mitigation actions were chosen and defined largely based upon the limited capabilities of each jurisdiction given their geographic location and fiscal capabilities. Each jurisdiction chose projects that would be effective, and potentially fundable with the help of outside sources.

The Mitigation Actions were ranked (High, Moderate and Low Priority) by each jurisdiction based on a cost-benefit review according to the following criteria:

- Projects that are most needed
- Projects that would most likely be accomplished
- Projects that would most effectively address mitigation needs
- Potential monetary costs
- NFIP compliance
- Social Impact
- Environmental effects
- Technical capabilities
- Ability to maintain the project
- Political or legal effects

The mitigation actions proposed for Horry County to undertake are listed on the pages that follow. Each has been designed to meet the goals identified through this Hazard Mitigation Plan. Each proposed action includes:

1) the appropriate category for the mitigation technique;
2) the hazard it is designed to mitigate;
3) the goal(s) it is intended to help achieve;
4) the priority level for its implementation (high, moderate or low);
5) potential funding sources, if applicable;
6) the agency/person assigned responsibility for carrying out the strategy;
7) a target completion date;
8) area/jurisdiction

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Again, it is important to note that these mitigation actions are short-term, specific measures to be undertaken by Horry County and the identified jurisdictions. All actions in the Plan will include new and existing buildings and infrastructure as applicable to reduce the effects of the identified hazards. It is expected this component of the Plan will be the most dynamic; it will be used as the primary indicator to measure the Plan's progress over time and will be routinely updated and/or revised through future planning efforts.

4.4 IMPLEMENTATION OF MITIGATION MEASURES

During the 2015 and 2020 re-write process this section of the plan saw lots of interaction and updates as actions were completed, existing actions continued on and new actions were added.

No changes occurred to the above criteria, each jurisdiction evaluated their actions and determined the jurisdictions priorities for mitigation actions. Mitigation actions were reviewed by the Mitigation Planning Task Force and prioritized for plan implementation. Throughout the implementation of these projects, the Mitigation Planning Task Force will continually review all mitigation actions in regards to the cost-benefit review. The Task Force used a ranking system of High to Low Priority, with projects that have a greater potential for implementation based on the above factors received a higher ranking than those that have less potential of being implemented.

Implementation of these actions is dependent on the financial resources and the fiscal capabilities of each jurisdiction. Each jurisdiction will pursue outside funding from Federal and State agencies, and delay in funding awards may result in delay of implementation of mitigation actions. Each jurisdiction before implementation will conduct a cost-benefit review to determine the feasibility of the project. The Horry County Emergency Management staff will notify each jurisdiction of any grant funding that is available.

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4.5 ACTIONS

Action: Acquire and preserve properties subject to repetitive flooding from willing and voluntary property owners	
Category:	Property Protection
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 4, 5, 7 & 8
Priority:	Moderate
Funding Source:	SCEMD, HMGP, FEMA, PDM, FMA, SRL & RLP
Price Range:	Varying
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Reviewed & Updated on an annual basis
Jurisdiction:	Horry County

Action: Strengthening of existing buildings or structures to make more disaster resilient and increase sheltering capacity	
Category:	Property Protection
Hazard:	Hurricanes, Flooding
Goal(s) Addressed:	1, 2, 4, 5, 8
Priority:	Moderate
Funding Source:	HMGP, SCEMD, FEMA, PDM, FMA
Price Range:	Varies depending on number of structures
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Reviewed & Updated on an annual basis
Jurisdiction:	Horry County

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Action: Continue to promote the use of NOAA weather radios as a primary notification system to forward weather advisories to the general public and special locations. The county will continue to evaluate the different types of notification systems currently being used along with new types of notification technology	
Category:	Public Information & Awareness
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 3, 4 & 8
Priority:	Moderate
Funding Source:	HMGP & National Weather Service
Price Range:	$25,000
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Reviewed & Updated on an annual basis
Jurisdiction:	Horry County

Action: Conduct an annual exercise of the Emergency Operations Plan with a scenario that tests policies and procedures	
Category:	Prevention
Hazard:	Hurricane
Goal(s) Addressed:	1, 4, 5 & 7
Priority:	High
Funding Source:	LEMPG, SCEMD & HMGP
Price Range:	$10,000
Responsibility:	Horry County Emergency Management
Completion Date:	Annual
Jurisdiction:	Horry County

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Action: Distribute an annual outreach letter with mitigation and insurance information to those owners of Repetitive Loss Properties	
Category:	Public Information
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 3, 4, 5, 8
Priority:	High
Funding Source:	General Fund
Price Range:	$600
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Done Annually
Jurisdiction:	Horry County

Action: Create education materials for historic property owners explaining measures to properly wind-proof, flood-proof, weatherize, and provide fire suppression for their structures and to encourage them to have adequate insurance on their property to allow for repairs or reconstructions in the event of disaster.	
Category:	Public Information & Awareness
Hazard:	All Hazard
Goal(s) Addressed:	1, 3, 4, 5, 6 & 8
Priority:	Low
Funding Source:	HMGP & PDM
Price Range:	$5,000-$15,000
Responsibility:	Horry County Historic Preservation Commission, Public Information, and Horry County Emergency Management
Completion Date:	Continuous-Reviewed & Updated on an annual basis
Jurisdiction:	Horry County

WORKING DRAFT

Action: Establish, maintain and update facilities surveys and photos database of all county facilities	
Category:	Prevention and Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 4 , 5 & 6
Priority:	Moderate
Funding Source:	General Fund
Price Range:	$60,000-$140,000
Responsibility:	Horry County Risk Management and Horry County Emergency Management
Completion Date:	Continuous-Reviewed & Updated on an annual basis
Jurisdiction:	Horry County

Action: Educate public on flood zone areas and wind borne debris by providing brochures or access to other informative communication platforms.	
Category:	Public Information and Awareness
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 3
Priority:	Moderate
Funding Source:	General Fund, HMGP, PDM & FEMA
Price Range:	$10,000
Responsibility:	Horry County Code Enforcement, Public Information, and Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

WORKING DRAFT

Action: Identify the County's most at-risk critical facilities, and evaluate the potential mitigation techniques for protecting each facility to the maximum extent possible	
Category:	Prevention and Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 5, 6 & 8
Priority:	Moderate
Funding Source:	PDM, SCEMD & HMGP
Price Range:	$50,000
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

Action: Educate residents living in the identified storm surge areas through implementation of Know Your Zone Presentation (KYZ)	
Category:	Public Information & Awareness/Property Protection
Hazard:	Storm Surge
Goal(s) Addressed:	1, 2 & 3
Priority:	High
Funding Source:	General Fund & HMGP
Price Range:	$25,000
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

WORKING DRAFT

Action: Update County Land Development Regulations to require the installation of Know Your Zone evacuation signs at the entrance of all new major residential developments within evacuation zones.	
Category:	Public Information & Awareness
Hazard:	Storm Surge
Goal(s) Addressed:	1, 2 & 3
Priority:	High
Funding Source:	General Fund & HMGP
Price Range:	$1,000
Responsibility:	Horry County Planning and Zoning, Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

Action: Maintain CRS Certification and working towards lowering CRS class rating	
Category:	Public Information & Awareness/Property Protection
Hazard:	Flooding
Goal(s) Addressed:	3 & 7
Priority:	Moderate
Funding Source:	General Fund & HMGP
Price Range:	Varying
Responsibility:	Horry County Emergency Management, Storm Water Management & Code Enforcement-Floodplain Management, Horry County Planning & Zoning
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

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Action: Encourage "Safe Room" construction in schools, day care centers, assisted living and other locations	
Category:	Public Education
Hazard:	Hurricane, Tornado, Earthquake and Thunderstorm/Wind
Goal(s) Addressed:	1, 2 & 3
Priority:	Moderate
Funding Source:	PDM & HMGP
Price Range:	$25,000
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on annual basis
Jurisdiction:	Horry County

Action: Educate the public on how to winterize their homes	
Category:	Public Information & Awareness
Hazard:	Winter Storms
Goal(s) Addressed:	1, 2, 3 & 5
Priority:	Low
Funding Source:	HMGP
Price Range:	$10,000-$25,000
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

WORKING DRAFT

Action: Educate the public on how to conserve water during a drought	
Category:	Public Information & Awareness
Hazard:	Flooding/NFIP
Goal(s) Addressed:	1 & 3
Priority:	Moderate
Funding Source:	PDM & HMGP
Price Range:	$15,000
Responsibility:	Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

Action: Continue Implementation of the Firewise USA® Program in high-risk communities throughout the County, through educational opportunities, inform public living in urban interface areas how to make their homes and businesses safer against fire	
Category:	Public Information & Awareness
Hazard:	Wildfire
Goal(s) Addressed:	1, 2, 3 & 5
Priority:	Moderate
Funding Source:	General Fund, SC Forestry, FEMA, HMGP & SCEMD
Price Range:	$100,000
Responsibility:	Horry County Fire Rescue & SC Forestry Commission
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

WORKING DRAFT

Action: Upgrade impact glass or storm shutters on existing Horry County Government buildings in high hazard areas	
Category:	Property Protection
Hazard:	Hurricanes, Tornados, Severe Thunderstorm/Wind
Goal(s) Addressed:	1, 2 & 3
Priority:	Moderate
Funding Source:	HMGP & PDM
Price Range:	$5,000,000
Responsibility:	Horry County Maintenance, Horry County Code Enforcement & Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

Action: Create public services announcements regarding heat related illness for local cable television	
Category:	Public Information & Awareness
Hazard:	Extreme Heat
Goal(s) Addressed:	1 & 3
Priority:	Low
Funding Source:	PDM & HMGP
Price Range:	$15,000
Responsibility:	Public Information Office
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

WORKING DRAFT

Action: Create public service announcements regarding tornado preparedness for local cable television	
Category:	Public Information & Awareness
Hazard:	Tornados
Goal(s) Addressed:	1 & 3
Priority:	Low
Funding Source:	PDM & HMGP
Price Range:	$15,000
Responsibility:	Public Information Office
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

Action: Create a speaker series focused on all-hazards impacting Horry County.	
Category:	Public Information & Awareness
Hazard:	All hazards
Goal(s) Addressed:	1, 2 & 3
Priority:	Low
Funding Source:	
Price Range:	
Responsibility:	Public Information Office
Completion Date:	Continuous – Reviewed and updated on an annual basis.
Jurisdiction:	Horry County

WORKING DRAFT

Action: Elevate, demolish or move non-conforming structures that have been substantially damaged or have been determined to be repetitive loss structures	
Category:	Property Protection
Hazard:	Flooding/NFIP
Goal(s) Addressed:	1, 2, 3, 5, 7 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM, FMA, RLP & SRL
Price Range:	Various
Responsibility:	Horry County Flood Hazard Control Officer & Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

Action: Collaborate with land conservation organizations to identify, acquire, and preserve undeveloped land within floodprone areas of the County that will provide natural flood retention and limit development in floodprone areas.	
Category:	Natural Resource Protection
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 5 & 7
Priority:	Moderate
Funding Source:	HMGP, PDM, LWCF, NFWF, SC Conservation Bank, Horry County Open Space Fund, Horry County Tree Mitigation Fund
Price Range:	$1,000,000-$5,000,000
Responsibility:	Horry County Planning & Zoning, Parks & Open Space Board
Completion Date:	Continuously reviewed and updated on an annual basis
Jurisdiction:	Horry County

WORKING DRAFT

Action: Acquire and protect undeveloped land adjacent to flood-prone communities/neighborhoods to provide for natural flood retention and limit future development in flood prone areas.	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 5 & 7
Priority:	Moderate
Funding Source:	HMGP, PDM, Parks & Open Space Fund & Conservation Partners
Price Range:	$1,000,000-$5,000,000
Responsibility:	Horry County Planning & Zoning, Parks & Open Space Board & Horry County Emergency Management
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry County

Action: Improve Storm Water Management & Computer modeling capabilities	
Category:	Natural Resource Protection, Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 5, 6, 7 & 8
Priority:	High
Funding Source:	Horry County SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	July 2021
Jurisdiction:	Horry County

WORKING DRAFT

Action: Expand storm water facilities inspection program to include detention/retention ponds	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 3, 5 & 7
Priority:	Moderate
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	On-going Inspection Program in place
Jurisdiction:	Horry County

Action: Develop a capital improvement plan to resolve major drainage basin problems	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 4, 5 & 7
Priority:	High
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	On-going, four (4) basins per year
Jurisdiction:	Horry County

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Action: Develop a plan and implement basin studies on a prioritized basis	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 5, & 7
Priority:	Moderate
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	On-going, four (4) basins per year
Jurisdiction:	Horry County

Action: Improve County rating in the Community Rating System through drainage system maintenance and stormwater management credits	
Category:	Public Information & Awareness
Hazard:	Flooding
Goal(s) Addressed:	3 & 7
Priority:	High
Funding Source:	Horry County SW Utility Fee, General Fund & HMGP
Price Range:	$100,000
Responsibility:	Horry County Emergency Management & Storm Water Management
Completion Date:	2021
Jurisdiction:	Horry County

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Action: Create a program to perform condition assessments annually of ditches, canals and storm sewer systems	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	2, 5 & 7
Priority:	High
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	Monitored Annually, on going
Jurisdiction:	Horry County

Action: Improve mechanical maintenance program	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 5 & 7
Priority:	Moderate
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	Monitored Annually, on going
Jurisdiction:	Horry County

WORKING DRAFT

Action: Improve chemical vegetation control programs	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	2, 5 & 7
Priority:	Moderate
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	Monitored Annually, on going
Jurisdiction:	Horry County

Action: Educate the public on the flood zone areas and wind borne debris area with literature and an outreach project	
Category:	Public Information
Hazard:	Flooding, Hurricane
Goal(s) Addressed:	1, 2 & 3
Priority:	Moderate
Funding Source:	General Fund, Community Outreach Volunteers
Price Range:	$250
Responsibility:	Town Manager, Community Outreach Volunteers
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Town Of Atlantic Beach

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Action: Educate the public on storm surge with literature and outreach project	
Category:	Public Information
Hazard:	Flooding, Hurricane
Goal(s) Addressed:	1, 2 & 3
Priority:	Moderate
Funding Source:	General Fund, Community Outreach Volunteers
Price Range:	$250
Responsibility:	Town Manager, Community Outreach Volunteers
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Town Of Atlantic Beach

Action: Improve storm water drainage	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 3, 4, 5, 7 & 8
Priority:	High
Funding Source:	DHEC & General Fund
Price Range:	$250,000 - $750,000
Responsibility:	Town of Aynor
Completion Date:	**July 2017**
Jurisdiction:	Town of Aynor

WORKING DRAFT

Action: Implement program to educate residents how to prepare homes for winter	
Category:	Public Information and Awareness
Hazard:	Winter Storms
Goal(s) Addressed:	1, 2, 3 & 8
Priority:	Moderate
Funding Source:	General Fund & Local Funds
Price Range:	$5,000 - $10,000
Responsibility:	Town of Aynor
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Town of Aynor

Action: Education of Residents living in the identified storm surge areas	
Category:	Property Protection
Hazard:	Storm Surge & Flooding
Goal(s) Addressed:	1, 2 & 3
Priority:	Moderate
Funding Source:	General Fund & HMGP
Price Range:	$15,000
Responsibility:	Briarcliffe Acres Town Council
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Town of Briarcliffe Acres

WORKING DRAFT

Action: Decrease flooding and pollution potential in the low lying flood plain area by requiring all residents in this area to hook up to existing sewer system	
Category:	Natural Resource Protection
Hazard:	Flooding
Goal(s) Addressed:	2, 5 & 8
Priority:	High
Funding Source:	Residents
Price Range:	$200,000 - $225,000
Responsibility:	Briarcliffe Acres Town Council
Completion Date:	**1st Quarter of 2015**
Jurisdiction:	Town of Briarcliffe Acres

Action: Reduce potential impact from Wildfire Damage by holding Firewise USA® education and outreach one day every year	
Category:	Prevention
Hazard:	Wildfire
Goal(s) Addressed:	1, 2, 3, 7 & 8
Priority:	High
Funding Source:	SC Forestry Commission
Price Range:	$9,000 - $12,000
Responsibility:	Briarcliffe Acres Town Council
Completion Date:	Continuous-Occurs annually every year
Jurisdiction:	Town of Briarcliffe Acres

WORKING DRAFT

Action: Install new well and ground storage tank to insure supply in potential future growth or emergency needs	
Category:	Prevention
Hazard:	All Hazards
Goal(s) Addressed:	2, 4, 6 & 7
Priority:	High
Funding Source:	USDA Loan
Price Range:	$1,800,000
Responsibility:	Bucksport Water System
Completion Date:	4/30/2015
Jurisdiction:	Bucksport Water System

Action: Install RO filtration system and new lines to ensure flow and quality can be delivered regardless of disasters. The upgrades will help meet DHEC & EPA standards	
Category:	Prevention
Hazard:	All Hazards
Goal(s) Addressed:	2, 4, 6 & 7
Priority:	High
Funding Source:	USDA Loan
Price Range:	$1,200,000
Responsibility:	Bucksport Water System
Completion Date:	12/31/2015
Jurisdiction:	Bucksport Water System

WORKING DRAFT

Action: Install SCADA system to allow access to wells remotely	
Category:	Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	2, 5, 6, 7 & 8
Priority:	High
Funding Source:	USDA Loan
Price Range:	$150,000
Responsibility:	Bucksport Water System
Completion Date:	4/30/2015
Jurisdiction:	Bucksport Water System

Action: To bury all overhead power-lines within the downtown area of the City of Conway	
Category:	Prevention & Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	2, 5, 6 & 8
Priority:	Moderate
Funding Source:	General Fund, Grant Funding, HMGP, PDM & Local Funds
Price Range:	Open
Responsibility:	City of Conway Engineering
Completion Date:	On-going
Jurisdiction:	City of Conway

WORKING DRAFT

Action: Maintain Storm water Management Program to help ensure no issue arise a result of flooding	
Category:	Prevention & Property Protection
Hazard:	Flooding, Hurricane, Severe Thunderstorm
Goal(s) Addressed:	1, 2, 4, 5, 6, 7 & 8
Priority:	High
Funding Source:	General Fund
Price Range:	Open
Responsibility:	City of Conway Storm Water Management
Completion Date:	Continuous-Occurs annually every year
Jurisdiction:	City of Conway

Action: Create an All Hazards Mitigation Plan specific for the City of Conway	
Category:	Prevention
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 3, 4, 5, 6, 7, 8
Priority:	High
Funding Source:	City's General Fund
Price Range:	$30,000
Responsibility:	City of Conway
Completion Date:	FY 2021/2022
Jurisdiction:	City of Conway

WORKING DRAFT

Action: Projects related to water retention, storage and flood prevention	
Category:	Prevention, Property Protection, Natural Resource Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 3, 4, 5, 6, 7, 8
Priority:	High
Funding Source:	HMGP, FEMA, SCEMD
Price Range:	$2 million +
Responsibility:	City of Conway
Completion Date:	On-going
Jurisdiction:	City of Conway

Action: Utilizing the Sports and Fitness Center for a sheltering location	
Category:	Property Protection, Emergency Services
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 5
Priority:	Medium
Funding Source:	HMGP, FEMA, SCEMD
Price Range:	$400,000
Responsibility:	City of Conway
Completion Date:	FY 2021/2022
Jurisdiction:	City of Conway

WORKING DRAFT

Action: Obtaining the Community Rating System (CRS) for the City of Conway	
Category:	Prevention, Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	3, 4, 7
Priority:	High
Funding Source:	City General Fund
Price Range:	$50,000
Responsibility:	City of Conway
Completion Date:	FY 2021/2022
Jurisdiction:	City of Conway

Action: Construction of a new city Hall to use as an alternate Emergency Operations Center location	
Category:	Emergency Services, Structural Projects
Hazard:	All Hazards
Goal(s) Addressed:	2, 4, 5, 6, 8
Priority:	Medium
Funding Source:	City Debt Leverage using IRPB funding
Price Range:	$20 million +
Responsibility:	City of Conway
Completion Date:	2025
Jurisdiction:	City of Conway

WORKING DRAFT

Action: Elevating roadways and bridges in flood prone areas	
Category:	Prevention
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 3, 4, 5, 6, 7, 8
Priority:	High
Funding Source:	SCDOT, FHWA, HMGP, FEMA
Price Range:	Unknown
Responsibility:	City of Conway
Completion Date:	On-going
Jurisdiction:	City of Conway

Action: Enhancing the existing water and sewer infrastructure	
Category:	Prevention, Structural projects
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 3, 4, 5, 6, 7, 8
Priority:	High
Funding Source:	SCRIA, HMGP, FEMA, SCEMD
Price Range:	$8 million
Responsibility:	City of Conway
Completion Date:	On-going
Jurisdiction:	City of Conway

WORKING DRAFT

Action: Replacing the diesel powered generator in the Public Safety Building with natural gas power	
Category:	Prevention, Structural Projects
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 3, 4, 5, 6, 7, 8
Priority:	High
Funding Source:	City Funding, HMGP, FEMA, SCEMD
Price Range:	$25,000
Responsibility:	City of Conway
Completion Date:	FY 2021/2022
Jurisdiction:	City of Conway

Action: Provide weather proofing of critical infrastructure, facilities and GSWSA EOC offices.	
Category:	Property Protection
Hazard:	Hurricane, Tornado, Severe Thunderstorm/Wind and Winter Weather
Goal(s) Addressed:	1, 2 ,4 & 5
Priority:	High
Funding Source:	Local Government, FEMA, PDM & HMGP
Price Range:	varies
Responsibility:	Grand Strand Water & Sewer Authority
Completion Date:	ongoing
Jurisdiction:	Grand Strand Water & Sewer Authority

WORKING DRAFT

Action: Provide emergency stand-by electrical power & fuel storage for existing and future generators located at critical facilities.	
Category:	Property Protection
Hazard:	Hurricane, Tornado, Severe Thunderstorm/Wind and Winter Weather
Goal(s) Addressed:	1, 2, 4, 5, 6, & 8
Priority:	High
Funding Source:	Local Government, FEMA, PDM & HMGP
Price Range:	$500,000
Responsibility:	Grand Strand Water & Sewer Authority
Completion Date:	When funds available
Jurisdiction:	Grand Strand Water & Sewer Authority

Action: Provide bulk chemical storage for water and wastewater treatment facilities if supply chains/transportation means are disrupted.	
Category:	Property Protection
Hazard:	Hurricane, Tornado, Severe Thunderstorm/Wind and Winter Weather
Goal(s) Addressed:	1, 2, 4, 5, 6, & 8
Priority:	High
Funding Source:	Local Government, FEMA, PDM & HMGP
Price Range:	$1,000,000
Responsibility:	Grand Strand Water & Sewer Authority
Completion Date:	When funds available
Jurisdiction:	Grand Strand Water & Sewer Authority

WORKING DRAFT

Action: Provide tornado prevention & response education to students & faculty in an effort to minimize potential losses	
Category:	Public Information & Awareness
Hazard:	Tornado
Goal(s) Addressed:	1, 2, 3 & 8
Priority:	High
Funding Source:	Annual Budget
Price Range:	Open
Responsibility:	Horry County Schools
Completion Date:	Continuous-Reviewed & Updated on an annual basis
Jurisdiction:	Horry County Schools

Action: Provide earthquake prevention & response education to students & faculty in an effort to minimize potential losses	
Category:	Public Information & Awareness
Hazard:	Earthquake
Goal(s) Addressed:	1, 2, 3 & 8
Priority:	High
Funding Source:	Annual Budget
Price Range:	Open
Responsibility:	Horry County Schools
Completion Date:	Continuous-Reviewed & Updated on an annual basis
Jurisdiction:	Horry County Schools

WORKING DRAFT

Action: Provide fire prevention & response education to students & faculty in an effort to minimize potential losses	
Category:	Public Information & Awareness
Hazard:	Fire
Goal(s) Addressed:	1, 2, 3 & 8
Priority:	High
Funding Source:	Annual Budget
Price Range:	Open
Responsibility:	Horry County Schools
Completion Date:	Continuous-Reviewed & Updated on an annual basis
Jurisdiction:	Horry County Schools

Action: Develop and implement a better right-or-way maintenance program	
Category:	Prevention & Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	Moderate
Funding Source:	General Fund, FEMA, HMGP & PDM
Price Range:	Open
Responsibility:	Horry Electric Cooperative
Completion Date:	Continuous-Reviewed and Updated on an annual basis
Jurisdiction:	Horry Electric Cooperative Inc.

WORKING DRAFT

Action: Install security cameras at substations	
Category:	Prevention & Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 4, 6 & 8
Priority:	Moderate
Funding Source:	General Fund, FEMA, HMGP & PDM
Price Range:	$15,000 per station
Responsibility:	Horry Electric Cooperative
Completion Date:	Continuous-Reviewed and updated on an annual basis
Jurisdiction:	Horry Electric Cooperative

Action: Acquire and preserve properties subject to repetitive flooding from willing and voluntary property owners	
Category:	Property Protection
Hazard:	Flooding/NFIP
Goal(s) Addressed:	1, 2, 3, 5, 7 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM, FMA, RLP & SRL
Price Range:	Open
Responsibility:	City of Loris
Completion Date:	Continuous-Reviewed and updated on an annual basis
Jurisdiction:	City of Loris

WORKING DRAFT

Action: Create a storm water management and inspection plan	
Category:	Prevention and Property Protection
Hazard:	Flooding, Hurricane, Severe Thunderstorm
Goal(s) Addressed:	1 & 2
Priority:	High
Funding Source:	HMGP, Grants, General Fund
Price Range:	Open
Responsibility:	City of Loris Public Works
Completion Date:	2021
Jurisdiction:	City of Loris

Action: Create storm water facilities to include detention/retention ponds	
Category:	Prevention and Property Protection
Hazard:	Flooding, Hurricane, Severe Thunderstorm
Goal(s) Addressed:	1
Priority:	High
Funding Source:	HMGP, Grants, General Funding
Price Range:	Open
Responsibility:	City of Loris Public Works
Completion Date:	2022
Jurisdiction:	City of Loris

WORKING DRAFT

Action: Educate the public on flood zones	
Category:	Public Information
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 3, 4, 5, 8
Priority:	Moderate
Funding Source:	HMGP, Grants, General Fund
Price Range:	$5,000
Responsibility:	City of Loris Code Enforcement
Completion Date:	2021
Jurisdiction:	City of Loris

Action: Install hurricane shutters for wind protection	
Category:	Emergency Services
Hazard:	Hurricane
Goal(s) Addressed:	8
Priority:	High
Funding Source:	FEMA, HMGP & PDM
Price Range:	$10,000
Responsibility:	Murrells Inlet-Garden City Fire District
Completion Date:	**2019**
Jurisdiction:	Murrells Inlet-Garden City Fire District

WORKING DRAFT

Action: Elevate, demolish or move non-conforming structures that have been substantially damaged or have been determined to be repetitive loss structures	
Category:	Property Protection
Hazard:	Flooding/NFIP
Goal(s) Addressed:	1, 2, 3, 5, 7 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM, FMA, RLP & SRL
Price Range:	Various
Responsibility:	Town of Surfside Beach
Completion Date:	Continuous-Reviewed and updated on an annual basis
Jurisdiction:	Town of Surfside Beach

WORKING DRAFT

COMPLETED ACTIONS

Action: Apply and meet the requirements to become a participant of the Community Rating System (CRS)	
Category:	Public Information & Awareness
Hazard:	Flooding
Goal(s) Addressed:	3 & 7
Priority:	High
Funding Source:	General Fund & HMGP
Price Range:	$100,000
Responsibility:	Horry County Emergency Management, Storm Water Management & Code Enforcement-Floodplain Management
Completion Date:	**2012**
Jurisdiction:	Horry County

Action: Develop a capital improvement plan to resolve major drainage basin problems	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 4, 5 & 7
Priority:	High
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	**Unable to complete due to budgetary restrictions**
Jurisdiction:	Horry County

WORKING DRAFT

Action: Develop a plan and implement basin studies on a prioritized basis	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 5 & 7
Priority:	Moderate
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	Open
Responsibility:	Horry County Storm Water Management
Completion Date:	**On-going, Two (2) Basins per year-Unable to complete due to budgetary restrictions**
Jurisdiction:	Horry County

Action: Update the Emergency generator capacity for Town Hall/Police Station	
Category:	Emergency Services
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 4 & 8
Priority:	High
Funding Source:	General Fund, Local Funds
Price Range:	$5,000 - $8,000
Responsibility:	Town of Aynor
Completion Date:	**January 2010**
Jurisdiction:	Town of Aynor

WORKING DRAFT

Action: Extend water lines to install 4" water meter on Grand Strand Water & Sewer lines to provide alternative water source in the event of emergencies	
Category:	Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	High
Funding Source:	HMGP, PDM, FEMA
Price Range:	$25,000
Responsibility:	Bucksport Water System
Completion Date:	**2010**
Jurisdiction:	Bucksport Water System

Action: Provide auxiliary power to well #6 located in Jordanville area of Horry County	
Category:	Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	2 & 5
Priority:	High
Funding Source:	HMGP, PDM, FEMA
Price Range:	$20,000
Responsibility:	Bucksport Water System
Completion Date:	**2010**
Jurisdiction:	Bucksport Water System

WORKING DRAFT

Action: Retrofit all covered devices, which holds all well controls and chlorine equipment	
Category:	Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	High
Funding Source:	HMGP, PDM, FEMA
Price Range:	$25,000
Responsibility:	Bucksport Water System
Completion Date:	**2010**
Jurisdiction:	Bucksport Water System

Action: Provide wind proofing of critical water treatment plants, sewer treatment plants and administrative offices	
Category:	Property Protection
Hazard:	Hurricane, Tornado, Severe Thunderstorm & Wind
Goal(s) Addressed:	1, 2, 4 & 5
Priority:	High
Funding Source:	Local Government, FEMA, PDM, HMGP
Price Range:	$150,000
Responsibility:	Grand Strand Water & Sewer Authority
Completion Date:	**2009**
Jurisdiction:	Grand Strand Water & Sewer Authority

WORKING DRAFT

Action: Provide emergency bypass pumping capability at critical sewer pumping stations	
Category:	Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 4 &5
Priority:	High
Funding Source:	Local Government, FEMA, PDM, HMGP
Price Range:	$300,000
Responsibility:	Grand Strand Water & Sewer Authority
Completion Date:	**June 2010**
Jurisdiction:	Grand Strand Water & Sewer Authority

Action: Provide emergency stand-by electrical power for emergency operation center	
Category:	Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 4 & 5
Priority:	High
Funding Source:	Local Government, FEMA, PDM, HMGP
Price Range:	$225,000
Responsibility:	Grand Strand Water & Sewer Authority
Completion Date:	**June 2010**
Jurisdiction:	Grand Strand Water & Sewer Authority

WORKING DRAFT

Action: Increase the sizes of post for the back stops and other field equipment form the existing 3" diameter to 4" to comply with NEPA and other laws	
Category:	Property Protection
Hazard:	Hurricane, Severe Thunderstorms, Winds, Storm Surge & Tornados
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	Low
Funding Source:	FEMA, HMGP, PDM
Price Range:	Open
Responsibility:	Horry County School District
Completion Date:	**December 2010**
Jurisdiction:	Horry County School District

Action: Hold a hazard mitigation seminar for the community residents, including information on preparedness for all hazards significant to Horry County	
Category:	Public Awareness
Hazard:	All Hazards
Goal(s) Addressed:	1, 3 & 5
Priority:	Low
Funding Source:	General Fund, PDM, HMGP, FMA
Price Range:	$10,000
Responsibility:	Horry County Storm Water Management
Completion Date:	**2008**
Jurisdiction:	Horry County

WORKING DRAFT

Action: Install electrical surge protection devices on essential electrical equipment	
Category:	Property Protection
Hazard:	Lightning
Goal(s) Addressed:	5 & 8
Priority:	Low
Funding Source:	HMGP, PDM, Local Funds
Price Range:	
Responsibility:	Horry County Emergency Management
Completion Date:	**2008**
Jurisdiction:	Horry County

Action: Identify buildings and facilities that must remain operable during and following and earthquake event	
Category:	Property Protection
Hazard:	Earthquake
Goal(s) Addressed:	5 & 8
Priority:	Low
Funding Source:	HMGP, PDM, Local Funds
Price Range:	
Responsibility:	Horry County Emergency Management
Completion Date:	**2008**
Jurisdiction:	Horry County

WORKING DRAFT

Action: Purchase library books and materials to educate children on natural hazards and how to be prepared	
Category:	Public Information & Awareness
Hazard:	All Hazards
Goal(s) Addressed:	3, 4 & 8
Priority:	High
Funding Source:	FEMA, Grant Funding, HMGP
Price Range:	$500.00
Responsibility:	Horry County School District
Completion Date:	**2007-Monitored Annually**
Jurisdiction:	Horry County School District

Action: Create a program to perform condition assessments annually of ditches, canals and storm sewer systems	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	2, 5 & 7
Priority:	High
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	
Responsibility:	Horry County Storm Water Management
Completion Date:	**2007-Monitored Annually**
Jurisdiction:	Horry County

WORKING DRAFT

Action: Provide full coverage for cell phone service in ML Brown Public Safety Building	
Category:	Emergency Services
Hazard:	All Hazards
Goal(s) Addressed:	4
Priority:	High
Funding Source:	By Cellular Provider (SunCom)
Price Range:	
Responsibility:	Horry County Emergency Management & Maintenance
Completion Date:	**2007**
Jurisdiction:	Horry County

Action: Improve mechanical maintenance program	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	1, 2, 5 & 7
Priority:	Moderate
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	
Responsibility:	Horry County Storm Water Management
Completion Date:	**2007**
Jurisdiction:	Horry County

WORKING DRAFT

Action: Improve chemical vegetation control programs	
Category:	Prevention
Hazard:	Flooding
Goal(s) Addressed:	2, 5 & 7
Priority:	Moderate
Funding Source:	SCEMD, HMGP, FEMA, SW Utility Fee
Price Range:	
Responsibility:	Horry County Storm Water Management
Completion Date:	**2007**
Jurisdiction:	Horry County

Action: Acquire a Weather Monitoring System	
Category:	Property Protection
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 4, 5, 7 & 8
Priority:	High
Funding Source:	HMGP, PDM, FEMA
Price Range:	$742,539
Responsibility:	Town of Surfside Beach
Completion Date:	**December 2007**
Jurisdiction:	Town of Surfside Beach

WORKING DRAFT

Action: Provide updated weather radios for schools and municipal buildings	
Category:	Emergency Services
Hazard:	All Hazards
Goal(s) Addressed:	1, 2, 4, 5 & 8
Priority:	High
Funding Source:	PDM, HMGP, SCEMD, NWS
Price Range:	$100.00
Responsibility:	Aynor Police Department
Completion Date:	**2006**
Jurisdiction:	Town of Aynor

Action: Compile Tsunami hazard information	
Category:	Prevention
Hazard:	Tsunami
Goal(s) Addressed:	4, 5, 7 & 8
Priority:	Low
Funding Source:	HMGP, NWS
Price Range:	$1,000.00
Responsibility:	Horry County Emergency Management
Completion Date:	**2006**
Jurisdiction:	Horry County

WORKING DRAFT

Action: The Conway wastewater treatment plant, located near the Waccamaw river, has a part of the treatment process wastewater sludge holding ponds. During and after Hurricane Floyd, the river floodwaters rose above the dike and flooded the sludge holding ponds. As a result wastewater sludge was washed into the Waccamaw River. The action purposed is to elevate the dike surrounding these retention ponds to a height that would minimize the potential for the release of wastewater sludge into the Waccamaw River	
Category:	Property Protection & Natural Resource Protection
Hazard:	Flooding/NFIP
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	High
Funding Source:	State Govt, Grant Funding, Local Govt or PDM
Price Range:	$50,000
Responsibility:	Grand Strand Water & Sewer Authority
Completion Date:	**May 2006**
Jurisdiction:	Grand Strand Water & Sewer Authority

Action: Perform maintenance on storm surge retention wall and raise central office equipment at Garden City Remote	
Category:	Property Protection
Hazard:	Hurricane, Flooding & Storm Surge
Goal(s) Addressed:	1, 5 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$250,000
Responsibility:	HTC-Network Engineering
Completion Date:	**December 2019 cancel 2020 due to being phased out**
Jurisdiction:	Horry Telephone Cooperative

WORKING DRAFT

Action: Raise USAM at 1601 Yaupon Drive S Myrtle Beach to an adequate height for minimizing impact from storm surge or flooding	
Category:	Property Protection
Hazard:	Hurricane, Flooding, Storm Surge & Lightning
Goal(s) Addressed:	1, 5 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$75,000
Responsibility:	HTC-Plant Operations & Network Engineering
Completion Date:	**December 2019 cancel 2020 due to being phased out**
Jurisdiction:	Horry Telephone Cooperative

Action: Install surge suppression equipment in all locations providing telecommunications. (i.e.-central offices and remotes)	
Category:	Property Protection
Hazard:	Lightning
Goal(s) Addressed:	1, 4, 5, 6 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$75,000
Responsibility:	HTC-Plant Operations & Network Engineering
Completion Date:	**December 2019 completed by the 2020 update**
Jurisdiction:	Horry Telephone Cooperative

WORKING DRAFT

Action: Raise USAM at 403 Unit 2, 19th Ave N Myrtle Beach To an adequate height for minimizing impact from storm surge or flooding.	
Category:	Property Protection
Hazard:	Hurricane, Flooding, Storm Surge & Lightning
Goal(s) Addressed:	1, 5 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$75,000
Responsibility:	HTC-Plant Operations & Network Engineering
Completion Date:	**December 2019 cancelled at the 2020 update**
Jurisdiction:	Horry Telephone Cooperative

Action: Survey and remove any trees or weak shrubs adjacent to any roadway or power lines to prevent road blockages or power outages as a result of a storm	
Category:	Prevention
Hazard:	Hurricane, Tornado, Winter Storm & Thunderstorm/Wind
Goal(s) Addressed:	1, 2, 5 & 7
Priority:	Moderate
Funding Source:	City of Loris
Price Range:	$5,000
Responsibility:	City of Loris
Completion Date:	**Continuous-Reviewed and updated on an annual basis Completed at the 2020 update**
Jurisdiction:	City of Loris

WORKING DRAFT

Action: Relocation of City of Conway Emergency Operations Command Center to a new centrally located & elevated structure	
Category:	Emergency Services
Hazard:	All Hazards
Goal(s) Addressed:	2 & 4
Priority:	High
Funding Source:	General Fund
Price Range:	
Responsibility:	City of Conway
Completion Date:	**9/1/2014**
Jurisdiction:	City of Conway

WORKING DRAFT

Non-Participating Jurisdictions

Action: Install riser extensions to raise lift stations / electrified panels	
Category:	Property Protection
Hazard:	Flooding, Hurricane & Storm Surge
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$300,000
Responsibility:	Little River Water & Sewerage Company, Inc.
Completion Date:	Fall 2010
Jurisdiction:	Little River Water & Sewerage Company, Inc.

Action: Install watertight manhole covers	
Category:	Prevention
Hazard:	Flooding, Hurricane & Storm Surge
Goal(s) Addressed:	1, 2 & 5
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$25,000
Responsibility:	Little River Water & Sewerage Company, Inc.
Completion Date:	2010
Jurisdiction:	Little River Water & Sewerage Company, Inc.

WORKING DRAFT

Action: Provide emergency pump by-pass connection for water booster pump stations	
Category:	Property Protection
Hazard:	Hurricane, Tornado, Earthquake, Wildfire & Lightning
Goal(s) Addressed:	2 & 5
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$30,000
Responsibility:	Little River Water & Sewerage Company, Inc.
Completion Date:	2011
Jurisdiction:	Little River Water & Sewerage Company, Inc.

Action: Measures to retrofit sanitary pump stations for flood damage prevention	
Category:	Property Protection
Hazard:	Hurricane, Flood & Storm Surge
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$1,100,000
Responsibility:	Little River Water & Sewerage Company, Inc.
Completion Date:	2013
Jurisdiction:	Little River Water & Sewerage Company, Inc.

WORKING DRAFT

Action: Provide auxiliary power supply at important sewer lift station sites	
Category:	Property Protection
Hazard:	Hurricane, Tornado, Earthquake, Wildfire, Lightning, Severe Thunderstorm & Wind
Goal(s) Addressed:	2 & 5
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$200,000
Responsibility:	Little River Water & Sewerage Company, Inc.
Completion Date:	2011
Jurisdiction:	Little River Water & Sewerage Company, Inc.

Action: Wind proofing of critical water, sewer and administrative facilities	
Category:	Property Protection
Hazard:	Hurricane, Severe Thunderstorm & Wind
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	$20,000
Responsibility:	Little River Water & Sewerage Company, Inc.
Completion Date:	2010
Jurisdiction:	Little River Water & Sewerage Company, Inc.

WORKING DRAFT

Action: Acquire easements surrounding water/sewer facilities from willing and voluntary property owners in order to provide buffer from potential wildfire or falling trees	
Category:	Property Protection
Hazard:	Wildfire, Severe Thunderstorm & Wind
Goal(s) Addressed:	1, 2, 5 & 8
Priority:	Moderate
Funding Source:	FEMA, HMGP, PDM
Price Range:	N/A
Responsibility:	Little River Water & Sewerage Company, Inc.
Completion Date:	Continuous-reviewed and updated on an annual basis
Jurisdiction:	Little River Water & Sewerage Company, Inc.

WORKING DRAFT

5. PLAN MAINTENANCE PROCEDURES

During the 2020 final update meeting, the Mitigation Planning Task Force discussed the current update & maintenance procedure. Members of the Planning Task Force liked the current method for updating the plan and the meeting schedule and as result no changes occurred to this section.

The Horry County Mitigation Planning Task Force has developed a method to ensure that regular reviews and updates of the Hazard Mitigation Plan occur. The Horry County Mitigation Coordinator will be responsible for updating the public and the Mitigation Task Force of any changes to the requirements of the plan. The Mitigation Task Force will meet quarterly (4 times per year) in conjunction with the Local Emergency Planning Committee (LEPC) to monitor and evaluate the plan. Since the last update we have meet four times each year in conjunction with the LEPC. Those dates are available upon request. At each quarterly meeting the progress of the mitigation strategies will be evaluated. All goals will be reviewed to determine their relevance and effectiveness in light of changes within the county, state or federal policies. The jurisdictions/agencies responsible for the various implementation actions will report on the status of their projects and will include which implementation processes worked well, any difficulties encountered, and if the actions failed. This process has worked well in the past and we plan on continuing with this type of maintenance. During the COVID environment of 2020, more virtual technology was utilized for communication as congregate meetings were deemed unsafe. Members of the Mitigation Task Force maintained contact through emails, phone conferences and WebEx meetings.

The Horry County Mitigation Task Force consists of members from the jurisdictions included in this plan as well as representatives from the special purpose districts mentioned in the plan. The Mitigation Task Force will meet in June of every year or post disaster (regardless of Presidential Declaration) to update the Mitigation plan and activities associated with the Plan if necessary. The Task Force will accept the recommendations from the LEPC concerning the risk assessment portion of the plan to determine if the information needs to be updated or modified. Horry County Emergency Management will be responsible for completing the updates based on the recommendations from the Mitigation Task Force.

Updates to the Horry County Mitigation plan will be complete in 2020. The Mitigation Task Force will be responsible for completing updates based on task force meetings and LEPC meetings during those 5 years. Horry County Emergency Management staff will update the mitigation plan and submit to the State Hazard Mitigation Officer. If no changes are necessary, the State Hazard Mitigation Officer will be given a justification of this determination.

5.1 PREVIOUS UPDATE INCLUSION

The previous update conducted in 2015 has been included in several new plan developments. Horry County Emergency Management used the Horry County Multijurisdictional All-Hazards Mitigation plan to help develop their Riverine & Coastal Flood Annex. It was used to update the Tsunami Annex as well as identify the need for additional shelter capacity in the County based on population growth. The updated plan was used to help facilitate involvement and growth in the CRS program for many jurisdictions that participate and often referenced in the ongoing development of the County Flood Resiliency Plan. The plan was even solicited for help in two other jurisdictions which have their own stand-alone mitigation plan.

WORKING DRAFT

5.2 IMPLEMENTATION THROUGH EXISTING PROGRAMS

During the 2020 re-write of the plan no significant changes were made on the implementation of the plan. Horry County will distribute one hard copy to each jurisdiction once approval occurs and each jurisdiction will be responsible for the implementation of the plan in the community or jurisdiction.

Each of the jurisdictions in Horry County utilizes a variety of ordinances, policies and plans to guide and control development. These ordinances, policies and plans as identified in this plan in Section 2 vary from jurisdiction to jurisdiction. After each jurisdiction officially adopts the Hazard Mitigation Plan, these existing mechanisms will have hazard mitigation strategies integrated into them, as they are applicable to the ordinance, policy, and plan. The Horry County All-Hazards Mitigation Plan will be available on the Horry County Government website at www.horrycounty.org, and also at the Horry County Emergency Management Office at 2560 Main Street, Conway. In addition as previously mentioned, each jurisdiction will receive a hard copy of the plan upon approval for implementation and thus it would also be available for public review.

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

This plan has been incorporated into Horry County's Comprehensive Plan. The local government has reviewed our hazard assessment and incorporated into their plans as well. The chart below details where each participation jurisdiction will conduct implementation in the current plans.

Jurisdiction	Comprehensive Plan	Emergency Response Plan	Water System Standards & Spec Plan	Riverine & Coastal Flood Annex
Horry County	X			X
Bucksport Water System		X		
City of Conway	X			
City of Loris	X			
Grand Strand Water & Sewer			X	
Horry County School District	X			
Horry Electric Cooperative		X		
Horry Telephone Cooperative		X		
Murrells Inlet/Garden City Fire District		X		
Town of Aynor	X			
Town of Atlantic Beach	X			
Town of Briarcliffe Acres	X			
Town of Surfside Beach	X			

WORKING DRAFT

Moving forward during the plan maintenance cycle, the Mitigation Planning Task Force will work to integrate hazard mitigation goals and actions into the general operations of the participating jurisdictions. The Mitigation Planning Task Force will work with each jurisdiction to identify opportunities as outlined below:

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

5.3 CONTINUED PUBLIC INVOLVEMENT

During the 2020 update the Mitigation Planning Task Force discussed this item and felt that the current public outreach opportunities were both beneficial and sufficient to allow for and encourage public input.

The Horry County Mitigation Planning Task Force is dedicated to continuing public involvement with the Mitigation plan and the activities that will be implemented. The Plan has been created with great input from the LEPC, and the goal is to provide public opportunities on a regular basis to facilitate the continued involvement. The Horry County Government website will contain information on how to obtain and review copies of the plan and any proposed changes to the plan.

The Mitigation Task Force will meet once per year in July. The Mitigation Planning Task Force will continue to attend open public meetings utilizing the established LEPC quarterly meetings throughout the year. These meetings will be sent out to all media by the Horry County Public Information Office and advertised in the local newspaper and the county website as open public meetings. In addition to continued meetings, the Hazard Mitigation Plan will be catalogued and kept on hand at all the public libraries in the county. Copies of the plan will also be kept and available for public review during the regular business hours at the Horry County Emergency Management Office.

WORKING DRAFT

6. TABS

Listed below are the tabs as mentioned in the previous sections of the plan. The tabs include the meeting agendas, sign in sheets and questionnaire. At the very end of this section you will find the resolutions of adoptions by all the participating jurisdictions.

TAB 1 June 8, 2020 Virtual Meeting Sign In
TAB 2 July 9, 2020 Virtual Meeting Sign In
TAB 3 August _____, 2020 Public Input Announcement
TAB 4 August 20, 2020 Virtual Meeting Sign In
TAB 5 Horry County Hazard Mitigation Questionnaire
TAB 6 Resolutions

WORKING DRAFT