



# PAMLICO SOUND Regional Hazard Mitigation Plan



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## TABLE OF CONTENTS

|       |  |           |
|-------|--|-----------|
| 1     | INTRODUCTION.....                                | 1         |
| 1.1   | <b>Background .....</b>                          | <b>1</b>  |
| 1.2   | <b>Purpose and Authority .....</b>               | <b>2</b>  |
| 1.3   | <b>Scope .....</b>                               | <b>2</b>  |
| 1.4   | <b>References .....</b>                          | <b>3</b>  |
| 1.5   | <b>Plan Organization.....</b>                    | <b>4</b>  |
| 2     | PLANNING PROCESS.....                            | 5         |
| 2.1   | <b>Purpose and Vision .....</b>                  | <b>5</b>  |
| 2.2   | <b>What’s Changed in the Plan .....</b>          | <b>6</b>  |
| 2.3   | <b>Preparing the Plan .....</b>                  | <b>7</b>  |
| 2.3.1 | Phase I - Planning Process.....                  | 8         |
| 2.3.2 | Phase II - Risk Assessment.....                  | 10        |
| 2.3.3 | Phase III - Mitigation Strategy.....             | 10        |
| 2.3.4 | Phase IV - Plan Maintenance.....                 | 10        |
| 2.4   | <b>Hazard Mitigation Planning Committee.....</b> | <b>11</b> |
| 2.5   | <b>Meetings and Workshops.....</b>               | <b>17</b> |
| 2.6   | <b>Involving the Public.....</b>                 | <b>18</b> |
| 2.7   | <b>Outreach Efforts.....</b>                     | <b>19</b> |
| 2.8   | <b>Involving the Stakeholders.....</b>           | <b>20</b> |
| 2.9   | <b>Documentation of Plan Progress .....</b>      | <b>20</b> |
| 3     | PLANNING AREA PROFILE.....                       | 26        |
| 3.1   | <b>Regional Characteristics .....</b>            | <b>26</b> |
| 3.1.1 | Geography.....                                   | 26        |
| 3.1.2 | Climate.....                                     | 30        |
| 3.1.3 | Natural Resources.....                           | 30        |
| 3.2   | <b>Beaufort County .....</b>                     | <b>32</b> |
| 3.2.1 | Hydrology.....                                   | 32        |
| 3.2.2 | Parks and Open Space .....                       | 34        |
| 3.2.3 | Demographics.....                                | 34        |
| 3.2.4 | Housing Characteristics.....                     | 39        |

3.2.5 Wages, Employment and Industry ..... 39

3.2.6 Historic Properties .....41

3.2.7 Land Development Trends .....41

**3.3 Carteret County .....45**

3.3.1 Hydrology..... 45

3.3.2 Parks and Open Space ..... 48

3.3.3 Demographics..... 48

3.3.4 Housing Characteristics..... 53

3.3.5 Wages, Employment and Industry ..... 54

3.3.6 Historic Properties ..... 55

3.3.7 Land Development Trends..... 56

**3.4 Craven County ..... 63**

3.4.1 Hydrology..... 63

3.4.2 Parks and Open Space ..... 65

3.4.3 Demographics..... 65

3.4.4 Housing Characteristics..... 69

3.4.5 Wages, Employment and Industry ..... 69

3.4.6 Historic Properties .....71

3.4.7 Land Development Trends .....72

**3.5 Pamlico County ..... 76**

3.5.1 Hydrology..... 76

3.5.2 Parks and Open Space ..... 78

3.5.3 Demographics..... 78

3.5.4 Housing Characteristics..... 82

3.5.5 Wages, Employment and Industry ..... 82

3.5.6 Historic Properties ..... 84

3.5.7 Land Development Trends..... 84

**4 RISK ASSESSMENT .....88**

**4.1 Overview .....88**

**4.2 Hazard Identification .....89**

**4.3 Risk Assessment Methodology & Assumptions .94**

**4.4 Asset Inventory .....98**

4.4.1 Population..... 98

4.4.2 Property ..... 99

4.4.3 Critical Infrastructure & Key Resources and High Potential Loss Properties.....100

4.4.4 Agriculture .....108

**4.5 Hazard Profiles, Analysis, and Vulnerability .....109**

4.5.1 Dam & Levee Failure.....109

4.5.2 Drought.....122

4.5.3 Earthquake.....133

4.5.4 Excessive Heat.....150

4.5.5 Flooding.....160

4.5.6 Hurricanes & Coastal Hazards .....202

4.5.7 Severe Winter Weather .....234

4.5.8 Tornadoes & Thunderstorms.....241

4.5.9 Wildfire .....282

4.5.10 Infectious Disease .....301

4.5.11 Cyber Threat .....311

**4.6 Conclusions on Hazard Risk..... 316**

**5 CAPABILITY ASSESSMENT ..... 318**

**5.1 Overview ..... 318**

**5.2 Conducting the Capability Assessment ..... 318**

**5.3 Capability Assessment Findings ..... 319**

5.3.1 Planning and Regulatory Capability.....319

5.3.2 Administrative and Technical Capability .....343

5.3.3 Fiscal Capability.....346

5.3.4 Education and Outreach Capability .....348

5.3.5 Mitigation Capability .....350

5.3.6 Political Capability.....351

5.3.7 Local Self-Assessment Rating .....351

**5.4 Conclusions on Local Capability ..... 353**

**6 MITIGATION STRATEGY .....355**

**6.1 Goals and Objectives..... 355**

6.1.1 Coordination with Other Planning Efforts.....355

6.1.2 Goal Setting.....356

6.1.3 Resulting Goals and Objectives.....356

**6.2 Identification and Analysis of Mitigation Activities ..... 357**

6.2.1 Prioritization Process.....357

**7 MITIGATION ACTION PLANS.....359**

**8 PLAN MAINTENANCE..... 390**

**8.1 Implementation .....390**

8.1.1 Mitigation Action Plan Implementation .....390

8.1.2 Plan Integration.....390

**8.2 Monitoring, Evaluation, and Enhancement ..... 394**

8.2.1 Role of HMPC in Implementation, Monitoring and Maintenance.....394

8.2.2 Maintenance Schedule .....394

8.2.3 Maintenance Evaluation Process ..... 395

**8.3 Continued Public Involvement ..... 396**

**9 PLAN ADOPTION ..... 397**

**ANNEX A BEAUFORT COUNTY ..... 439**

**A.1 Asset Inventory ..... 439**

**A.2 Risk Assessment ..... 465**

A.2.1 Flooding ..... 465

A.2.2 Wildfire ..... 489

**A.3 Mitigation Strategy ..... 501**

**ANNEX B CARTERET COUNTY ..... 508**

**B.1 Asset Inventory ..... 508**

**B.2 Risk Assessment ..... 544**

B.2.1 Flooding ..... 544

B.2.2 Wildfire ..... 581

**B.3 Mitigation Strategy ..... 593**

**ANNEX C CRAVEN COUNTY ..... 602**

**C.1 Asset Inventory ..... 602**

**C.2 Risk Assessment ..... 629**

C.2.1 Flooding ..... 629

C.2.2 Wildfire ..... 656

**C.3 Mitigation Strategy ..... 668**

**ANNEX D PAMLICO COUNTY..... 674**

**D.1 Asset Inventory..... 674**

**D.2 Risk Assessment ..... 692**

D.2.1 Flooding..... 692

D.2.2 Wildfire ..... 721

**D.3 Mitigation Strategy.....733**

**APPENDIX A PLAN REVIEW TOOL..... A.1**

**APPENDIX B PLANNING PROCESS**

**DOCUMENTATION.....B.1**

**B.1 Planning Step 1: Organize to Prepare the Plan.. B.1**

**B.2 Planning Step 2: Involve the Public.....B.28**

**APPENDIX C MITIGATION ALTERNATIVES .....C.1**

**C.1 Categories of Mitigation Measures Considered C.1**

**C.2 Alternative Mitigation Measures per Category . C.1**

C.2.1 Preventative and Regulatory Measures..... C.2

C.2.2 Property Protection Measures..... C.5

C.2.3 Natural Resource Protection..... C.9

C.2.4 Emergency Services Measures..... C.13

C.2.5 Structural Projects..... C.16

C.2.6 Public Information and Outreach ..... C.18

**APPENDIX D REFERENCES..... D.1**

# 1 INTRODUCTION

Section 1 provides a general introduction to hazard mitigation and an introduction to the Pamlico Sound Regional Hazard Mitigation Plan. This section contains the following subsections:

- 1.1 Background
  - 1.2 Purpose and Authority
  - 1.3 Scope
  - 1.4 References
  - 1.5 Plan Organization
- 

## 1.1 BACKGROUND

This document comprises a Hazard Mitigation Plan for the Pamlico Sound Region of North Carolina.

Each year in the United States, natural and human-caused hazards take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters because additional expenses incurred by insurance companies and non-governmental organizations are not reimbursed by tax dollars. Many natural hazards are predictable, and much of the damage caused by hazard events can be reduced or even eliminated.

Hazards are a natural part of the environment that will inevitably continue to occur, but there is much we can do to minimize their impacts on our communities and prevent them from resulting in disasters. Every community faces different hazards, has different resources to draw upon in combating problems, and has different interests that influence the solutions to those problems. Because there are many ways to deal with hazards and many agencies that can help, there is no one solution for managing or mitigating their effects. Planning is one of the best ways to develop a customized program that will mitigate the impacts of hazards while accounting for the unique character of a community.

A well-prepared hazard mitigation plan will ensure that all possible activities are reviewed and implemented so that the problem is addressed by the most appropriate and efficient solutions. It can also coordinate activities with each other and with other goals and activities, preventing conflicts and reducing the costs of implementing each individual activity. This plan provides a framework for all interested parties to work together toward mitigation. It establishes the vision and guiding principles for reducing hazard risk and proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.

In an effort to reduce the nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) to invoke new and revitalized approaches to mitigation planning. Section 322 of DMA 2000 emphasizes the need for state and local government entities to closely coordinate on mitigation planning activities and makes the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP), the Building Resilient Infrastructure and Communities (BRIC) program, and the Flood Mitigation Assistance (FMA) Program, all of which are administered by the Federal Emergency Management Agency (FEMA) under the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next disaster strikes.

This plan was prepared in coordination with FEMA Region IV and the North Carolina Division of Emergency Management (NCEM) to ensure that it meets all applicable federal and state planning requirements. A Local Mitigation Plan Review Tool, found in Appendix A, provides a summary of FEMA’s current minimum standards of acceptability and notes the location within this plan where each planning requirement is met.

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## 1.2 PURPOSE AND AUTHORITY

This plan was developed in a joint and cooperative manner by members of a Hazard Mitigation Planning Committee (HMPC) which included representatives of County, City, and Town departments, federal and state agencies, citizens, and other stakeholders. This plan will ensure all jurisdictions in the Pamlico Sound Region remain eligible for federal disaster assistance including FEMA HMGP, PDM, and FMA programs.

This plan has been prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act or the Act), 42 U.S.C. 5165, enacted under Section 104 of the Disaster Mitigation Act of 2000, (DMA 2000) Public Law 106-390 of October 30, 2000, as implemented at CFR 201.6 and 201.7 dated October 2007.

This plan will be adopted by each participating jurisdiction in accordance with standard local procedures. Copies of adoption resolutions are provided in Section 9 Plan Adoption.

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## 1.3 SCOPE

This document comprises a Regional Hazard Mitigation Plan for the Pamlico Sound Region. The planning area includes all incorporated municipalities and unincorporated areas in the region. All participating jurisdictions are listed in Table 1.1.

**Table 1.1 - Participating Jurisdictions in the Pamlico Sound Regional Hazard Mitigation Plan**

|                        |                   |                 |
|------------------------|-------------------|-----------------|
| <b>Beaufort County</b> |                   |                 |
| Washington             | Aurora            | Bath            |
| Belhaven               | Chocowinity       | Pantego         |
| Washington Park        |                   |                 |
| <b>Carteret County</b> |                   |                 |
| Atlantic Beach         | Beaufort          | Bogue           |
| Cape Carteret          | Cedar Point       | Emerald Isle    |
| Indian Beach           | Morehead City     | Newport         |
| Peletier               | Pine Knoll Shores |                 |
| <b>Craven County</b>   |                   |                 |
| Havelock               | New Bern          | Bridgeton       |
| Cove City              | Dover             | River Bend      |
| Trent Woods            | Vanceboro         |                 |
| <b>Pamlico County</b>  |                   |                 |
| Alliance               | Arapahoe          | Bayboro         |
| Grantsboro             | Mesic             | Minnesott Beach |
| Oriental               | Stonewall         | Vandemere       |

The Pamlico Sound Region followed the planning process prescribed by FEMA, and this plan was developed under the guidance of a HMPC comprised of representatives of County, City, and Town



departments; citizens; and other stakeholders. The HMPC conducted a risk assessment that identified and profiled hazards that pose a risk to the planning area, assessed the planning area's vulnerability to these hazards, and examined each participating jurisdiction's capabilities in place to mitigate them.

The plan evaluates and prioritizes hazards for the planning area using a Priority Risk Index, as determined through the risk and vulnerability assessments. Hazards are categorized as "low," "moderate," or "high" priority, however, mitigation strategies are identified for all profiled hazards. The hazards profiled in this plan are:

- Dam & Levee Failure
- Drought
- Earthquake
- Excessive Heat
- Flooding
- Hurricanes & Coastal Hazards
- Severe Winter Storm
- Tornadoes & Thunderstorms
- Wildfire
- Infectious Disease
- Cyber Threat

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## 1.4 REFERENCES

The following FEMA guides and reference documents were used to prepare this document:

- FEMA 386-1: Getting Started. September 2002.
- FEMA 386-2: Understanding Your Risks: Identifying Hazards and Estimating Losses. August 2001.
- FEMA 386-3: Developing the Mitigation Plan. April 2003.
- FEMA 386-4: Bringing the Plan to Life. August 2003.
- FEMA 386-5: Using Benefit-Cost Review in Mitigation Planning. May 2007.
- FEMA 386-6: Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning. May 2005.
- FEMA 386-7: Integrating Manmade Hazards into Mitigation Planning. September 2003.
- FEMA 386-8: Multijurisdictional Mitigation Planning. August 2006.
- FEMA 386-9: Using the Hazard Mitigation Plan to Prepare Successful Mitigation Projects. August 2008.
- FEMA. Local Mitigation Planning Handbook. March 2013.
- FEMA. Local Mitigation Plan Review Guide. October 1, 2011.
- FEMA National Fire Incident Reporting System 5.0: Complete Reference Guide. January, 2008.
- FEMA Hazard Mitigation Assistance Unified Guidance. June 1, 2010.
- FEMA. Integrating Hazard Mitigation into Local Planning: Case Studies and Tools for Community Officials. March 1, 2013.
- FEMA. Mitigation Ideas. A Resource for Reducing Risk to Natural Hazards. January 2013.

Additional sources used in the development of this plan, including data compiled for the Hazard Identification and Risk Assessment, are listed in Appendix D.

## **1.5 PLAN ORGANIZATION**

The Pamlico Sound Regional Hazard Mitigation Plan is organized into the following sections:

- Section 1: Introduction
- Section 2: Planning Process
- Section 3: Planning Area Profile
- Section 4: Hazard Identification & Risk Assessment
- Section 5: Capability Assessment
- Section 6: Mitigation Strategy
- Section 7: Mitigation Action Plans
- Section 8: Plan Implementation and Maintenance
- Section 9: Plan Adoption
- Appendix A: Local Plan Review Tool
- Appendix B: Planning Process Documentation
- Appendix C: Mitigation Alternatives
- Appendix D: References

## 2 PLANNING PROCESS

**Requirement §201.6(b): An open public involvement process is essential to the development of an effective plan. To develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:**

- 1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- 2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and nonprofit interests to be involved in the planning process; and
- 3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

**Requirement §201.6(c)(1): The plan shall include the following:**

- 1) Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

This section provides a review of the planning process followed for the development of the Pamlico Sound Regional Hazard Mitigation Plan. It consists of the following sub-sections:

- 2.1 Purpose and Vision
- 2.2 What’s Changed in the Plan
- 2.3 Preparing the Plan
- 2.4 Hazard Mitigation Planning Committee
- 2.5 Meetings and Workshops
- 2.6 Involving the Public
- 2.7 Outreach Efforts
- 2.8 Involving the Stakeholders
- 2.9 Documentation of Plan Progress

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### 2.1 PURPOSE AND VISION

As defined by FEMA, “hazard mitigation” means any sustained action taken to reduce or eliminate the long-term risk to life and property from a hazard event. Hazard mitigation planning is the process through which hazards are identified, likely impacts determined, mitigation goals set, and appropriate mitigation strategies determined, prioritized, and implemented.

The purpose of the Pamlico Sound Regional Hazard Mitigation Plan is to identify, assess, and mitigate hazard risk to better protect the people and property within the Region from the effects of natural and human-caused hazards. This plan documents progress on existing hazard mitigation planning efforts, updates the previous plan to reflect current conditions in the Region including relevant hazards and vulnerabilities, increases public education and awareness about the plan and planning process, maintains grant eligibility for participating jurisdictions, maintains compliance with state and federal requirements for local hazard mitigation plans, and identifies and outlines strategies the Region’s participating jurisdictions will use to decrease vulnerability and increase resiliency.

During the development of the 2020 Pamlico Sound Regional Hazard Mitigation Plan, the Hazard Mitigation Planning Committee (HMPC) met to discuss their vision for the Region in terms of what the successful implementation of the plan would achieve, what outcomes the plan would generate, and what

the Region will look like in five years. This vision statement, presented below, remains relevant to define and guide the planning process for this plan update and the region’s approach to hazard mitigation.

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*The vision of the Pamlico Sound Regional Hazard Mitigation Plan is to establish sound public policy to protect life, property, and the quality of the natural environment; to reduce risk and prevent loss from future hazard events.*

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## 2.2 WHAT’S CHANGED IN THE PLAN

This plan is an update to the 2020 Pamlico Sound Regional Hazard Mitigation Plan, which included participation from all jurisdictions involved in this plan update: Beaufort, Carteret, Craven, and Pamlico Counties. The previous plan was approved by FEMA on June 16, 2020.

This hazard mitigation plan update involved a comprehensive review and update of each section of the existing plan and an assessment of the success of the Counties and participating municipalities in evaluating, monitoring and implementing the mitigation strategy outlined in their existing plans. Only the information and data still valid from the existing plans was carried forward as applicable into this update. The following requirements were addressed during the development of this regional plan:

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

Section 4.2 provides a comparison of the hazards addressed in the 2023 State of North Carolina Hazard Mitigation Plan and the 2020 Pamlico Sound Regional Hazard Mitigation Plan and provides the final decision made by the HMPC as to which hazards should be included in this 2025 plan update.

In addition to the specific changes in hazard analyses identified in Section 4.2, the following items were also addressed in this 2025 plan update:

- GIS was used, to the extent data allowed, to analyze the priority hazards as part of the vulnerability assessment.
- Assets at risk to identified hazards were identified by property type and values of properties based on North Carolina Emergency Management’s IRISK Database.
- A discussion on climate change and its projected effect on specific hazards was included in each hazard profile in the risk assessment.
- The discussion on growth and development trends was enhanced utilizing 2017 American Community Survey data.
- An effort was made to provide underserved communities and vulnerable populations with opportunities to participate in and contribute to the plan update process. Engagement opportunities were provided through the public survey, the plan website, and stakeholder coordination.

- Enhanced public outreach and agency coordination efforts were conducted throughout the plan update process in order to meet the more rigorous requirements of the 2017 CRS Coordinator’s Manual, in addition to DMA requirements.

## 2.3 PREPARING THE PLAN

The planning process for preparing the Pamlico Sound Regional Hazard Mitigation Plan was based on DMA planning requirements and FEMA’s associated guidance. This guidance is structured around a four-phase process:

- 1 Planning Process;
- 2 Risk Assessment;
- 3 Mitigation Strategy; and
- 4 Plan Maintenance.

Into this process, the planning consultant integrated a more detailed 10-step planning process used for FEMA’s Community Rating System (CRS) and Flood Mitigation Assistance (FMA) programs. Thus, the modified 10-step process used for this plan meets the requirements of six major programs: FEMA’s Hazard Mitigation Grant Program (HMGP); Building Resilient Infrastructure & Communities (BRIC) Program; CRS Program; FMA Program; Severe Repetitive Loss Program; and new flood control projects authorized by the U.S. Army Corps of Engineers.

Table 2.1 shows how the 10-step CRS planning process aligns with the four phases of hazard mitigation planning pursuant to the Disaster Mitigation Act of 2000.

**Table 2.1 - Mitigation Planning and CRS 10-Step Process Reference Table**

| DMA Process                            | CRS Process                                      |
|--|--|
| <b>Phase I - Planning Process</b>      |  |
| §201.6(c)(1)                           | Step 1. Organize to Prepare the Plan             |
| §201.6(b)(1)                           | Step 2. Involve the Public                       |
| §201.6(b)(2) & (3)                     | Step 3. Coordinate                               |
| <b>Phase II - Risk Assessment</b>      |  |
| §201.6(c)(2)(i)                        | Step 4. Assess the Hazard                        |
| §201.6(c)(2)(ii) & (iii)               | Step 5. Assess the Problem                       |
| <b>Phase III - Mitigation Strategy</b> |  |
| §201.6(c)(3)(i)                        | Step 6. Set Goals                                |
| §201.6(c)(3)(ii)                       | Step 7. Review Possible Activities               |
| §201.6(c)(3)(iii)                      | Step 8. Draft an Action Plan                     |
| <b>Phase IV - Plan Maintenance</b>     |  |
| §201.6(c)(5)                           | Step 9. Adopt the Plan                           |
| §201.6(c)(4)                           | Step 10. Implement, Evaluate and Revise the Plan |

In addition to meeting DMA and CRS requirements, this plan also meets the recommended steps for developing a Community Wildfire Protection Plan (CWPP). Table 2.2 below outlines the recommended CWPP process and the CRS step and sections of this plan that meet each step.

**Table 2.2 - Community Wildfire Protection Plan Process Reference**

| CWPP Process             | CRS Step | Fulfilling Plan Section            |
|--------------------------|----------|------------------------------------|
| Convene decision makers  | Step 1   | Section 2 - HMPC                   |
| Involve Federal agencies | Step 3   | Section 2 - Involving Stakeholders |

**SECTION 2: PLANNING PROCESS**

| <b>CWPP Process</b>   | <b>CRS Step</b>  | <b>Fulfilling Plan Section</b>   |
|---|------------------|--|
| Engage interested parties (such as community representatives)   | Step 1, 2, and 3 | Section 2 – HMPC, Involving the Public, Involving Stakeholders         |
| Establish a community base map  |                  | Section 4 – Wildfire   |
| Develop a community risk assessment, including fuel hazards, risk of wildfire occurrence, homes, business and essential infrastructure at risk, other community values at risk, local preparedness, and firefighting capability | Step 4 and 5     | Section 4 – Wildfire<br>Section 6 – Capability                         |
| Establish community hazard reduction priorities and recommendations to reduce structural ignitability   | Step 6, 7, and 8 | Section 6 – Mitigation Strategy<br>Section 7 – Mitigation Action Plans |
| Develop an action plan and assessment strategy  | Step 8 and 10    | Section 7 – Mitigation Action Plans<br>Section 8 – Plan Maintenance    |
| Finalize the CWPP   | Step 9           | Section 9 – Plan Adoption  |

The process followed for the preparation of this plan, as outlined in Table 2.1 above, is as follows:

**2.3.1 PHASE I – PLANNING PROCESS**

**Planning Step 1: Organize to Prepare the Plan**

With the Region’s commitment to participate in the DMA planning process, community officials worked to establish the framework and organization for development of the plan. An initial meeting was held with key community representatives to discuss the organizational aspects of the plan development process. The County Emergency Managers led the Region’s effort to reorganize and coordinate for the plan update. Consultants from WSP and ESP assisted by leading the Region through the planning process and preparing the plan document.

**Planning Step 2: Involve the Public**

Public involvement in the development of the plan was sought using various methods, as detailed in Section 2.6.

**Planning Step 3: Coordinate**

The HMPC that was formed for the 2020 Pamlico Sound Regional Hazard Mitigation Plan was reconvened for this plan update. Membership was updated where necessary to ensure each community had adequate representation from staff and stakeholders. More details on the HMPC are provided in Section 2.4. Stakeholder coordination was incorporated into the formation of the HMPC and was sought through additional outreach methods. These efforts are detailed in Section 2.8 and documentation of additional stakeholder outreach is provided in Appendix B.

**Coordination with Other Community Planning Efforts and Hazard Mitigation Activities**

In addition to stakeholder involvement, coordination with other community planning efforts was also seen as paramount to the success of this plan. Mitigation planning involves identifying existing policies, tools, and actions that will reduce a community’s risk and vulnerability to hazards. Communities in the Pamlico Sound Region use a variety of planning mechanisms, such as comprehensive plans, subdivision regulations, building codes, and ordinances to guide growth and development. Integrating existing planning efforts, mitigation policies, and action strategies into this plan establishes a credible and comprehensive plan that ties into and supports other community programs. As detailed in These and other documents were reviewed and considered, as appropriate, during the collection of data to support the planning process and plan development. Data from these sources was incorporated into the risk and

**SECTION 2: PLANNING PROCESS**

vulnerability assessment and was used in determining the capability of each jurisdiction to implement certain mitigation strategies. The Risk Assessment is presented in Section 4 and the Capability Assessment can be found in Section 5.

Table 2.3, the development of this plan incorporated information from existing plans, studies, reports, and initiatives as well as other relevant data from neighboring communities and other jurisdictions.

These and other documents were reviewed and considered, as appropriate, during the collection of data to support the planning process and plan development. Data from these sources was incorporated into the risk and vulnerability assessment and was used in determining the capability of each jurisdiction to implement certain mitigation strategies. The Risk Assessment is presented in Section 4 and the Capability Assessment can be found in Section 5.

**Table 2.3 - Summary of Existing Studies and Plans Reviewed**

| Resource Referenced   | Use in this Plan  |
|---|---|
| Local Comprehensive Plans   | Where available, each community's comprehensive plan was referenced to develop the Planning Area Profile in Section 3, with future land use maps and descriptions incorporated into community annexes. Local land use and comprehensive plans were also used to develop Mitigation Action Plans in Section 7 and were referenced in the Capability Assessment in Section 5. |
| Local Ordinances (Flood Damage Prevention Ordinances, Subdivision Ordinances, Zoning Ordinances, etc)   | Local ordinances were referenced in the Capability Assessment in Section 5 and where applicable for updates or enforcement in Mitigation Action Plans in Section 7.   |
| Flood Insurance Study Reports for Beaufort, Carteret, Craven, and Pamlico Counties and Incorporated Areas   | FIS reports were referenced in the preparation of the flood hazard profile in Section 4.  |
| Pamlico Sound Regional Hazard Mitigation Plan, 2020   | The previous plan was referenced in compiling the Hazard Identification and Risk Assessment in Section 4 and in reporting on implementation status and developing the Mitigation Action Plans in Section 2 and Section 7, respectively.   |
| Resilient Coastal Communities Program (RCCP) Resilience Strategies (Beaufort County, Aurora, Belhaven, Washington, Washington Park, Beaufort, Cape Carteret, Pine Knoll Shores, Craven County, Pamlico County, Vandemere) | These plans were referenced in the Capability Assessment in Section 5 and for development of the Mitigation Action Plans in Section 7.  |
| Eastern Carolina Regional Resilience Portfolio; Mid-East Regional Resilience Portfolio  | These plans were referenced in the Capability Assessment in Section 5 and for development of the Mitigation Action Plans in Section 7.  |
| North Carolina State Hazard Mitigation Plan, 2023   | The State plan was referenced in compiling the Hazard Identification and Risk Assessment in Section 4.  |

### 2.3.2 PHASE II – RISK ASSESSMENT

#### **Planning Steps 4 and 5: Identify/Assess the Hazard and Assess the Problem**

The HMPC completed a comprehensive effort to identify, document, and profile all hazards that have, or could have, an impact on the planning area. Geographic information systems (GIS) were used to display, analyze, and quantify hazards and vulnerabilities. A draft of the risk and vulnerability assessment was made available on the plan website for the HMPC, stakeholders, and the public to review and comment.

The HMPC also conducted a capability assessment to review and document the planning area’s current capabilities to mitigate risk from and vulnerability to hazards. By collecting information about existing government programs, policies, regulations, ordinances, and emergency plans, the HMPC could assess those activities and measures already in place that contribute to mitigating some of the risks and vulnerabilities identified. A more detailed description of the risk assessment process and the results are included in Section 4 Risk Assessment.

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### 2.3.3 PHASE III – MITIGATION STRATEGY

#### **Planning Steps 6 and 7: Set Goals and Review Possible Activities**

WSP facilitated a discussion with the HMPC to review and revise the planning goals and objectives and a comprehensive range of mitigation alternatives. The HMPC also discussed a method of selecting and defending recommended mitigation actions using a series of selection criteria. This information is included in Section 6 Mitigation Strategy.

#### **Planning Step 8: Draft an Action Plan**

A complete first draft of the plan was prepared based on input from the HMPC regarding the draft risk assessment and the goals and activities identified in Planning Steps 6 and 7. This draft was shared for HMPC, stakeholder, and public review and comment via the plan website. HMPC, public, and stakeholder comments were integrated into the final draft for NCEM and FEMA Region 4 to review and approve, contingent upon final adoption by all participating jurisdictions.

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### 2.3.4 PHASE IV – PLAN MAINTENANCE

#### **Planning Step 9: Adopt the Plan**

To secure buy-in and officially implement the plan, the plan will be reviewed and adopted by all participating jurisdictions. Resolutions will be provided in Section 9.

#### **Planning Step 10: Implement, Evaluate and Revise the Plan**

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning. Up to this point in the planning process, the HMPC’s efforts have been directed at researching data, coordinating input from participating entities, and developing mitigation actions. Section 8 Plan Maintenance provides an overview of the strategy for plan implementation and maintenance and outlines the method and schedule for monitoring, updating, and evaluating the plan. The Section also discusses integrating the plan into existing planning mechanisms and how to continue public involvement.



## **2.4 HAZARD MITIGATION PLANNING COMMITTEE**

This hazard mitigation plan was developed under the guidance of a planning committee comprising representatives of County, City, and Town departments, federal and state agencies, citizens, and stakeholders.

To form the HMPC, the County Emergency Managers coordinated with County, City, and Town officials to designate representatives for each jurisdiction. Each community was asked to designate a primary and secondary contact for the HMPC. Communities were also asked to identify local stakeholder representatives to participate on the HMPC alongside the local staff to improve the integration of stakeholder input into the plan. Table 2.4 lists the membership of the HMPC, the agencies and jurisdictions that members represented, and members' attendance at meetings. Many of these representatives were involved in the development of the 2020 Hazard Mitigation Plan and have since participated in regular plan reviews and maintenance. For this plan update, an effort was made to involve additional stakeholders who could represent or coordinate with underserved communities and vulnerable populations.

**SECTION 2: PLANNING PROCESS**

**Table 2.4 - Hazard Mitigation Planning Committee**

| Jurisdiction    | Representative      | Agency   | Position/Title or *Stakeholder                      | HMPC Meeting Attendance |       |       |       |
|-----------------|---------------------|--|---|-------------------------|-------|-------|-------|
|                 |                     |  |   | Mtg.1                   | Mtg.2 | Mtg.3 | Mtg.4 |
| Beaufort County | Chris Newkirk       | Beaufort County Emergency Services                   | Emergency Services Director                         | ✓                       |       |       |       |
| Aurora          | Clif Williams       | Town of Aurora Administration                        | Mayor   |                         |       |       |       |
| Bath            | Elna Lewis          | Town of Bath Administration                          | Town Clerk  |                         |       |       |       |
| Belhaven        | Lynn Davis          | Town of Belhaven Administration                      | Town Manager  | ✓                       | ✓     |       | ✓     |
| Belhaven        | Ricky Credle        | Town of Belhaven Administration                      | Mayor   |                         |       |       |       |
| Belhaven        | Myers Williams      | N/A  | Resident*   |                         |       |       |       |
| Belhaven        | Nelson Guy          | N/A  | Resident*   |                         |       |       |       |
| Chocowinity     | James H. Mobley Jr. | Town of Chocowinity Administration                   | Mayor   |                         |       |       |       |
| Pantego         | Chad Keech          | Town of Pantego Administration                       | Commissioner  |                         |       |       |       |
| Washington      | Jonathan Russell    | City of Washington Administration                    | City Manager  |                         | ✓     |       |       |
| Washington      | Mike Dail           | Washington Community & Cultural Services Dept.       | Director  | ✓                       |       |       |       |
| Washington      | Steve Fuchs         | N/A  | Resident*   |                         |       |       |       |
| Washington      | Donna Pittman       | N/A  | Resident*   |                         |       |       |       |
| Washington Park | April Alligood      | Town of Washington Park Administration               | Town Clerk  |                         |       |       | ✓     |
| Washington Park | Thomas B. Richter   | Town of Washington Park Administration               | Mayor   |                         |       |       |       |
| Washington Park | Seth Laughlin       | N/A  | Resident*   |                         |       |       |       |
| Washington Park | Dylan Bowen         | N/A  | Resident*   |                         |       |       |       |
| Carteret County | Gregg Hartman       | Carteret County Planning Department                  | Assistant Planning Director                         | ✓                       | ✓     |       | ✓     |
| Carteret County | Aaron Stryker       | Carteret County Emergency Services Dept.             | Emergency Services Emergency Management Coordinator |                         | ✓     | ✓     | ✓     |
| Carteret County | John Rouse          | N/A  | Planning Board Member*                              | ✓                       |       |       |       |
| Carteret County | Drew Kennedy        | N/A  | Planning Board Member*                              | ✓                       |       |       |       |
| Atlantic Beach  | Jennifer Ansell     | Atlantic Beach Planning, Zoning, & Inspections Dept. | Planning and Development Director                   | ✓                       |       |       |       |
| Atlantic Beach  | Elisabeth Webster   | Atlantic Beach Planning, Zoning, & Inspections Dept. | Planner II  | ✓                       |       |       | ✓     |
| Atlantic Beach  | Sharron Wilson      | N/A  | Planning Board Member/Citizen*                      | ✓                       |       |       |       |

**SECTION 2: PLANNING PROCESS**

| Jurisdiction      | Representative   | Agency   | Position/Title or *Stakeholder  | HMPC Meeting Attendance |       |       |       |
|-------------------|------------------|--|---------------------------------|-------------------------|-------|-------|-------|
|                   |                  |  |                                 | Mtg.1                   | Mtg.2 | Mtg.3 | Mtg.4 |
| Atlantic Beach    | Austin Waters    | N/A  | Resident*                       |                         |       |       |       |
| Beaufort          | Michelle Eitner  | Beaufort Planning & Inspections Dept.          | Town Planner                    |                         | ✓     | ✓     | ✓     |
| Beaufort          | Jeremy Ganey     | Beaufort Planning & Inspections Dept.          | Zoning Manager                  |                         |       | ✓     |       |
| Beaufort          | Sarah Spiegler   | NC Sea Grant                                   | Resident*                       | ✓                       | ✓     |       |       |
| Beaufort          | Becky Bowler     | N/A  | Planning Board Member*          |                         |       |       |       |
| Bogue             | Shawne Southard  | Town of Bogue Administration                   | Town Clerk                      |                         |       |       | ✓     |
| Cape Carteret     | Julie Shambaugh  | Cape Carteret Development Services             | Town Planner                    | ✓                       | ✓     |       |       |
| Cape Carteret     | Frank Rush       | Town of Cape Carteret Administration           | Town Manager                    |                         |       |       |       |
| Cedar Point       | David Reif       | Town of Cedar Point Administration             | Town Manager                    | ✓                       | ✓     |       | ✓     |
| Cedar Point       | Alisha Dahart    | Town of Cedar Point Code Enforcement           | Code Enforcement Officer        | ✓                       | ✓     |       | ✓     |
| Cedar Point       | Frankie Winberry | N/A  | Citizen*                        |                         | ✓     |       |       |
| Emerald Isle      | Chris Seaberg    | Emerald Isle Planning & Inspections            | Planning Director               | ✓                       | ✓     | ✓     |       |
| Emerald Isle      | Greg Hayes       | Emerald Isle Planning & Inspections            | Assistant Town Planner          |                         |       |       |       |
| Indian Beach      | Tim White        | Town of Indian Beach Administration            | Town Manager                    | ✓                       | ✓     | ✓     | ✓     |
| Morehead City     | Sandi Watkins    | Morehead City Planning & Inspections           | Planning & Inspections Director | ✓                       | ✓     | ✓     |       |
| Morehead City     | Annie Bunnell    | Morehead City Planning & Inspections           | Planner                         | ✓                       | ✓     | ✓     | ✓     |
| Morehead City     | Diana Tootle     | N/A  | Vice-Chair MHC Planning Board*  |                         | ✓     | ✓     |       |
| Morehead City     | Bill Stompf      | N/A  | Vice-Chair MHC ZBA*             | ✓                       | ✓     |       |       |
| Newport           | John Nevel       | Newport Planning & Inspections Dept.           | Planning & Inspections Director | ✓                       |       |       |       |
| Newport           | William Shanahan | Town of Newport Administration                 | Town Manager                    |                         |       |       |       |
| Peletier          | Dale Sowers      | Town of Peletier Administration                | Mayor                           |                         |       |       |       |
| Pine Knoll Shores | Charlie Rocci    | Pine Knoll Shores Planning & Inspections Dept. | Planning Administrator          | ✓                       | ✓     | ✓     | ✓     |
| Pine Knoll Shores | Jason Baker      | Pine Knoll Shores Fire                         | Fire Chief                      | ✓                       | ✓     | ✓     |       |
| Pine Knoll Shores | Paul Payne       | N/A  | Citizen*                        | ✓                       |       |       |       |
| Pine Knoll Shores | Jimmie Beckom    | N/A  | Citizen*                        | ✓                       |       |       |       |
| Craven County     | Chad Strawn      | Craven County Planning Dept.                   | Planning Director               | ✓                       | ✓     | ✓     |       |
| Craven County     | Jason Frederick  | Craven County Planning Dept.                   | Asst. Planning Director         | ✓                       |       | ✓     | ✓     |
| Craven County     | Daniel Hill, Jr. | N/A  | Planning Board Chairman*        |                         |       |       |       |
| Craven County     | Tom Lelli        | N/A  | Planning Board Vice-chairman*   |                         |       |       |       |

**SECTION 2: PLANNING PROCESS**

| Jurisdiction   | Representative        | Agency   | Position/Title or *Stakeholder | HMPC Meeting Attendance |       |       |       |
|----------------|-----------------------|--|--------------------------------|-------------------------|-------|-------|-------|
|                |                       |  |                                | Mtg.1                   | Mtg.2 | Mtg.3 | Mtg.4 |
| Bridgeton      | William Howard        | Bridgeton Planning & Zoning Dept                     | Zoning Administrator           |                         |       |       | ✓     |
| Cove City      | Dred C. Mitchell, Jr. | Town of Cove City Administration                     | Mayor                          |                         |       |       |       |
| Dover          | Randy Mitchell        | Town of Dover Administration                         | Mayor                          |                         |       |       |       |
| Havelock       | Katrina Marshall      | Havelock Planning & Inspections Dept.                | Planning Director              | ✓                       |       | ✓     |       |
| Havelock       | Sue Steinhauser       | Havelock Planning & Inspections Dept.                | Code Enforcement Officer       |                         | ✓     | ✓     |       |
| Havelock       | Ernest Cutler, Sr.    | N/A  | Planning Board Chairman*       | ✓                       |       |       |       |
| Havelock       | Iris Wooliever        | N/A  | Planning Board Vice-chair*     |                         |       |       |       |
| New Bern       | Foster Hughes         | City of New Bern Administration                      | City Manager                   |                         | ✓     |       |       |
| New Bern       | Brenda E. Blanco      | City of New Bern Administration                      | City Clerk                     |                         |       |       |       |
| River Bend     | John Kirkland         | Town of River Bend Administration                    | Mayor                          | ✓                       |       |       |       |
| River Bend     | Delane Jackson        | Town of River Bend Administration                    | Town Manager                   | ✓                       | ✓     | ✓     | ✓     |
| River Bend     | Bob Edwards           | N/A  | Resident*                      | ✓                       | ✓     | ✓     | ✓     |
| River Bend     | Egon Lippert          | N/A  | Resident*                      |                         | ✓     | ✓     | ✓     |
| Trent Woods    | Mike Haber            | Trent Woods Public Works                             | Maintenance Director           |                         |       | ✓     |       |
| Vanceboro      | Beverly Drake         | Town of Vanceboro Administration                     | Town Clerk                     |                         |       |       |       |
| Pamlico County | Tim Buck              | Pamlico County Administration                        | County Manager                 | ✓                       |       |       |       |
| Pamlico County | Beth Bucksot          | Pamlico County Planning & Economic Development Dept. | Economic Development Director  |                         | ✓     |       | ✓     |
| Pamlico County | Marvella Jones        | N/A  | Citizen*                       |                         |       |       |       |
| Pamlico County | Paul Slobodian        | N/A  | Citizen*                       |                         |       |       |       |
| Alliance       | Linda Marshall        | Town of Alliance Administration                      | Town Clerk                     |                         |       |       | ✓     |
| Alliance       | Andy Grove            | Town of Alliance Administration                      | Mayor                          |                         |       |       |       |
| Alliance       | Kenny Riggs           | N/A  | Citizen*                       |                         |       |       |       |
| Alliance       | Sherry Riggs          | N/A  | Citizen*                       |                         |       |       |       |
| Arapahoe       | David Peterson        | Town of Arapahoe Administration                      | Town Clerk/Finance Officer     |                         |       |       |       |
| Bayboro        | Susan Kachur          | Town of Bayboro Administration                       | City Clerk/Finance Officer     |                         |       |       |       |
| Bayboro        | Mark Howell           | Town of Bayboro Administration                       | Maintenance Supervisor         |                         |       |       |       |
| Bayboro        | Joan Arnette          | N/A  | Citizen*                       |                         |       |       |       |
| Bayboro        | Rebecca H. Ackiss     | Hollowell & Hollowell                                | Office Manager/Legal Asst.*    |                         |       |       |       |
| Grantsboro     | Ray Lewis             | Town of Grantsboro Administration                    | Town Clerk                     |                         |       |       | ✓     |
| Mesic          | Violette Ollison      | Town of Mesic Administration                         | Mayor                          |                         |       |       |       |

**SECTION 2: PLANNING PROCESS**

| Jurisdiction    | Representative       | Agency                                 | Position/Title or *Stakeholder    | HMPC Meeting Attendance |       |       |       |
|-----------------|----------------------|--|-----------------------------------|-------------------------|-------|-------|-------|
|                 |                      |  |                                   | Mtg.1                   | Mtg.2 | Mtg.3 | Mtg.4 |
| Minnesott Beach | Carolyn Braly        | Town of Minnesott Beach Administration | Town Manager                      | ✓                       |       |       |       |
| Minnesott Beach | Denise Burns         | Town of Minnesott Beach Administration | Town Clerk                        |                         |       |       |       |
| Minnesott Beach | Tim Fowler           | N/A                                    | Resident*                         |                         |       |       |       |
| Minnesott Beach | Wilfred DeMoranville | N/A                                    | Resident*                         |                         |       |       |       |
| Oriental        | Diane H. Miller      | Town of Oriental Administration        | Town Manager                      | ✓                       |       | ✓     |       |
| Oriental        | Ann Rost             | Town of Oriental Administration        | Board of Adjustment Member        | ✓                       | ✓     |       |       |
| Oriental        | Bill Marlowe         | N/A                                    | Resident*                         | ✓                       |       |       |       |
| Oriental        | Bill Kepp            | N/A                                    | Resident*                         | ✓                       | ✓     | ✓     |       |
| Oriental        | Dan Allen            | N/A                                    | Resident*                         | ✓                       |       |       |       |
| Stonewall       | Marie Spain          | Town of Stonewall Administration       | Town Clerk                        |                         |       |       |       |
| Stonewall       | Charles Alexander    | Town of Stonewall Administration       | Mayor                             |                         |       |       |       |
| Stonewall       | Jim Spain            | N/A                                    | Citizen*                          |                         |       |       |       |
| Stonewall       | Irene Wright         | N/A                                    | Citizen*                          |                         |       |       |       |
| Vandemere       | Judy Thaanum         | Town of Vandemere Administration       | Commissioner                      | ✓                       |       |       |       |
| Vandemere       | Sue Britt            | Town of Vandemere Administration       | Town Clerk                        |                         |       |       |       |
| Vandemere       | Will Sanderson       | N/A                                    | Citizen*                          | ✓                       |       |       |       |
| Vandemere       | Scott Harvey         | N/A                                    | Citizen*                          | ✓                       |       |       |       |
| N/A             | Chris Crew           | NCEM                                   | Mitigation Plans Manager*         | ✓                       |       | ✓     | ✓     |
| N/A             | John Mello           | NCEM                                   | Mitigation Planner*               |                         |       | ✓     | ✓     |
| N/A             | Carl Baker           | NCEM                                   | Mitigation Planner*               |                         | ✓     |       |       |
| N/A             | Greg Hardee          | NCEM                                   | Area 3 Coordinator*               |                         |       |       |       |
| N/A             | Charles Tripp        | NCEM                                   | Area 2 Coordinator*               | ✓                       |       |       |       |
| N/A             | Dianne Curtis        | NCEM                                   | Eastern Branch Manager*           |                         |       |       |       |
| N/A             | Brad Connell         | NCDEQ                                  | NC Blueprint*                     |                         |       | ✓     | ✓     |
| N/A             | Chris Dreps          | NCDEQ                                  | NC Blueprint*                     |                         |       | ✓     | ✓     |
| N/A             | Holly White          | NCORR                                  | Resilience Planner*               |                         |       | ✓     |       |
| N/A             | Helene Weatherington | NCORR                                  | Resilient Communities Specialist* |                         |       | ✓     |       |

\*Asterisk indicates that the representative is a citizen or outside stakeholder not affiliated with the local government

**SECTION 2: PLANNING PROCESS**

The HMPC led the planning and decision-making efforts throughout the planning process; however, other staff from the participating communities were involved in an advisory role to provide input and local data, review plan drafts, update the status of their respective mitigation actions, and otherwise support the HMPC in this plan update. These were not members of the HMPC. Additional local staff that supported the HMPC are recognized in Table 2.5 below.

**Table 2.5 - Additional Staff Supporting the Planning Process**

| <b>Jurisdiction</b> | <b>Representative</b> | <b>Agency</b>                            | <b>Position/Title</b>           |
|---------------------|-----------------------|--|---------------------------------|
| Beaufort County     | Brian M. Alligood     | Beaufort County Manager's Office         | County Manager                  |
| Beaufort County     | Melissa Beacham       | Beaufort County Emergency Services       | Emergency Management Specialist |
| Beaufort County     | DC Linton             | Beaufort County Emergency Services       | Operations Chief of Fire/EM     |
| Aurora              | Jeff Peed             | Town of Aurora Administration            | Commissioner                    |
| Bath                | James G. Latham       | Town of Bath Administration              | Mayor                           |
| Bath                | Bubs Carson           | Town of Bath Administration              | Town Manager                    |
| Belhaven            | Gloria Rogers         | Town of Belhaven Administration          | Town Clerk                      |
| Cedar Point         | Jayne Beyer           | Town of Cedar Point Administration       | Town Clerk                      |
| Chocowinity         | Kevin Brickhouse      | Chocowinity Public Works Dept.           | Director                        |
| Chocowinity         | Ralph Whitehurst      | Town of Chocowinity Administration       | Chief/Town Manager              |
| Pantego             | Bobbi Jo Ricks        | Town of Pantego Administration           | Town Clerk                      |
| Washington          | Brett Burbage         | Washington Development Services Dept.    | Sr. Building Inspector          |
| Washington Park     | Wade Dale             | Town of Washington Park Administration   | Commissioner                    |
| Carteret County     | Stephen Rea           | Carteret County Emergency Services Dept. | Emergency Services Director     |
| Carteret County     | Cole Barrow           | Carteret County Planning Department      | Planning & Development Planner  |
| Beaufort            | Kyle Garner           | Beaufort Planning & Inspections Dept.    | Planning Director               |
| Bogue               | Robert O'Chat         | Town of Bogue Administration             | Mayor                           |
| Indian Beach        | Stephanie Corman      | Town of Indian Beach Administration      | Town Clerk                      |
| Pine Knoll Shores   | Julie Anderson        | Town of Pine Knoll Shores Administration | Town Manager                    |
| Craven County       | Donnie Lavelle        | Craven County Planning Dept.             | Planner II                      |
| Craven County       | William Flynn         | Craven County Planning Dept.             | Planner I                       |
| Bridgeton           | William Howard        | Bridgeton Planning and Zoning Dept.      | Zoning Administrator            |
| Bridgeton           | Tonya Bell            | Town of Bridgeton Administration         | Town Clerk                      |
| Cove City           | Lydia Parker Monette  | Town of Cove City Administration         | Town Clerk                      |
| Dover               | Diane Pike            | Town of Dover Administration             | Town Clerk                      |
| Trent Woods         | Holly Willis          | Town of Trent Woods Administration       | Town Clerk                      |
| Vanceboro           | Brittany Mumford      | Town of Vanceboro Administration         | Asst. Town Clerk                |
| Pamlico County      | Mark Brewington       | Pamlico County Administration            | Assistant County Manager        |
| Pamlico County      | Melanie Dixon         | Pamlico County Health Department         | Health Director                 |

## SECTION 2: PLANNING PROCESS

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| Jurisdiction    | Representative     | Agency   | Position/Title       |
|-----------------|--------------------|--|----------------------|
| Pamlico County  | Jake Brown         | Pamlico County Planning & Economic Development Dept. | Planner              |
| Pamlico County  | Autumn Hardison    | Pamlico County Emergency Mgmt                        | Operations Assistant |
| Grantsboro      | Ray Poole          | Town of Grantsboro Administration                    | Town Council Member  |
| Minnesott Beach | Carol DeMoranville | Town of Minnesott Beach Administration               | Mayor                |

The formal HMPC meetings followed the CRS 10-step planning process. Agendas, minutes, and sign-in sheets for the HMPC meetings are provided in Appendix B. The meeting dates and topics discussed are summarized in Section 2.5 Meetings and Workshops. All HMPC meetings were open to the public.

The DMA planning regulations and guidance stress that each local government seeking FEMA approval of their mitigation plan must participate in the planning effort in the following ways:

- Participate in the process as part of the HMPC;
- Detail where within the planning area the risk differs from that facing the entire area;
- Identify potential mitigation actions; and
- Formally adopt the plan.

For the Pamlico Sound Regional HMPC, “participation” meant the following:

- Providing facilities for meetings;
- Attending and participating in the HMPC meetings;
- Collecting and providing requested data (as available);
- Managing administrative details;
- Making decisions on plan process and content;
- Identifying mitigation actions for the plan;
- Reviewing and providing comments on plan drafts;
- Informing the public, local officials, and other interested parties about the planning process and providing opportunity for them to comment on the plan;
- Coordinating, and participating in the public input process; and
- Coordinating the formal adoption of the plan by local governing bodies.

Detailed summaries of HMPC meetings are provided under Section 2.5 Meetings and Workshops, including meeting dates, locations, and topics discussed. During the planning process, the HMPC members communicated through face-to-face meetings, email, and telephone conversations. This continued communication ensured that coordination was ongoing throughout the entire planning process even though not all HMPC members could be present at every meeting. Additionally, draft documents were distributed via the plan website so that the HMPC members could easily access and review them and provide comments.

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## 2.5 MEETINGS AND WORKSHOPS

The preparation of this plan required a series of meetings and workshops for facilitating discussion, gaining consensus, and initiating data collection efforts with local government staff, community officials, and other identified stakeholders. More importantly, the meetings and workshops prompted continuous input and feedback from relevant participants throughout the drafting stages of the plan.

Table 2.6 summarizes the key meetings and workshops held by the HMPC during the development of the plan. In many cases, routine discussions and additional meetings were held by local staff to accomplish planning tasks specific to their department or agency. For example, completing the Local Capability Self-Assessment or seeking approval of specific mitigation actions for their department or agency to undertake and include in their Mitigation Action Plan. These meetings were informal and are not documented here.

Public meetings are summarized in subsection 2.6.

**Table 2.6 - Summary of HMPC Meetings**

| Meeting Title                     | Meeting Topic   | Meeting Date     | Meeting Location   |
|-----------------------------------|---|------------------|--|
| HMPC Mtg. #1<br>- Project Kickoff | 1) Introduction to DMA and CRS requirements and the planning process<br>2) Review of HMPC responsibilities and the project schedule                                 | June 12, 2024    | Craven County Cooperative Extension Building, 300 Industrial Dr, New Bern NC 28562 & Microsoft Teams |
| HMPC Mtg. #2                      | 1) Review the draft Hazard Identification & Risk Assessment<br>2) Discuss updates to local capabilities<br>3) Review problem statements and mitigation action ideas | October 29, 2024 | Crystal Coast Civic Center, 3505 Arendell Street, Morehead City, NC 28557 & Microsoft Teams          |
| HMPC Mtg. #3                      | 1) Review draft goals and objectives<br>2) Review mitigation alternatives and draft mitigation strategies   | December 4, 2024 | Microsoft Teams  |
| HMPC Mtg. #4                      | 1) Review the draft Hazard Mitigation Plan<br>2) Solicit comments and feedback  | January 28, 2025 | Microsoft Teams  |

## 2.6 INVOLVING THE PUBLIC

An important component of any mitigation planning process is public participation. Individual citizen and community-based input provides the entire planning team with a greater understanding of local concerns and increases the likelihood of successfully implementing mitigation actions by developing community “buy-in” from those directly affected by the decisions of public officials. As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the hazards present in their community and take the steps necessary to reduce their impact. Public awareness is a key component of any community’s overall mitigation strategy aimed at making a home, neighborhood, school, business, or entire planning area safer from the potential effects of hazards.

Public involvement in the development of the plan was sought using various methods including open public meetings, an interactive plan website, a public participation survey, and by making copies of draft plan documents available for public review online and at government offices. Additionally, all HMPC meetings were made open to the public.

All public meetings were advertised on the plan website, which was shared on local community websites, and on local community websites, where possible. Copies of meeting announcements are provided in Appendix B. The public meetings held during the planning process are summarized in Table 2.7.



**Table 2.7 - Summary of Public Meetings**

| <b>Meeting Title</b> | <b>Meeting Topic</b>   | <b>Meeting Date</b>     | <b>Meeting Location</b> |
|----------------------|--|-------------------------|-------------------------|
| Public Meeting #1    | 1) Introduction to the planning process and project schedule<br>2) Explanation of mitigation<br>3) Review of hazard identification | August 27, 2024<br>6pm  | Microsoft Teams         |
| Public Meeting #2    | 1) Review draft Hazard Mitigation Plan<br>2) Solicit comments and feedback   | January 28, 2025<br>6pm | Microsoft Teams         |

## 2.7 OUTREACH EFFORTS

The HMPC agreed to employ a variety of public outreach methods including established public information mechanisms and resources within the community. Table 2.8 below details public outreach efforts employed during the preparation of this plan.

**Table 2.8 - Public Outreach Efforts**

| <b>Location</b>  | <b>Date</b>          | <b>Event/Message</b>   |
|--|----------------------|--|
| Plan website   | Ongoing              | Meeting announcements, meeting materials, planning resources, and contact information provided to request additional information and/or provide comments |
| Community websites & social media pages & email newsletter | June - August 2024   | Link to the plan website and survey shared to expand reach   |
| Community websites & social media pages                    | August 2024          | Announcements and invitations to attend public meeting #1  |
| Public survey  | June - December 2024 | Survey hosted online and made available via shareable link   |
| Plan website - HIRA draft                                  | October 2024         | Draft HIRA made available for review and comment online  |
| Plan website - Draft Plan                                  | January 2025         | Full draft plan made available for review and comment online   |

Public involvement activities for this plan update included press releases, creation of a website for the plan, a public survey, and the collection of public and stakeholder comments on the draft plan.

A public outreach survey was made available in June 2024 and remained open for response until January 2025. The public survey requested public input on the planning process, risk perception, and the identification of mitigation activities to lessen the impact of future hazard events. The survey is shown in Appendix B. The survey was available online on the plan website and in hard copy. In total, 558 survey responses were received. The following is a list of high-level summary results and analysis derived from survey responses:

- 31% of responses were from residents of Carteret County, 30% were from Pamlico County, 22 were from Craven County, and 12% were from Beaufort County. About 5% of respondents live outside the region but work or recreate in the region.
- 59% of respondents have experienced or been impacted by a hazard or disaster event in the Pamlico Sound region. Of these responses, 72% reference experiences related to hurricanes.

- Concern about the possibility of future hazard events is high. 44% of respondents rated their concern about future hazard impacts in their community at a 5 out of 5. Another 32% rated their concern at 4 out of 5.
- Earthquake and winter storm were largely rated as no risk or low risk to the region. Hurricane, flood, severe weather, extreme heat, and coastal hazards were largely rated as high risk or moderate risk to the region.
- 44% of respondents say their home is located in a floodplain, but 60% indicate they have flood insurance for their home and/or property.
- 61% of respondents report taking actions to protect their home or neighborhood from hazards. Common responses include tree maintenance, generators, hurricane shutters, elevating the house, and on-site drainage work.
- 56% of respondents do not know where to get more information about hazard risk and ways to reduce vulnerability.
- Suggested mitigation measures for local governments to undertake included stormwater improvements, drainage maintenance, tree trimming, development and buildings restrictions and standards, infrastructure protection, and communication of hazard risks and preparedness and response resources.
- Respondents favored emergency services and prevention projects for mitigation.

A complete summary of survey results is provided in Appendix B.

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## 2.8 INVOLVING THE STAKEHOLDERS

In addition to representatives of each participating jurisdiction, the HMPC included a variety of stakeholders so that the committee would involve a variety of perspectives. Some residents and stakeholders were able to represent underserved communities and vulnerable populations. Stakeholders on the HMPC included residents, planning board members, among others. Representatives from North Carolina Emergency Management also attended HMPC meetings. Input from additional stakeholders, including neighboring communities, was solicited through invitation to the public meetings and distribution of the public survey. However, if any additional stakeholders representing other agencies and organizations participated through the public survey, that information is unknown due to the anonymous nature of the survey.

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## 2.9 DOCUMENTATION OF PLAN PROGRESS

Progress on the mitigation strategy developed in the previous plan is documented in this plan update. Table 2.9 below details the status of mitigation actions from the previous plan for each participating jurisdiction. It should be noted that most mitigation actions are multi-jurisdictional and implementation is led at the county level with local support. More detail on actions being carried forward is provided in Section 7: Mitigation Action Plans.

**Table 2.9 – Status of Previous Mitigation Actions**

| Jurisdiction           | Completed | Deleted  | Carried Forward |
|------------------------|-----------|----------|-----------------|
| <b>Beaufort County</b> | <b>0</b>  | <b>0</b> | <b>27</b>       |
| Town of Aurora         | 0         | 0        | 27              |
| Town of Bath           | 0         | 0        | 27              |
| Town of Belhaven       | 0         | 0        | 26              |
| Town of Chocowinity    | 0         | 0        | 27              |

**SECTION 2: PLANNING PROCESS**

| <b>Jurisdiction</b>       | <b>Completed</b> | <b>Deleted</b> | <b>Carried Forward</b> |
|---------------------------|------------------|----------------|------------------------|
| Town of Pantego           | 0                | 0              | 27                     |
| City of Washington        | 0                | 0              | 26                     |
| Town of Washington Park   | 0                | 0              | 26                     |
| <b>Carteret County</b>    | <b>3</b>         | <b>0</b>       | <b>21</b>              |
| Town of Atlantic Beach    | 3                | 0              | 20                     |
| Town of Beaufort          | 3                | 0              | 21                     |
| Town of Bogue             | 3                | 0              | 20                     |
| Town of Cape Carteret     | 3                | 0              | 20                     |
| Town of Cedar Point       | 3                | 0              | 20                     |
| Town of Emerald Isle      | 3                | 0              | 20                     |
| Town of Indian Beach      | 3                | 0              | 20                     |
| Town of Morehead City     | 3                | 0              | 21                     |
| Town of Newport           | 3                | 0              | 20                     |
| Town of Peletier          | 3                | 0              | 20                     |
| Town of Pine Knoll Shores | 3                | 0              | 20                     |
| <b>Craven County</b>      | <b>0</b>         | <b>0</b>       | <b>21</b>              |
| Town of Bridgeton         | 0                | 0              | 17                     |
| Town of Cove City         | 0                | 0              | 17                     |
| Town of Dover             | 0                | 0              | 16                     |
| City of Havelock          | 0                | 0              | 20                     |
| City of New Bern          | 0                | 0              | 20                     |
| Town of River Bend        | 0                | 0              | 20                     |
| Town of Trent Woods       | 0                | 0              | 18                     |
| Town of Vanceboro         | 0                | 0              | 17                     |
| <b>Pamlico County</b>     | <b>0</b>         | <b>0</b>       | <b>14</b>              |
| Town of Alliance          | 0                | 0              | 14                     |
| Town of Arapahoe          | 0                | 0              | 14                     |
| Town of Bayboro           | 0                | 0              | 14                     |
| Town of Grantsboro        | 0                | 0              | 14                     |
| Town of Mesic             | 0                | 0              | 14                     |
| Town of Minnesott Beach   | 0                | 0              | 14                     |
| Town of Oriental          | 0                | 0              | 18                     |
| Town of Stonewall         | 0                | 0              | 14                     |
| Town of Vandemere         | 0                | 0              | 14                     |
| <b>Counties Total</b>     | <b>3</b>         | <b>0</b>       | <b>69</b>              |

Table 2.10 on the following pages details all completed and deleted actions from the 2020 plan.

It should be noted that although many communities have no completed actions removed from their mitigation action plans, this does not convey that mitigation has not been completed. Many actions have been carried forward into this plan update that reflect ongoing implementation and progress achieved or that incorporate revisions to address new priorities. See Section 7: Mitigation Action Plans for status updates on carried forward mitigation actions.

Community capability continues to improve with the implementation of new plans, policies, and programs that help to promote hazard mitigation at the local level. The current state of local capabilities for the participating jurisdictions is captured in Section 5: Capability Assessment. The participating jurisdictions continue to demonstrate their commitment to hazard mitigation and have proven this by

reconvening the HMPC to update this multi-jurisdictional plan and by continuing to involve the public in the hazard mitigation planning process.

Moving forward, information in this plan will be used to help guide and coordinate mitigation activities and decisions for local plans and policies in the future. Proactive mitigation planning will help reduce the cost of disaster response and recovery to communities and their residents by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruptions. This plan identifies activities that can be undertaken by both the public and the private sectors to reduce safety hazards, health hazards, and property damage.

**SECTION 2: PLANNING PROCESS**

**Table 2.10 – Completed and Deleted Actions from the 2020 Pamlico Sound Regional Hazard Mitigation Plan**

| 2020 Action #          | Jurisdictions   | Description  | 2024 Status | Status Comments/Explanation   |
|------------------------|---|--|-------------|---|
| <b>Beaufort County</b> |   |  |             |   |
| n/a                    | n/a   | n/a  | n/a         | <i>Beaufort County and its incorporated communities do not have any completed or deleted actions from the 2020 plan.</i>  |
| <b>Carteret County</b> |   |  |             |   |
| CA1                    | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Address the sheltering needs of County residents. Continue to work on improving the preparedness of all existing shelter facilities, including the installation of on-site generators at all shelter locations. Maintain updated information regarding all shelters on the County website. Continue support of the NC Coastal Region Evacuation and Sheltering (CRES) plan aimed at providing inland sheltering resources for coastal counties and preparation and adoption of a county sheltering plan. | Completed   | Completed in April 2024. Next review will occur in 2026. Carteret County Emergency Services continues to work towards improving emergency shelters and updates to the state CRES plan. A list of shelters is maintained on the County website. Beaufort maintains shelter information on the <a href="#">Town's website</a> . Pine Knoll Shores Emergency Services coordinates with Carteret County Emergency Management in complying with CRES plan. |

**SECTION 2: PLANNING PROCESS**

| 2020<br>Action # | Jurisdictions   | Description  | 2024<br>Status | Status Comments/Explanation   |
|------------------|---|--|----------------|---|
| CA2              | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Provide information regarding evacuation procedures and routes through County and municipal websites, and other methods when feasible. These efforts will involve assisting the Towns of Atlantic Beach, Cape Carteret, Indian Beach, Morehead City, and Pine Knoll Shores with efforts relating to bridge closures and re-entry policies and procedures. As part of these efforts, the County will make handouts available for citizens and visitors outlining evacuation routes and procedures provide education and outreach for implementation of the Know Your Zone initiative. | Completed      | The County maintains up to date evacuation route information on the County website and has educational materials for the Know Your Zone initiative and coordination of re-entry procedures. Beaufort maintains evacuation information on the <a href="#">Hurricane Preparedness/ Flood Information website</a> and provides <a href="#">emergency alerts</a> for evacuation information. Pine Knoll Shores maintains up to date evacuation route information in tandem with County website. Evacuation procedures are covered in the annual hurricane preparedness seminar and distributed on the town email list and social media. |
| CA12             | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Maintain reciprocal mutual aid agreements with all neighboring communities in an effort to ensure adequate fire protection throughout the County. Additionally, all jurisdictions will provide preventive maintenance efforts to ensure the fire hydrants and equipment are working properly.  | Completed      | Completed with the State Wide Mutual Aid Agreement with NC Emergency Management. Cedar Point participates in the statewide agreement. Pine Knoll Shores maintain mutual aid agreements with neighboring communities and update them annually. Beaufort maintains applicable mutual aid agreements and conducts required hydrant and equipment testing.  |

**SECTION 2: PLANNING PROCESS**

| 2020<br>Action #      | Jurisdictions | Description | 2024<br>Status | Status Comments/Explanation   |
|-----------------------|---------------|-------------|----------------|---|
| <b>Craven County</b>  |               |             |                |   |
| <i>n/a</i>            | <i>n/a</i>    | <i>n/a</i>  | <i>n/a</i>     | <i>Craven County and its incorporated communities do not have any completed or deleted actions from the 2020 plan.</i>  |
| <b>Pamlico County</b> |               |             |                |   |
| <i>n/a</i>            | <i>n/a</i>    | <i>n/a</i>  | <i>n/a</i>     | <i>Pamlico County and its incorporated communities do not have any completed or deleted actions from the 2020 plan.</i> |

## 3 PLANNING AREA PROFILE

This section provides an overview of the current conditions and characteristics of the Pamlico Sound Region. As Beaufort, Carteret, Craven, and Pamlico Counties collectively comprise the Pamlico Sound Region, general information such as geography and climate are discussed at the regional scale, while more detailed information is provided for each county and participating municipal jurisdiction. The section is organized into the following sub-sections:

- 3.1 Regional Characteristics
- 3.2 Beaufort County
- 3.3 Carteret County
- 3.4 Craven County
- 3.5 Pamlico County

The regional characteristics section discusses the Region's overall location within North Carolina, as well as significant geographic, transportation, and geologic features. It also provides an overview of average annual climactic conditions, documents the presence of mapped wetlands located throughout each of the participating county jurisdictions, and outlines the presence of threatened and endangered species.

Each of the county profiles contains the following information: an overview of each county's hydrology, a discussion of parks and open space; demographic data for all participating jurisdictions including population counts, racial composition, housing characteristics, and employment and industry statistics; a list of all properties in each participating jurisdiction that are on the National Register of Historic Places; and an overview of land use and development trends in each participating jurisdiction.

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### 3.1 REGIONAL CHARACTERISTICS

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#### 3.1.1 GEOGRAPHY

The Pamlico Sound Region is in eastern North Carolina's Coastal Plain, as shown in Figure 3.1. The Coastal Plain forms the eastern edge of North Carolina, making up about 45% of the state's total land area. It is bounded on the east by the Atlantic Ocean and on the west by the Fall Line, a broad zone where the soft rocks of the Coastal Plain meet the hard crystalline rocks of the Piedmont. The Coastal Plain varies in width from 100 to 140 miles. It rises gently in elevation to the west, from about sea level at the coast to as much as 500 feet in the Sand Hills district.

An abundance of watercourses surround the area, with the Pamlico and Pungo Rivers in Beaufort County and the Neuse River between Craven and Pamlico County. Additionally, there are abundant fishing grounds located within the Atlantic Ocean adjacent to Carteret County. The area is also rich in wildlife refuges, with the Cedar Island National Wildlife Refuge located in Carteret County. The area's countryside is enhanced by streams and brooks, natural lakes and ponds, and swampy woodlands.

The North Carolina Railroad, Norfolk-Southern, and Carolina Coastal Railways run through Beaufort, Carteret, and Craven Counties. Roadway transportation for the area is provided by US Route 17 (running in a north-south direction), 70 and 264 (east-west), and State Highways 24, 32, 33, 43, 45, 55, 58, 92, 94, 99, 304, and 306. General aviation airports in the area include Warren Field in Washington, NC, and the Michael J. Smith Field in Beaufort, NC. Air carrier service is provided by Coastal Carolina Regional



**SECTION 3: PLANNING AREA PROFILE**

Airport in New Bern. The region is also home to two military airfields: Marine Corps Air Station Cherry Point in Havelock and Marine Corps Auxiliary Landing Field Bogue on Bogue Sound.

The Pamlico Sound Region comprises 3,628 square miles of total area, 2,384 square miles of land area, and 1,245 square miles of water, as detailed by participating jurisdiction in Table 3.1.

**Table 3.1 – Pamlico Sound Region Total Land Area**

| <b>Jurisdiction</b>    | <b>Total Area (sq mi)</b> | <b>Land Area (sq mi)</b> | <b>Water Area (sq mi)</b> |
|------------------------|---------------------------|--------------------------|---------------------------|
| <b>Beaufort County</b> | <b>962.9</b>              | <b>832.8</b>             | <b>130.1</b>              |
| Aurora                 | 1.0                       | 0.9                      | 0.1                       |
| Bath                   | 0.9                       | 0.4                      | 0.6                       |
| Belhaven               | 2.1                       | 1.6                      | 0.5                       |
| Chocowinity            | 1.0                       | 1.0                      | -                         |
| Pantego                | 0.8                       | 0.8                      | -                         |
| Washington             | 9.0                       | 8.2                      | 0.8                       |
| Washington Park        | 0.3                       | 0.3                      | -                         |
| Unincorporated Area    | 947.7                     | 819.6                    | 128.1                     |
| <b>Carteret County</b> | <b>1,330.4</b>            | <b>507.6</b>             | <b>822.8</b>              |
| Atlantic Beach         | 2.7                       | 2.3                      | 0.4                       |
| Beaufort               | 7.8                       | 5.1                      | 2.8                       |
| Bogue                  | 3.0                       | 2.8                      | 0.2                       |
| Cape Carteret          | 2.7                       | 2.5                      | 0.2                       |
| Cedar Point            | 2.3                       | 2.2                      | 0.1                       |
| Emerald Isle           | 5.1                       | 5.0                      | 0.1                       |
| Indian Beach           | 1.5                       | 0.6                      | 0.9                       |
| Morehead City          | 10.6                      | 7.4                      | 3.2                       |
| Newport                | 7.8                       | 7.7                      | 0.1                       |
| Peletier               | 3.7                       | 3.6                      | 0.1                       |
| Pine Knoll Shores      | 2.5                       | 2.2                      | 0.3                       |
| Unincorporated Area    | 1,280.8                   | 466.2                    | 814.6                     |
| <b>Craven County</b>   | <b>773.3</b>              | <b>706.6</b>             | <b>66.7</b>               |
| Bridgeton              | 2.1                       | 2.1                      | -                         |
| Cove City              | 0.6                       | 0.6                      | -                         |
| Dover                  | 1.0                       | 1.0                      | -                         |
| Havelock               | 17.6                      | 16.8                     | 0.8                       |
| New Bern               | 29.7                      | 28.4                     | 1.4                       |
| River Bend             | 2.8                       | 2.5                      | 0.2                       |
| Trent Woods            | 3.4                       | 2.9                      | 0.5                       |
| Vanceboro              | 1.7                       | 1.7                      | -                         |
| Unincorporated Area    | 714.4                     | 650.6                    | 63.8                      |
| <b>Pamlico County</b>  | <b>561.6</b>              | <b>336.5</b>             | <b>225.1</b>              |
| Alliance               | 2.0                       | 2.0                      | -                         |
| Arapahoe               | 2.2                       | 2.2                      | -                         |
| Bayboro                | 1.9                       | 1.9                      | -                         |
| Grantsboro             | 3.9                       | 3.9                      | -                         |
| Mesic                  | 1.1                       | 1.0                      | 0.1                       |
| Minnesott Beach        | 3.6                       | 3.5                      | 0.1                       |
| Oriental               | 1.6                       | 1.4                      | 0.2                       |

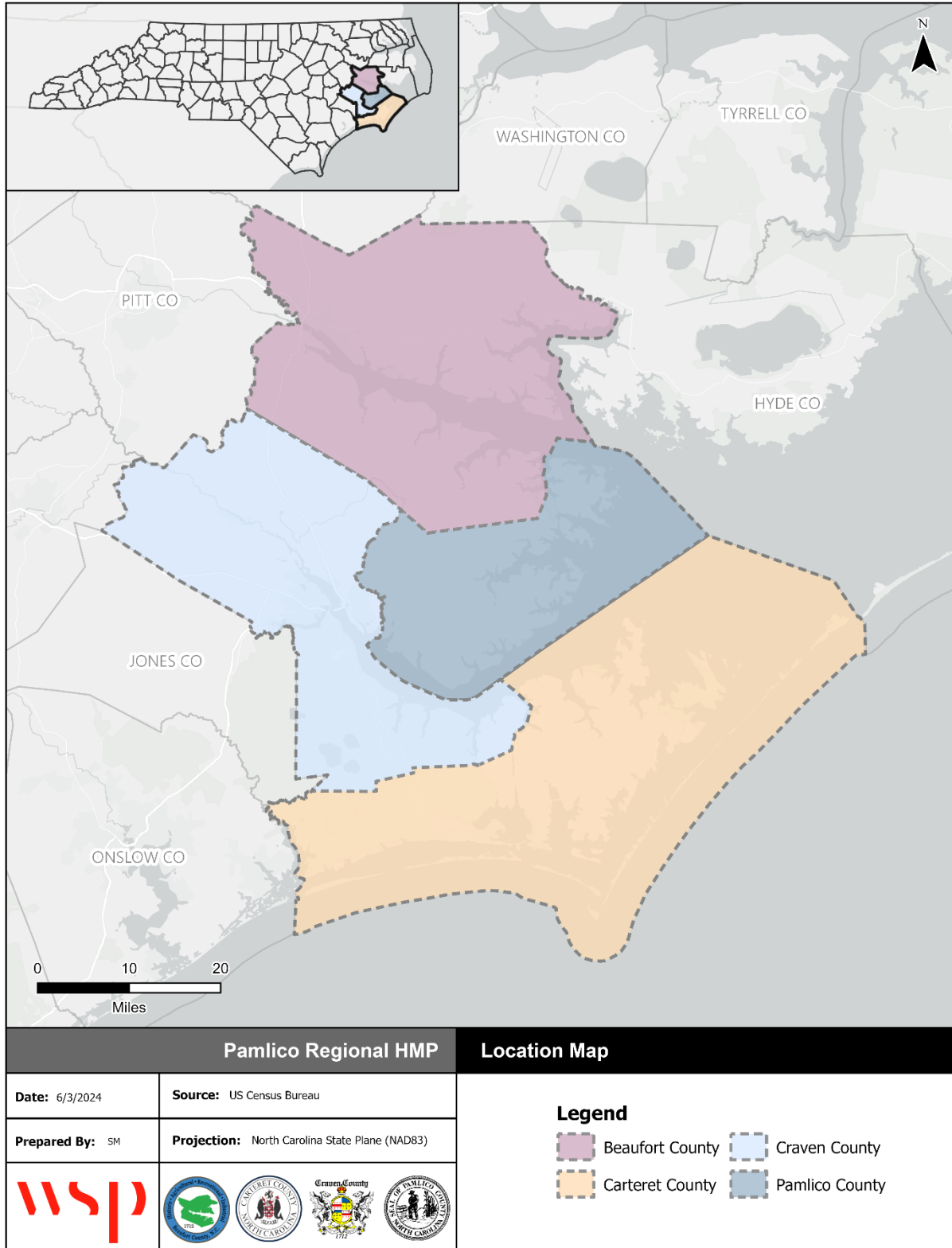
**SECTION 3: PLANNING AREA PROFILE**

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| <b>Jurisdiction</b> | <b>Total Area (sq mi)</b> | <b>Land Area (sq mi)</b> | <b>Water Area (sq mi)</b> |
|---------------------|---------------------------|--------------------------|---------------------------|
| Stonewall           | 2.0                       | 1.7                      | 0.3                       |
| Vandemere           | 1.6                       | 1.5                      | 0.1                       |
| Unincorporated Area | 541.7                     | 317.4                    | 224.3                     |

Source: NC OSBM Municipal and Non-Municipal Land Area as of 2023; County Profiles – Wikipedia as of 2022

Figure 3.1 - Pamlico Sound Region Location Map



Source: U.S. Census Bureau

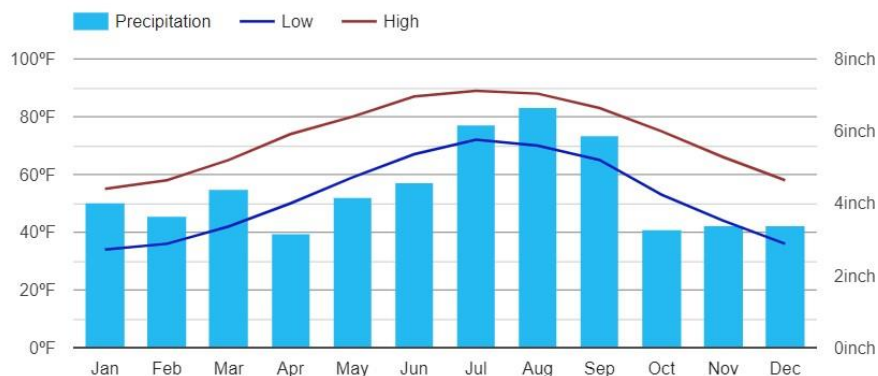
### 3.1.2 CLIMATE

The Pamlico Sound Region is hot and humid in summer, but the coast is frequently cooled by sea breezes. Winter is cool with occasional brief cold spells. Afternoon thunderstorms are the main form of precipitation during the summer, with most summer precipitation occurring in July and August. Precipitation is generally adequate for all crops, and the region benefits by a lengthy growing season.

The average annual temperature is 66.1°F, the average maximum temperature is 71.5°F, and the average minimum temperature is 51.2°F. In winter, the average minimum temperature is 39.5°F. In summer, the average maximum temperature is 86.8°F. Rainfall is usually well distributed throughout the year, with a peak in July through September and an average annual precipitation of 55.32 inches.

Figure 3.2 shows the average monthly temperature and precipitation for a New Bern weather station, which approximates temperature and precipitation of the Region.

**Figure 3.2 - Average Monthly Precipitation**



Source: NOAA

### 3.1.3 NATURAL RESOURCES

#### WETLANDS

According to data from the U.S. Fish and Wildlife Service’s National Wetlands Inventory, there are approximately 555,559 acres of wetlands in the Region. Wetlands areas are shown by type in each county’s annex. Table 3.2 provides a summary of wetland coverage within each County.

**Table 3.2 - Pamlico Sound Region Wetlands Acreage**

| County          | Wetland Acreage | % of Total County Acreage |
|-----------------|-----------------|---------------------------|
| Beaufort County | 112,242         | 18.2%                     |
| Craven County   | 177,350         | 35.8%                     |
| Carteret County | 166,406         | 19.5%                     |
| Pamlico County  | 99,651          | 27.7%                     |
| <b>Total</b>    | <b>555,559</b>  | --                        |

Source: U.S. Fish & Wildlife Service, National Wetlands Inventory

*Natural and Beneficial Wetland Functions:* The benefits of wetlands are hard to overestimate. They provide critical habitat for many plant and animal species that could not survive in other habitats. They are also critical for water management as they absorb and store vast quantities of storm water, helping

reduce floods and recharge aquifers. Not only do wetlands store water like sponges, they also filter and clean water as well, absorbing toxins and other pollutants.

**THREATENED AND ENDANGERED SPECIES**

The U.S. Fish and Wildlife Service maintains a regular listing of threatened species, endangered species, species of concern, and candidate species for counties across the United States. The Pamlico Region has 28 species that are listed with the U.S. Fish and Wildlife Services. **Table 3.3** below lists the species identified as threatened, endangered, or other classification.

**Table 3.3 - Pamlico Sound Region Threatened and Endangered Species**

| <b>Group</b>     | <b>Common Name</b>       | <b>Scientific Name</b>                  | <b>Federal Status</b>                 | <b>Counties Identified</b> |
|------------------|--------------------------|---|---------------------------------------|----------------------------|
| Amphibians       | Neuse River Waterdog     | Necturus Lewisi                         | Threatened                            | B, Cr                      |
| Birds            | Red-Cockaded Woodpecker  | Picoides Borealis                       | Threatened                            | B, Ca, Cr, P               |
| Birds            | Rufa Red Knot            | Calidris Canutus Rufa                   | Threatened                            | B, Ca, Cr, P               |
| Birds            | Piping Plover            | Charadrius Melodus                      | Threatened                            | B, Ca, Cr, P               |
| Birds            | Roseate Tern             | Sterna Dougallii Dougallii              | Endangered                            | Ca                         |
| Birds            | Eastern Black Rail       | Laterallus Jamaicensis ssp. Jamaicensis | Threatened                            | B, Ca, Cr, P               |
| Birds            | Black Rail               | Laterallus Jamaicensis                  | Species of Concern                    | Ca, Cr, P                  |
| Clams            | Tar River Spiny mussel   | Elliptio Steinstansana                  | Endangered                            | B                          |
| Clams            | Dwarf Wedgemussel        | Alasmidonta Heterodon                   | Endangered                            | B, Cr                      |
| Clams            | Atlantic Pigtoe          | Fusconaia Masoni                        | Threatened                            | B                          |
| Fishes           | Carolina Madtom          | Noturus Furiosus                        | Endangered                            | Cr                         |
| Fishes           | Shortnose Sturgeon       | Acipenser Brevirostrum                  | Endangered                            | B, Ca, Cr, P               |
| Flowering Plants | Sensitive Joint-Vetch    | Aeschynomene Virginica                  | Threatened                            | B, Ca, Cr, P               |
| Flowering Plants | Seabeach Amaranth        | Amaranthus Pumilus                      | Threatened                            | Ca                         |
| Flowering Plants | Rough-Leaved Loosestrife | Lysimachia Asperulaefolia               | Endangered                            | B, Ca, Cr, P               |
| Flowering Plants | Pondberry                | Lindera Melissifolia                    | Endangered                            | Ca                         |
| Insects          | Monarch Butterfly        | Danaus Plexippus                        | Proposed Threatened                   | B, Ca, Cr, P               |
| Mammals          | West Indian Manatee      | Trichechus Manatus                      | Threatened                            | B, Ca, Cr, P               |
| Mammals          | Red Wolf                 | Canis Rufus                             | Endangered                            | B, Ca, Cr, P               |
| Mammals          | Northern Long-Eared Bat  | Myotis Septentrionalis                  | Endangered                            | B, Ca, Cr                  |
| Mammals          | Tricolored Bat           | Perimyotis Subflavus                    | Proposed Endangered                   | B, Ca, Cr, P               |
| Mammals          | Little Brown Bat         | Myotis Lucifugus                        | Under Review                          | B, Ca, Cr, P               |
| Reptiles         | American Alligator       | Alligator Mississippiensis              | Similarity of Appearance (Threatened) | B, Ca, Cr, P               |
| Reptiles         | Hawksbill Sea Turtle     | Eretmochelys Imbricata                  | Endangered                            | B, Ca, P                   |
| Reptiles         | Leatherback Sea Turtle   | Dermochelys Coriacea                    | Endangered                            | B, Ca, Cr, P               |
| Reptiles         | Loggerhead Sea Turtle    | Caretta Caretta                         | Threatened                            | Ca                         |
| Reptiles         | Kemp's Ridley Sea Turtle | Lepidochelys Kempii                     | Endangered                            | B, Ca, Cr, P               |
| Reptiles         | Green Sea Turtle         | Chelonia Mydas                          | Threatened                            | B, Ca, Cr, P               |

Source: U.S. Fish & Wildlife Service

Note: B = Beaufort, Ca = Carteret, Cr = Craven, P = Pamlico

## 3.2 BEAUFORT COUNTY

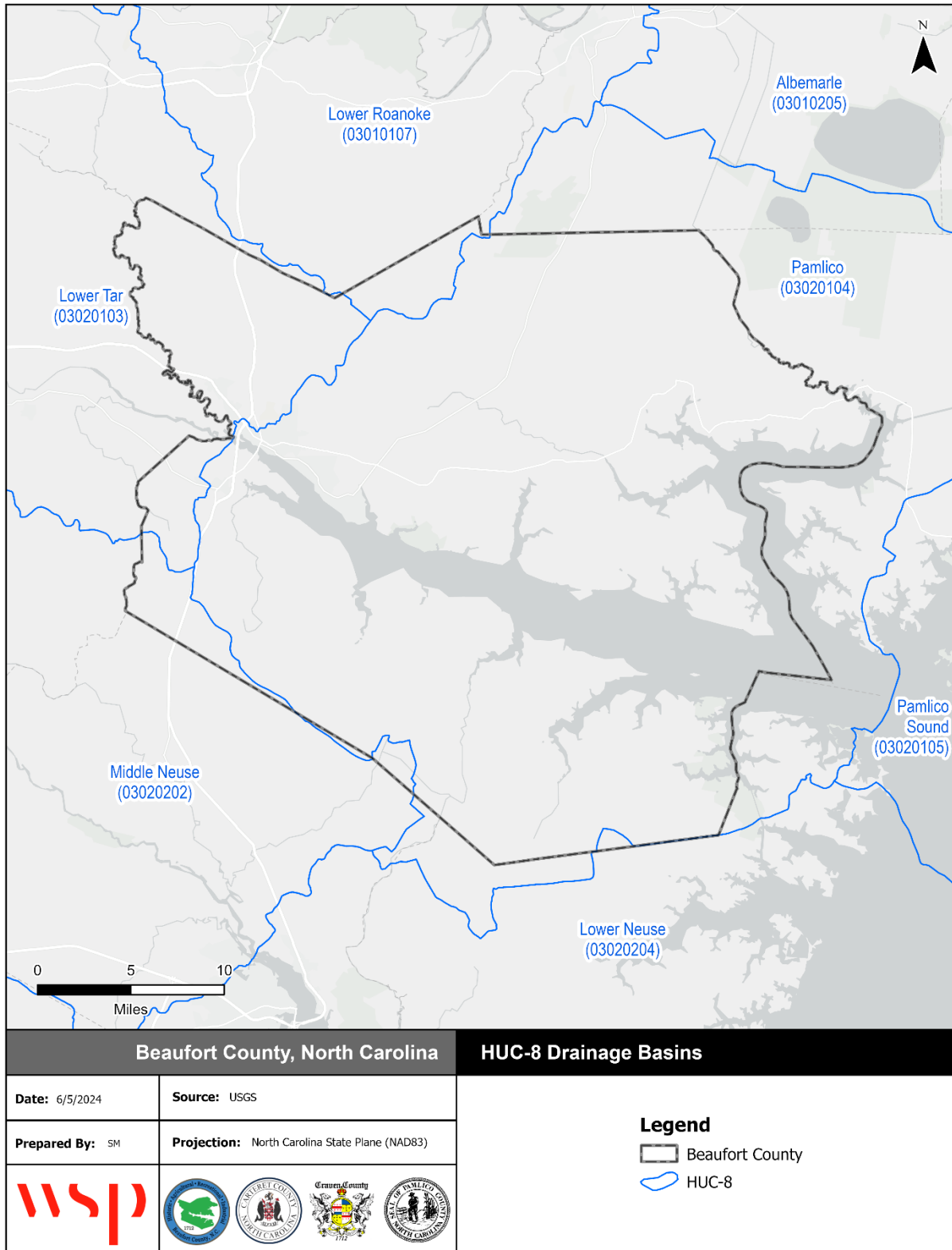
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### 3.2.1 HYDROLOGY

Nearly all of Beaufort County falls within the Pamlico River Basin. Roughly two percent of the County's northern extent falls within the Roanoke River Basin and a little less than four percent of the County's southwestern extent falls within the Neuse River Basin. A detailed overview of the Region's River Basin and boundaries is provided in Figure 3.3. The following provides a summary of each River Basin relevant to Beaufort County's jurisdiction:

- **Pamlico River Basin:** The Pamlico River Basin is the fourth largest river basin in North Carolina and is one of only four river basins whose boundaries are located entirely within the state. The Tar River originates in north central North Carolina in Person, Granville and Vance counties and flows southeasterly until it reaches tidal waters near Washington and becomes the Pamlico River and empties into the Pamlico Sound. The entire basin is classified as Nutrient Sensitive Waters (NSW).
- **Roanoke River Basin:** The Roanoke River basin extends from its source in the Blue Ridge Mountains of Virginia to the Albemarle Sound in North Carolina, encompassing mountainous, piedmont, and coastal topography as it flows generally east-southeastward. Its five subbasins constitute approximately 3,500 square miles of drainage area and approximately 2,400 miles of streams and rivers in North Carolina and contains diversity with classified trout streams in the western portion and swamp classified waters in the eastern portion. Seventeen counties and 42 municipalities are within the NC portion of the basin.
- **Neuse River Basin:** The Neuse River Basin is one of 17 basins designated for planning purposes in North Carolina. It lies entirely within the state. With a drainage area of 6,235 square miles, it is the third largest river basin in North Carolina. The headwater streams merge in Falls Lake Reservoir to form the Neuse River. Below Falls Lake Reservoir the river and its tributary streams flow through the broad flat terrain of the Coastal Plain. The low gradients of the Coastal Plain slow the river as it continues to flow southeasterly toward New Bern, where it changes character. The freshwater flowing downstream becomes brackish as it merges with the tidally influenced saltwater of the estuary and flows into Pamlico Sound.

Figure 3.3 - Beaufort County, HUC8 River Basins



Source: National Hydrology Dataset

### 3.2.2 PARKS AND OPEN SPACE

There are several parks located throughout Beaufort County, both in unincorporated areas of the County and participating municipalities. Goose Creek State Park, which is a North Carolina State Park, is also located within the County near the City of Washington. Goose Creek State Park covers 1,672 acres just off of the Pamlico Sound and is home to a wide variety of wildlife that make their homes in the extensive saltwater marshes, inlets and creeks on the northern side of the sound. Goose Creek State Park is open for year-round passive and active recreation.

The following provides a listing of county and municipal parks located in Beaufort County:

- Havens Gardens – 1001 Park Drive, Washington, NC
- Off Leash Dog Park – 4<sup>th</sup> and Brown Street, Washington, NC
- Festival Park – 119 East Water Street, Washington, NC
- Belhaven Waterfront – East Water Street, Belhaven, NC
- Bonner’s Point – 207 Front Street, Bath, NC
- Beebe Memorial Park – 1101 North Bridge Street, Washington, NC
- Veterans Park – 404 East Third Street, Washington, NC

### 3.2.3 DEMOGRAPHICS

#### POPULATION TOTAL

The population estimates for Beaufort County, NC, from 2000 to 2023 reveal significant trends and shifts across various jurisdictions. Overall, the county experienced a slight decline of 0.8 percent in population from 2000 to 2023, with a notable decrease of 6.5 percent between 2010 and 2020. Certain municipalities experienced more rapid population decreases, such as Bath (-16.7 percent) and Aurora (-27.8 percent). In contrast, Pantego (161.8 percent) and Chocowinity (48.7 percent) experienced rapid growth over the same period. The unincorporated areas also faced an 8.8 percent decrease from 2010 to 2020. Figure 3.4 provides an overview of region-wide population density as of 2023 as reported by the American Community Survey.

Table 3.4 provides a breakdown of total population for Beaufort County and the participating municipalities for the years 2000, 2010, 2020, and 2023.

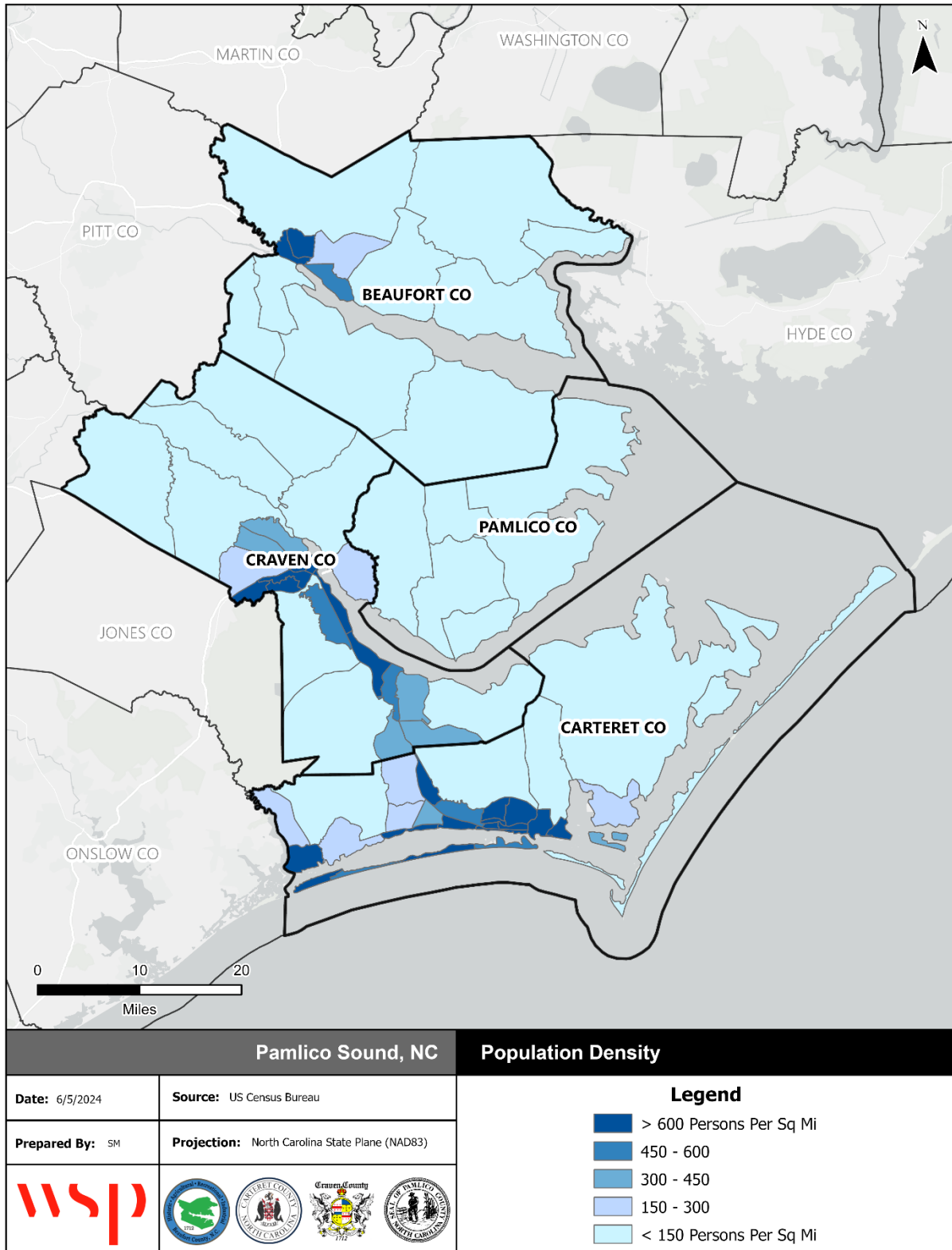
**Table 3.4 - Beaufort County Total Population**

| Jurisdiction          | 2000          | 2010          | 2020          | 2023          | % Change<br>2010-2020 | Overall % Change<br>2000-2023 |
|-----------------------|---------------|---------------|---------------|---------------|-----------------------|-------------------------------|
| Aurora                | 583           | 520           | 454           | 620           | -12.7%                | 6.5%                          |
| Bath                  | 275           | 249           | 245           | 229           | -1.6%                 | -16.7%                        |
| Belhaven              | 1,968         | 1,688         | 1,412         | 1,421         | -16.4%                | -27.8%                        |
| Chocowinity           | 733           | 820           | 750           | 1,090         | -8.5%                 | 48.7%                         |
| Pantego               | 170           | 179           | 164           | 445           | -8.4%                 | 161.8%                        |
| Washington            | 9,619         | 9,477         | 9,887         | 9,754         | 4.3%                  | 1.4%                          |
| Washington Park       | 440           | 451           | 390           | 470           | -13.5%                | 6.8%                          |
| <b>Municipalities</b> | <b>13,788</b> | <b>13,384</b> | <b>13,302</b> | <b>14,029</b> | <b>-0.6%</b>          | <b>1.8%</b>                   |
| Unincorporated Areas  | 31,170        | 34,375        | 31,357        | 30,568        | -8.8%                 | -1.9%                         |
| <b>Total</b>          | <b>44,958</b> | <b>47,759</b> | <b>44,659</b> | <b>44,597</b> | <b>-6.5%</b>          | <b>-0.8%</b>                  |

Source: US Census Bureau American Community Survey



Figure 3.4 - Pamlico Sound Region Population Density



Source: American Community Survey 2019-2023 5-Year Estimates

## GROWTH TRENDS

Table 3.5 provides population forecast through the year 2050 for Beaufort County, as well as all participating municipal jurisdictions. Municipal forecasts are based on the annual growth rate (per individual) calculated from 2000 and 2023 population change presented in Table 3.4. According to the North Carolina Office of State Budget and Management (NCOSBM), Beaufort County is expected to decrease in population at a rate of 13.7 percent through 2050 (a total of 6,118 less individuals).

**Table 3.5 - Beaufort County Population Projections, 2023-2050**

| Jurisdiction            | 2023          | 2030          | 2040          | 2050          | % Change 2023-2050 |
|-------------------------|---------------|---------------|---------------|---------------|--------------------|
| Aurora                  | 620           | 627           | 637           | 657           | 6.0%               |
| Bath                    | 229           | 215           | 195           | 175           | -23.6%             |
| Belhaven                | 1,421         | 1,260         | 1,030         | 800           | -43.7%             |
| Chocowinity             | 1,090         | 1,195         | 1,345         | 1,495         | 37.2%              |
| Pantego                 | 445           | 522           | 632           | 742           | 66.7%              |
| Washington              | 9,754         | 9,789         | 9,839         | 9,889         | 1.4%               |
| Washington Park         | 470           | 477           | 487           | 497           | 5.8%               |
| <b>Municipalities</b>   | <b>14,029</b> | <b>14,099</b> | <b>14,199</b> | <b>14,299</b> | <b>1.9%</b>        |
| Unincorporated Areas    | 30,568        | 30,386        | 30,126        | 29,866        | -2.3%              |
| <b>Beaufort County*</b> | <b>44,597</b> | <b>42,413</b> | <b>40,448</b> | <b>38,479</b> | <b>-13.7%</b>      |

Source: US Census Bureau American Community Survey and NCOSBM State/County Population Projections

Note: Municipal population projections were calculated using the linear growth formula, which assumes the same growth occurs annually. The annual growth rate (in persons) was determined by subtracting the initial population (2000) from the base population (2023) dividing it by the number of years (23 years). The annual growth rate (in person) was then multiplied by base population (2023) and number of years (7 years for 2030, 17 years for 2040, and 27 years for 2050).

\*Unlike the Municipal population projections, the County population projections were forecasted and provided by NCOSBM, which considers estimates of births, deaths, migration, and other demographic data.

## RACIAL DEMOGRAPHICS

The overall Beaufort County population is predominantly Caucasian comprising 66.8 percent of residents, while most of the remaining population is African American (22.8 percent). Overall, Beaufort County has a Hispanic/Latino population of 7.8 percent. Municipalities boasting the largest Hispanic population throughout the County include the Town of Chocowinity (13.9 percent) and the Town of Pantego (60.2 percent).

According to the American Community Survey, the 2023 median age within Beaufort County was 47.1 years. Approximately 80.6 percent of the County's population is over the age of eighteen, while 48 percent is male and 52 percent is female. Table 3.6 provides a summary of racial composition for Beaufort County, as well as all participating municipal jurisdictions.

**Table 3.6 - Beaufort County Racial Composition**

| Jurisdiction | Caucasian | African-American | Asian | Other Race* | Two or More Races | Persons of Hispanic or Latino Origin** |
|--------------|-----------|------------------|-------|-------------|-------------------|--|
| Aurora       | 44.0%     | 45.3%            | 0.0%  | 0.0%        | 10.6%             | 0.0%                                   |
| Bath         | 100.0%    | 0.0%             | 0.0%  | 0.0%        | 0.0%              | 0.0%                                   |
| Belhaven     | 43.3%     | 48.6%            | 0.0%  | 0.1%        | 8.0%              | 12.0%                                  |
| Chocowinity  | 28.5%     | 53.7%            | 0.0%  | 15.7%       | 2.1%              | 13.9%                                  |
| Pantego      | 34.4%     | 5.4%             | 0.0%  | 0.0%        | 60.2%             | 60.2%                                  |

**SECTION 3: PLANNING AREA PROFILE**

| Jurisdiction           | Caucasian    | African-American | Asian       | Other Race* | Two or More Races | Persons of Hispanic or Latino Origin** |
|------------------------|--------------|------------------|-------------|-------------|-------------------|--|
| Washington             | 48.5%        | 43.4%            | 0.4%        | 1.9%        | 6.1%              | 4.6%                                   |
| Washington Park        | 96.2%        | 0.9%             | 0.2%        | 0.2%        | 2.6%              | 0.4%                                   |
| <b>Beaufort County</b> | <b>68.8%</b> | <b>22.8%</b>     | <b>0.3%</b> | <b>2.3%</b> | <b>5.7%</b>       | <b>7.8%</b>                            |

\*Other races includes American Indian, Alaskan Native, Native Hawaiian, and Pacific Islander.

\*\*Persons of Hispanic or Latino Origin are classified regardless of race; therefore, this percentage is considered independent of the other race classifications listed.

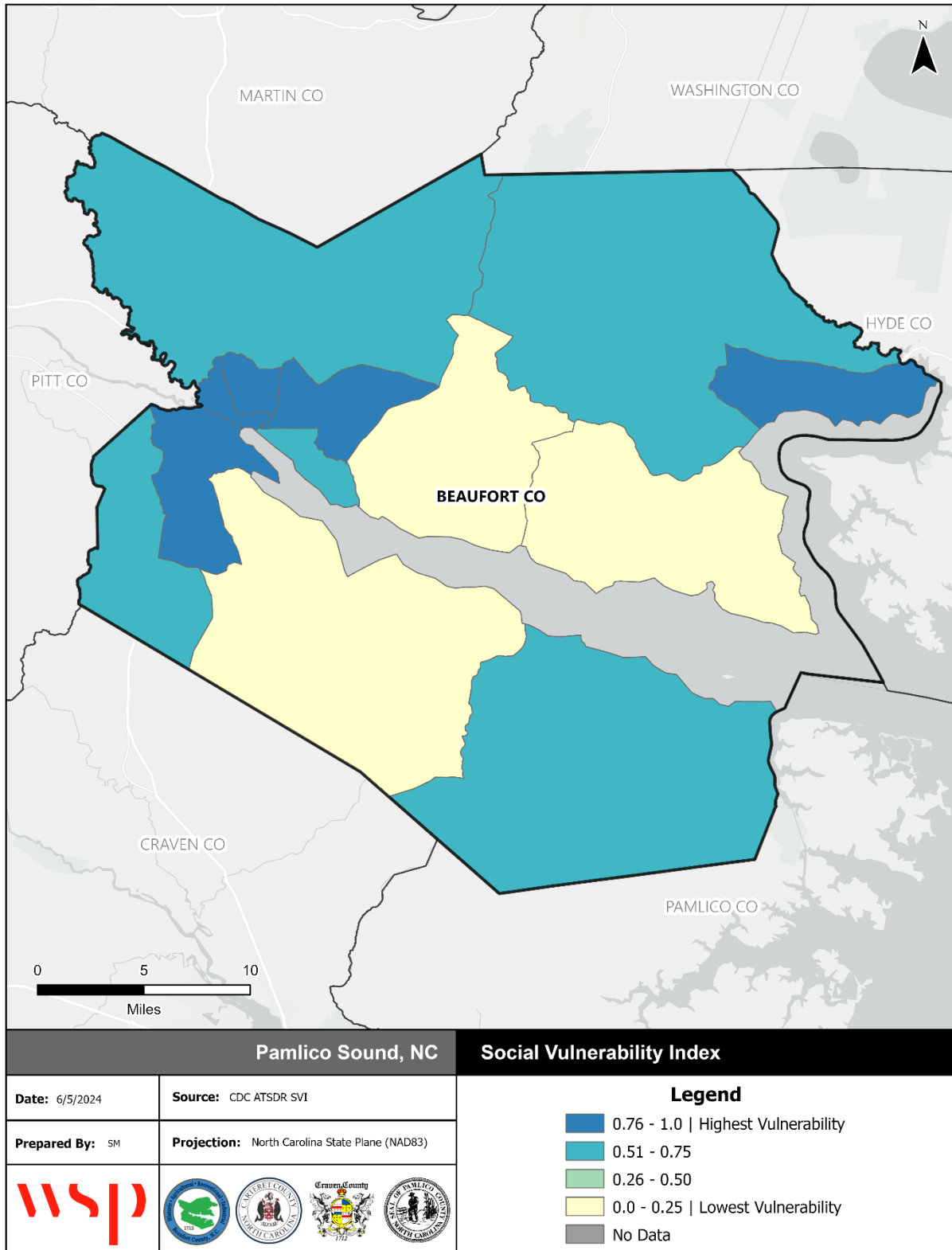
Source: US Census Bureau American Community Survey.

**SOCIAL VULNERABILITY**

Figure 3.5 below displays social vulnerability information for Beaufort County by census tract according to 2022 data and analysis by the Centers for Disease Control and Prevention (CDC). The CDC’s Social Vulnerability Index (SVI) indicates the relative vulnerability within census tracts based on 15 social factors: poverty, unemployment, income, education, age, disability, household composition, minority status, language, housing type, and transportation access. Higher social vulnerability is an indicator that a community may be limited in its ability to respond to and recover from hazard events. Therefore, using this SVI information can help the County and municipal jurisdictions to prioritize pre-disaster aid, allocate emergency preparedness and response resources, and plan for the provision of recovery support.

Overall, Beaufort County has a moderate SVI index. A majority of the County has moderate to high SVI, with the highest SVI along portions of the eastern and western County boundaries near and adjacent to Washington Park and Belhaven. Central portions of the County adjacent to River Road and the Pamlico River have a much lower SVI than the County overall.

Figure 3.5 - Beaufort County Social Vulnerability Index



### 3.2.4 HOUSING CHARACTERISTICS

According to the American Community Survey, there were approximately 24,385 housing units in Beaufort County as of 2023. This figure marks a negative 1.2 percent, or 313 units, decrease since 2010 for unincorporated portions of Beaufort County. Although the County’s housing unit inventory slightly decreased, several County municipalities have experienced a much more rapid increase in their housing stock with the Towns of Chocowinity and Pantego having the most notable growth.

Throughout Beaufort County, the housing is predominantly comprised of owner occupants (70.1 percent). This percentage varies significantly across the participating municipal jurisdictions, ranging from roughly 40 percent to 90 percent. This factor is important in regard to mitigation and post disaster recovery because homeownership directly correlates to the long-term maintenance and flood proofing of property, as well as the eligibility for funding of impacted units following a flooding event associated with nor’easters and tropical storms/hurricanes.

In terms of vulnerability associated with natural hazard events such as tropical storms, hurricanes, and tornadoes, roughly 23 percent of the Beaufort County housing stock is comprised of manufactured homes, which is much higher than the state overall (10.5 percent). The prevalence of manufactured housing poses a unique threat regarding both sustainability, as well as emergency response with defined flood hazard areas.

Table 3.7 below provides a summary of housing characteristics for Beaufort County, as well as participating municipal jurisdictions.

**Table 3.7 - Beaufort County Housing Characteristics**

| Jurisdiction           | Housing Units (2010) | Housing Units (2023) | % Change 2010-2023 | % Owner Occupied Units (2023) | % Vacant Units (2023) |
|------------------------|----------------------|----------------------|--------------------|-------------------------------|-----------------------|
| Aurora                 | 315                  | 295                  | -6.5%              | 47.9%                         | 27.8%                 |
| Bath                   | 176                  | 167                  | -5.1%              | 84.4%                         | 26.9%                 |
| Belhaven               | 940                  | 827                  | -12.0%             | 59.9%                         | 32.5%                 |
| Chocowinity            | 393                  | 510                  | 29.8%              | 43.6%                         | 6.1%                  |
| Pantego                | 88                   | 108                  | 22.7%              | 75.5%                         | 13.0%                 |
| Washington             | 4,754                | 5,372                | 13.0%              | 50.8%                         | 12.9%                 |
| Washington Park        | 220                  | 254                  | 15.5%              | 92.3%                         | 8.3%                  |
| <b>Beaufort County</b> | <b>24,688</b>        | <b>24,385</b>        | <b>-1.2%</b>       | <b>70.1%</b>                  | <b>21.7%</b>          |

Source: US Census Bureau American Community Survey.

### 3.2.5 WAGES, EMPLOYMENT AND INDUSTRY

The 2023 American Community Survey indicates that the median household income for Beaufort County was \$57,997, which is substantially lower than the state’s median household income (\$69,904). Approximately 18 percent of the population is considered to be living below the poverty level. Moreover, 32.1 percent of people under 18 years of age are living below the poverty level.

Within Beaufort County, approximately 55.3 percent of the population is in the labor force. This is generally characteristic of all participating municipal jurisdictions as well. The percentage of the population currently employed in Beaufort County is 52.5 percent, while only two of the jurisdictions have an employment rate over 50 percent. According to the American Community Survey, the unemployment rate for Beaufort County overall was 5.4 percent. Additionally, as of 2023 approximately 14.6 percent of households throughout Beaufort County relied on food stamps/SNAP benefits.

**SECTION 3: PLANNING AREA PROFILE**

The following tables provides a summary of key economic indicators and population employed by industry for both incorporated and unincorporated portions of Beaufort County.

**Table 3.8 - Beaufort County Key Economic Indicators**

| Jurisdiction           | Population in Labor Force | Percent Employed (%) | Percent Unemployed (%) | Percent Not in Labor Force (%) | Unemployment Rate (%) |
|------------------------|---------------------------|----------------------|------------------------|--------------------------------|-----------------------|
| Aurora                 | 281                       | 44.5%                | 10.6%                  | 44.9%                          | 19.2%                 |
| Bath                   | 78                        | 37.6%                | 0.5%                   | 62.0%                          | 1.3%                  |
| Belhaven               | 494                       | 37.6%                | 7.8%                   | 54.6%                          | 17.2%                 |
| Chocowinity            | 466                       | 42.5%                | 15.2%                  | 42.3%                          | 26.4%                 |
| Pantego                | 100                       | 60.8%                | 4.6%                   | 34.6%                          | 7.0%                  |
| Washington             | 4,235                     | 50.5%                | 2.0%                   | 47.4%                          | 3.9%                  |
| Washington Park        | 218                       | 48.3%                | 5.1%                   | 46.6%                          | 9.6%                  |
| <b>Beaufort County</b> | <b>20,463</b>             | <b>52.2%</b>         | <b>3.0%</b>            | <b>44.7%</b>                   | <b>5.4%</b>           |

Source: US Census Bureau American Community Survey.

**Table 3.9 - Beaufort County Employment by Industry**

| Jurisdiction           | Management, Business, Science and Arts (%) | Service (%)  | Sales and Office (%) | Natural Resources, Construction, and Maintenance (%) | Production, Transportation, and Material Moving (%) |
|------------------------|--|--------------|----------------------|--|---|
| Aurora                 | 18.1%                                      | 26.9%        | 24.2%                | 15.0%  | 15.9%   |
| Bath                   | 59.7%                                      | 7.8%         | 10.4%                | 13.0%  | 9.1%  |
| Belhaven               | 17.8%                                      | 34.5%        | 16.9%                | 15.9%  | 14.9%   |
| Chocowinity            | 25.7%                                      | 6.7%         | 39.7%                | 9.9%   | 18.1%   |
| Pantego                | 37.6%                                      | 14.0%        | 9.7%                 | 26.9%  | 11.8%   |
| Washington             | 39.4%                                      | 17.7%        | 16.4%                | 7.6%   | 18.9%   |
| Washington Park        | 52.8%                                      | 12.2%        | 26.9%                | 4.6%   | 3.6%  |
| <b>Beaufort County</b> | <b>32.1%</b>                               | <b>17.3%</b> | <b>21.2%</b>         | <b>13.3%</b>   | <b>16.1%</b>  |

Source: US Census Bureau American Community Survey.

The top industries in Beaufort County are (1) Educational Services, and Health Care and Social Assistance Management, (2) Manufacturing, and (3) Retail Trade. Top employers across the County include:

- PCS Phosphate Company, Inc.
- Beaufort County Schools
- Cleanaire Inc.
- County of Beaufort
- Food Lion
- Beaufort County Community College
- Walmart Associates, Inc.
- City of Washington
- River City Construction Inc.
- Precisionaire Inc. Flanders Airpure

### 3.2.6 HISTORIC PROPERTIES

As of January 2025, Beaufort County had 18 listings on the National Register of Historic Places. This list includes 14 Historic Structures and 4 Historic Districts. Presence on the National Register signifies that these structures have been determined to be worthy of preservation for their historical or cultural values. The following provides a listing of all Nationally Registered Properties in Beaufort County:

- Bath Historic District (Bath) – 2/26/1970
- Bath School (Bath) – 1/30/2008
- Bonner House (Bath) – 2/26/1970
- Palmer-Marsh House (Bath) – 2/26/1970
- St. Thomas Episcopal Church (Bath) – 11/20/1970
- Belhaven City Hall (Belhaven) – 1/27/1981
- Belhaven Commercial Historic District (Belhaven) – 4/24/2015
- Ware Creek School (Blounts Creek) – 12/6/1996
- Trinity Cemetery (Chocowinity) – 8/19/2011
- Belfont Plantation House (Latham) – 12/12/1976
- Pantego Academy (Pantego) – 10/25/1984
- Bank of Washington, West End Branch (Washington) – 2/18/1971
- Beaufort County Courthouse (Washington) – 3/31/1971
- Bowers-Trip House (Washington) – 4/1/1999
- North Market Street Historic District (Washington) – 10/25/2011
- Rosedale (Washington) – 4/29/1982
- Washington Historic District (Washington) – 2/9/1979
- Zion Episcopal Church (Washington) – 8/16/2000

### 3.2.7 LAND DEVELOPMENT TRENDS

Throughout Beaufort County, approximately 54 percent of parcels are currently developed. Table 3.10 provides an overview of developed and undeveloped properties located throughout Beaufort County. A majority of development is focused within the County’s municipal areas; however, the County is also home to a burgeoning agricultural industry. Aside from agricultural uses and urbanized growth, development is centralized along key highway corridors.

**Table 3.10 - Beaufort County Developed and Undeveloped Parcel Counts**

| Jurisdiction                   | Developed Parcels | Undeveloped Parcels | % Developed  |
|--------------------------------|-------------------|---------------------|--------------|
| Aurora                         | 329               | 175                 | 65.3%        |
| Bath                           | 211               | 92                  | 69.6%        |
| Belhaven                       | 1,004             | 643                 | 61.0%        |
| Chocowinity                    | 341               | 172                 | 66.5%        |
| Pantego                        | 114               | 76                  | 60.0%        |
| Washington                     | 4,168             | 1,194               | 77.7%        |
| Washington Park                | 224               | 67                  | 77.0%        |
| Unincorporated Beaufort County | 18,510            | 18,880              | 49.5%        |
| <b>Total</b>                   | <b>24,901</b>     | <b>21,299</b>       | <b>53.9%</b> |

Source: County Parcel GIS Data and iRisk Building Footprints

Growth and development have been slow throughout unincorporated Beaufort County. Most development that has taken place involves residential subdivision construction generally located on properties on or adjacent to the County’s abundant shoreline areas. Non-residential development has occurred through modest industrial and commercial expansion. Most of this growth has been focused on properties fronting major transportation thoroughfares including US Highways 17 and 264, as well as NC Highways 32 and 33. These development trends are expected to continue.

Unincorporated Beaufort County does not maintain zoning regulations. As a result, there is a higher likelihood that incompatible land uses may be developed adjacent to one another. The County’s future land use map provides some guidance regarding future development, but this will only impact land use in a regulatory manner within areas defined as an “Area of Environmental Concern” by the NC Division of Coastal Management.

All municipalities within Beaufort County maintain zoning regulations that provide for better control of land use and development. All municipalities, except for the Town of Bath and the City of Washington, fall under the Beaufort County CAMA Land Use Plan. This land use plan provides for general parameters focused on limiting the potential for inappropriate/incompatible land uses; however, it has not been updated in over ten years. The Beaufort County Joint CAMA Land Use Plan was adopted by the Beaufort County Board of Commissioners in October of 2009 and was last amended in May 2023.

The plan still serves these communities and provides the basis for the location of each community’s defined zoning districts. The plan defines seven future land use districts:

- Conservation I
- Conservation II Overlay Classification
- Towns and Community Centers
- Transition Classification
- Transition – Water Oriented Development
- Transition – US 17/264 Sector Development
- Agriculture-Forestry-Rural Housing

Figure 3.6 and Figure 3.7 provide the delineation of each Future Land Use District for the County.

Development within Aurora, Bath, Belhaven, Chocowinity, and Pantego is predominantly characterized by commercial land use centered around the downtown district and medium density residential development toward the edges of their respective corporate limits. The Town of Washington Park is a quiet single-family residential community located adjacent to the City of Washington. Growth and development policies of each community are summarized below:

- Aurora favors compact development pattern where possible and aims to preserve and protect historic resources.
- Belhaven’s future growth and development objectives include encouraging residential growth in areas served by central water and sewer and promoting responsible growth with emphasis on redevelopment of waterfront areas.
- Chocowinity encourages new development requiring urban services to locate within city limits while reserving outlying areas for agriculture and low density uses.
- Pantego’s growth and development objectives include encouraging new development within the city limits while directly low density uses to outlying areas.
- Washington Park seeks to maintain its low density detached single-family residential character. The Town seeks to provide central sewer service, preserve natural systems, and encourage development consistent with existing character.



### SECTION 3: PLANNING AREA PROFILE

The Town of Bath adopted an updated land use plan in May 2024. The Town’s vision is to maintain its low density single-family residential character, preserve historical significance, conserve natural resources, and provide a safe small town character. Growth is not promoted or expected.

The City of Washington maintains a more robust Planning and Development department than the remainder of Beaufort County. The City has developed both short- and long-range plans intended to promote organized development and enhance economic development. These efforts focus on the development/redevelopment of the City’s downtown historic/central business district, while also addressing the issue of adequate market rate and affordable housing. The City of Washington also addresses the issue of development throughout its extensive flood hazard area through their planning efforts. These efforts have been two-fold through both structural mitigation to existing structures and regulation of new development through the City’s Flood Damage Prevention Ordinance.

The City of Washington adopted the One Washington Forward Together comprehensive plan in January 2024. Through this plan, the City encourages high density development near the core area of the City and near developed commercial areas. Vertical mixed use is encouraged in these areas. Future residential development is expected for use existing infrastructure and avoid environmentally sensitive areas, including floodplain and areas vulnerable to sea level rise. The City aims to prevent the expansion of public infrastructure into sensitive or hazardous areas. Future flooding and sea level rise areas are shown on the City’s future land use map. Washington’s future land use map is shown in Figure 3.8.

**Figure 3.6 – Beaufort County Future Land Use Map**

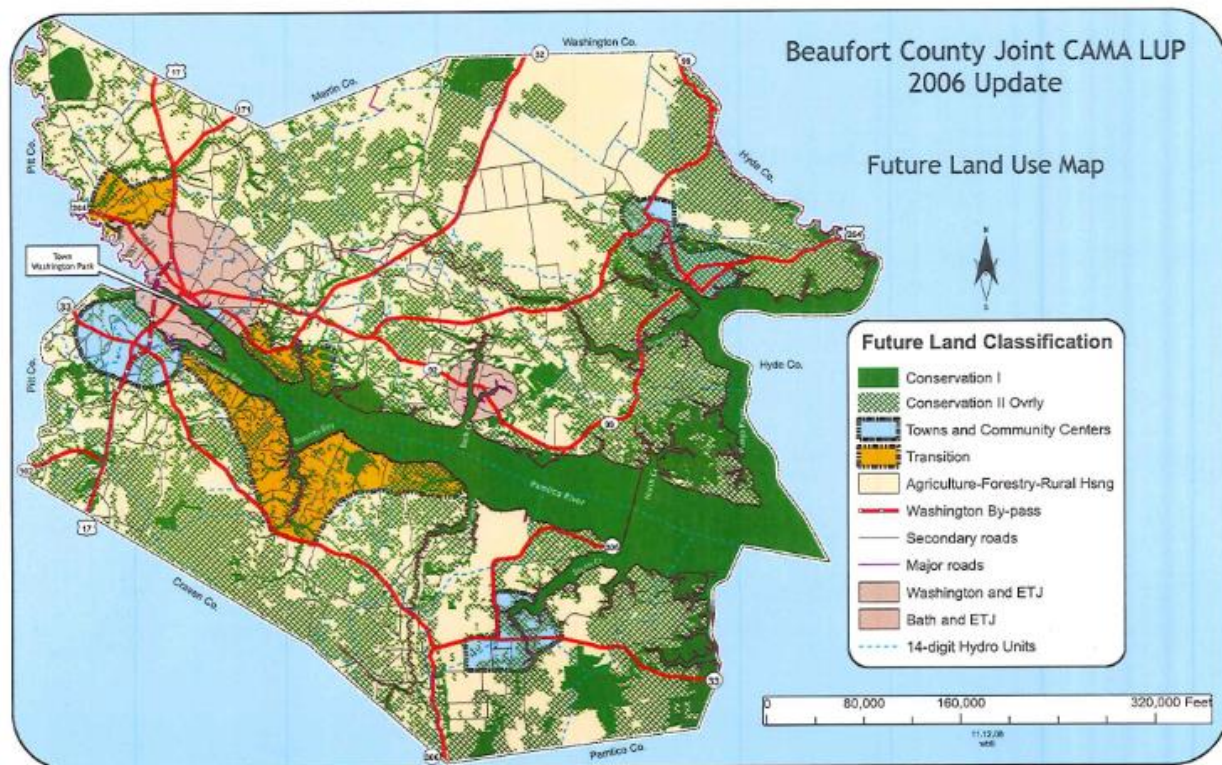


Figure 3.7 - Beaufort County Future Land Use Map, Belhaven-Pantego Vicinity

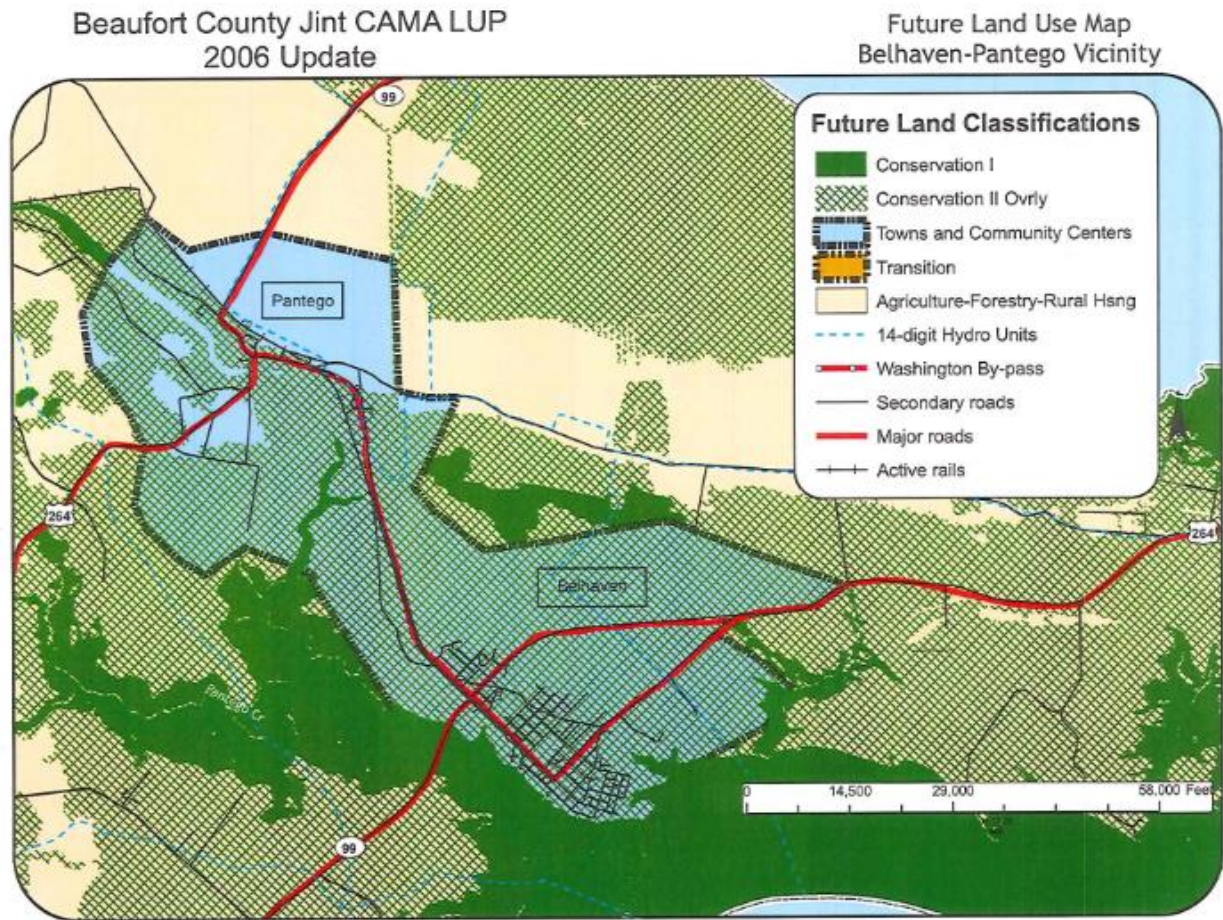
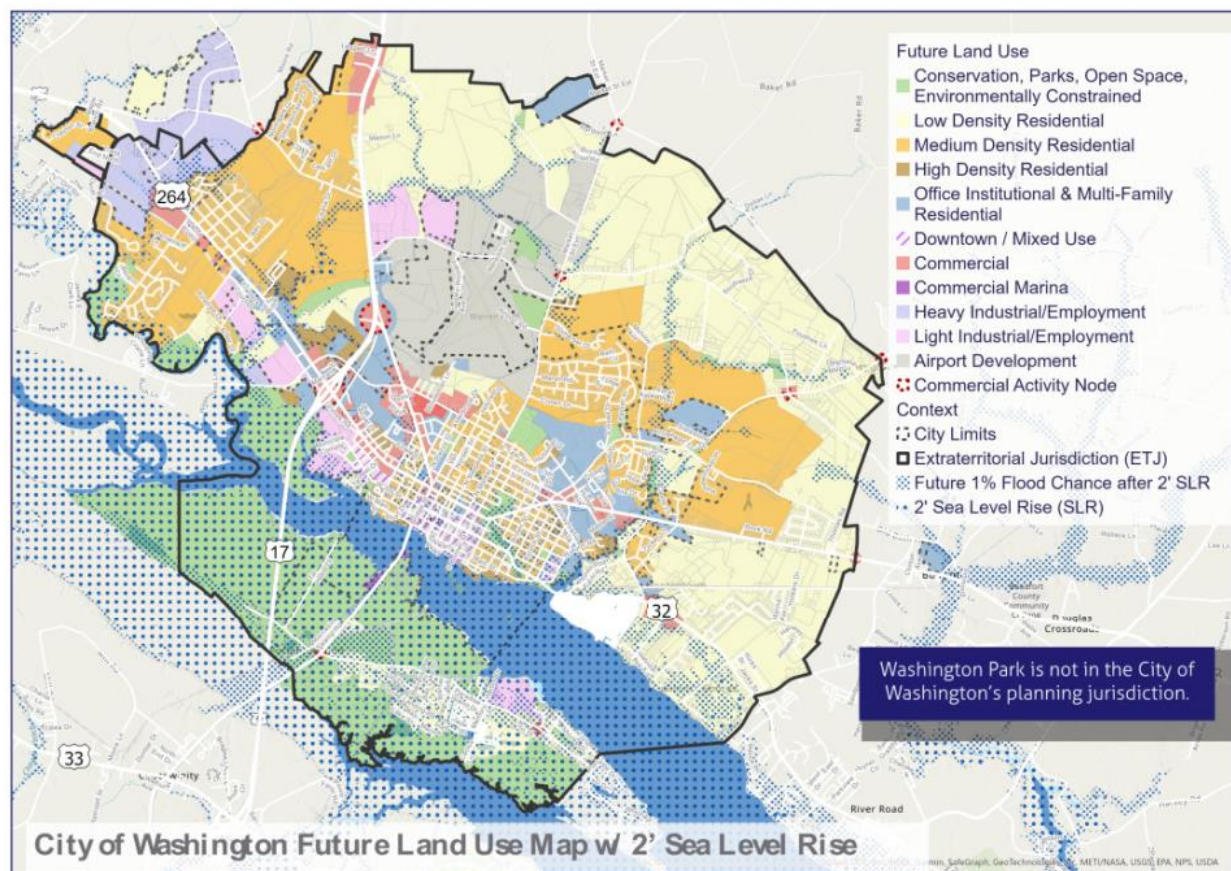


Figure 3.8 – City of Washington Future Land Use Map



## 3.3 CARTERET COUNTY

### 3.3.1 HYDROLOGY

Parts of three river basins are found in Carteret County: the Onslow Bay River Basin, the Neuse River Basin, and the Pamlico River Basin, as shown in Figure 3.9. The Onslow Bay Basin encompasses most of the populated land area whereas the Neuse Basin encompasses undeveloped, agricultural, and sparsely populated land. A small area of the Pamlico Sound is part of the Pamlico River Basin portion of the County.

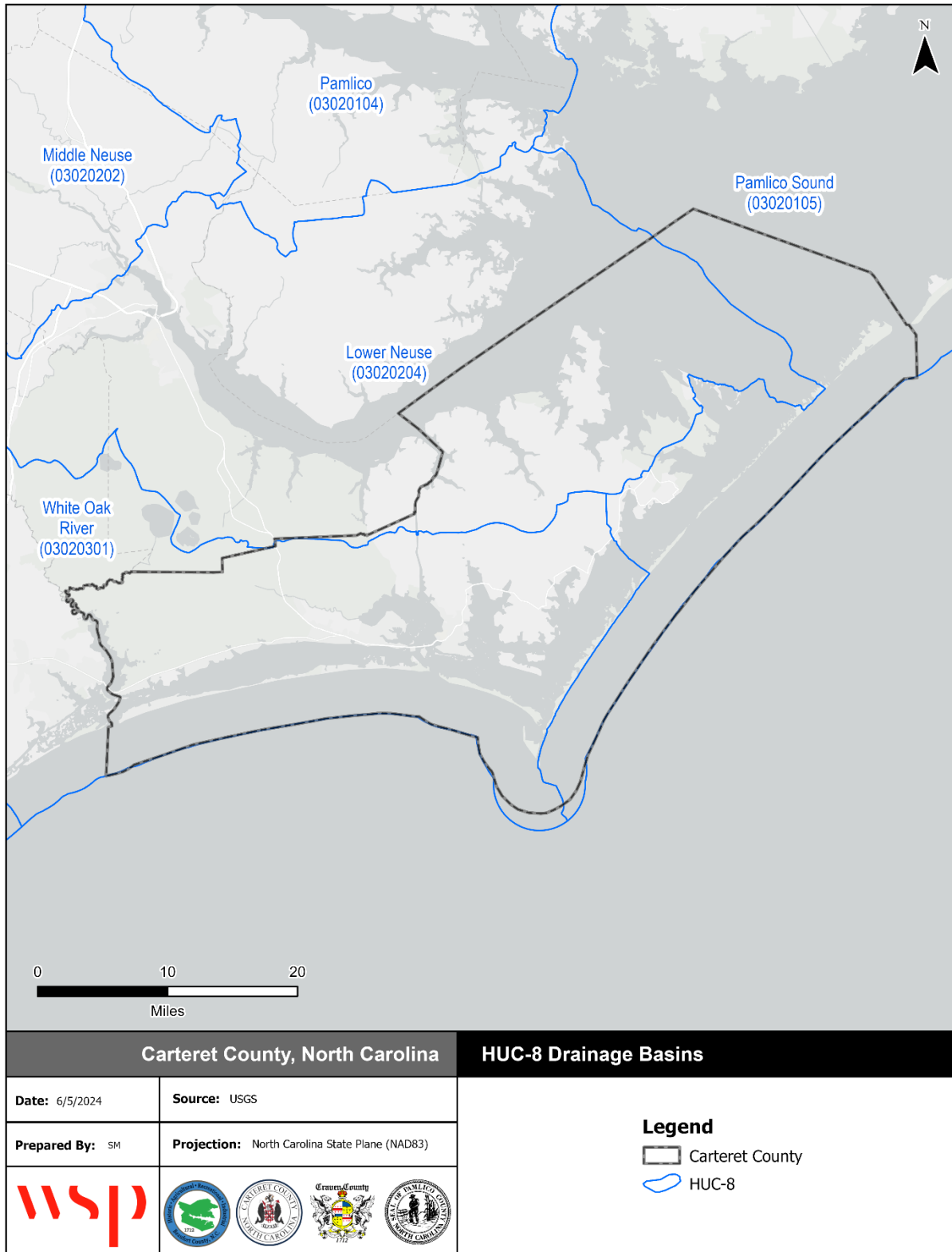
The following provides a summary of each river basin:

- **Onslow Bay River Basin:** The Onslow Bay Basin drains 910 square miles of the North Carolina Coastal Plain and includes the barrier islands from Browns Inlet to Ocracoke Inlet. The basin encompasses the drainage areas of three separate rivers, the White Oak River, the Newport River, and the North River. The basin also includes the waters of Bogue Sound and Core Sound. About 45% of the area of the basin is classified as water by the 1997 Natural Resource Inventory. An additional 40 of the basin is forested, with much of it being in the Croatan National Forest.
- **Neuse River Basin:** The Neuse River originates in north central North Carolina in Person and Orange counties and flows southeasterly until it reaches tidal waters near Streets Ferry upstream of New

Bern. At New Bern, the river broadens dramatically and changes from a free-flowing river to a tidal estuary that eventually flows into the Pamlico Sound. The Neuse River basin is the third largest river basin in North Carolina (6,235 square miles) and is one of only four major river basins whose boundaries are located entirely within the state. There are 3,389 freshwater stream miles, 17,902 acres of freshwater reservoirs and lakes, 143 saltwater stream miles, and 370,779 estuarine/saltwater acres in the Neuse River basin. There are also numerous miles of unmapped small perennial, intermittent and ephemeral streams. Extensive wetland communities are also found in the lower Neuse River basin. The Neuse River basin encompasses all or portions of 18 counties and 77 municipalities.

- **Pamlico River Basin:** The Tar-Pamlico River Basin is the fourth largest river basin in North Carolina and is one of only four river basins whose boundaries are located entirely within the state. The Tar River originates in north central North Carolina in Person, Granville and Vance counties and flows southeasterly until it reaches tidal waters near Washington and becomes the Pamlico River and empties into the Pamlico Sound. The entire basin is classified as Nutrient Sensitive Waters (NSW).

Figure 3.9 – Carteret County, HUC8 River Basins



Source: National Hydrology Dataset

### 3.3.2 PARKS AND OPEN SPACE

There are several parks located throughout Carteret County, both within unincorporated portions of the County, as well as within participating municipalities. Additionally, the Croatan National Forest is located within the County.

The Croatan National Forest is one of four National Forests in North Carolina and the only true coastal forest in the East. The Croatan National Forest's 160,000 acres have pine forests, saltwater estuaries, bogs and raised swamps called pocosins. Bordered on three sides by tidal rivers and the Bogue Sound, the forest is defined by water.

All this water provides a variety of recreation and diversity of wildlife- from deer, black bears and turkeys to wading birds, ospreys and alligators. Canoeing and fishing are popular on blackwater creeks and saltwater marshes. The Croatan is also home to the carnivorous Venus fly-trap, sunder and pitcherplant.

The following provides a listing of parks and facilities located throughout Carteret County:

- Western Park Community Center – 275 Ole Hwy 58, Cedar Point, NC
- Fort Benjamin Recreation Center – 100 McQueen Ave, Newport, NC
- Western Park – 275 Ole Hwy 58, Cedar Point, NC
- Salter Path Park – 126 Ball Park Dr, Salter Path, NC
- Salter Path Beach Access – 1025 Salter Path Rd, Pine Knoll Shores, NC
- Fort Benjamin Park – 100 McQueen Ave, Newport, NC
- Swinson Park – 145 Swinson Park Rd, Morehead City, NC
- Radio Island Beach Access – 501 Marine Dr, Morehead City, NC
- West Beaufort Boat Access – 138 Town Creek Drive, Beaufort, NC
- Harkers Island Beach Access – 106 Harkers Island Rd, Harkers Island, NC
- Freedom Park – 201 Freedom Park Rd, Beaufort, NC
- Marshallberg Picnic Area – 1328 Marshallberg Rd, Marshallberg, NC
- Eastern Park – 450 Hwy 70 E, Smyrna, NC
- Straits Fishing Pier – 1651 Harkers Island Rd, Beaufort, NC
- Mariners Park – 201 East St, Sea Level, NC
- South River Park – 1030 South River Rd, Beaufort, NC

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### 3.3.3 DEMOGRAPHICS

#### POPULATION TOTAL

The total population of Carteret County according to the 2023 American Community Survey was 68,682 persons. Overall, County population has increased by roughly 16 percent since 2000, which equates to less than a 1 percent annual growth rate. Over the last two decades, unincorporated portions of the County have increased in population by roughly 6 percent. Although this growth has been slow but steady, municipal population growth has been rapid, especially in relation to barrier-island and coastal communities. From the years 2000 to 2023, Cape Carteret (114 percent), Cedar Point (115.8 percent), and Indian Beach (141.1 percent), all experienced drastic increases in population. The only communities showing negative growth over this same period were Atlantic Beach (-4.3 percent) and Pine Knoll Shores (-9 percent). Figure 3.4 in Section 3.2 provides an overview of region-wide population density as of 2023 as reported by the American Community Survey.

Table 3.11 provides a breakdown of total population for Carteret County and the participating municipalities for the years 2000, 2010, 2020, and 2023.

**Table 3.11 - Carteret County Total Population**

| Jurisdiction          | 2000          | 2010          | 2020          | 2023          | % Change 2010-2023 | Overall % Change 2000-2023 |
|-----------------------|---------------|---------------|---------------|---------------|--------------------|----------------------------|
| Atlantic Beach        | 1,781         | 1,495         | 1,374         | 1,705         | -8.1%              | -4.3%                      |
| Beaufort              | 3,771         | 4,039         | 4,460         | 4,613         | 10.4%              | 22.3%                      |
| Bogue                 | 590           | 684           | 691           | 800           | 1.0%               | 35.6%                      |
| Cape Carteret         | 1,214         | 1,917         | 2,230         | 2,598         | 16.3%              | 114.0%                     |
| Cedar Point           | 929           | 1,279         | 1,776         | 2,005         | 38.9%              | 115.8%                     |
| Emerald Isle          | 3,488         | 3,655         | 3,849         | 3,915         | 5.3%               | 12.2%                      |
| Indian Beach          | 95            | 112           | 222           | 229           | 98.2%              | 141.1%                     |
| Morehead City         | 7,691         | 8,661         | 9,562         | 9,696         | 10.4%              | 26.1%                      |
| Newport               | 3,349         | 4,150         | 4,358         | 4,428         | 5.0%               | 32.2%                      |
| Peletier              | 487           | 644           | 770           | 779           | 19.6%              | 60.0%                      |
| Pine Knoll Shores     | 1,524         | 1,339         | 1,378         | 1,387         | 2.9%               | -9.0%                      |
| <b>Municipalities</b> | <b>24,919</b> | <b>27,975</b> | <b>30,670</b> | <b>32,155</b> | <b>9.6%</b>        | <b>29.0%</b>               |
| Unincorporated Areas  | 34,464        | 38,494        | 37,006        | 36,527        | -3.9%              | 6.0%                       |
| <b>Total</b>          | <b>59,383</b> | <b>66,469</b> | <b>68,699</b> | <b>68,682</b> | <b>3.4%</b>        | <b>15.7%</b>               |

Source: US Census Bureau American Community Survey.

## GROWTH TRENDS

Table 3.12 provides population forecast through the year 2050 for Carteret County, as well as all participating municipal jurisdictions. Municipal forecasts are based on the annual growth rate calculated from 2000 and 2023 population change presented in Table 3.11. According to the North Carolina Office of State Budget and Management (NCOSBM), the population of Carteret County is expected to increase by approximately 20.7 percent by 2050 (a total of 14,239 more persons).

**Table 3.12 - Carteret County Population Projections, 2023-2050**

| Jurisdiction            | 2023          | 2030          | 2040          | 2050          | % Change 2023-2050 |
|-------------------------|---------------|---------------|---------------|---------------|--------------------|
| Atlantic Beach          | 1,705         | 1,684         | 1,654         | 1,624         | -4.8%              |
| Beaufort                | 4,613         | 4,865         | 5,225         | 5,585         | 21.1%              |
| Bogue                   | 800           | 863           | 953           | 1,023         | 27.9%              |
| Cape Carteret           | 2,598         | 3,018         | 3,618         | 4,218         | 62.4%              |
| Cedar Point             | 2,005         | 2,327         | 2,787         | 3,247         | 62.0%              |
| Emerald Isle            | 3,915         | 4,041         | 4,221         | 4,401         | 12.4%              |
| Indian Beach            | 229           | 264           | 314           | 364           | 59.0%              |
| Morehead City           | 9,696         | 10,305        | 11,175        | 12,045        | 24.2%              |
| Newport                 | 4,428         | 4,750         | 5,210         | 5,670         | 28.1%              |
| Peletier                | 779           | 863           | 983           | 1,103         | 41.6%              |
| Pine Knoll Shores       | 1,387         | 1,352         | 1,302         | 1,252         | -9.7%              |
| <b>Municipalities</b>   | <b>32,155</b> | <b>34,353</b> | <b>37,493</b> | <b>40,633</b> | <b>26.5%</b>       |
| Unincorporated Areas    | 36,527        | 37,150        | 38,080        | 38,930        | 6.6%               |
| <b>Carteret County*</b> | <b>68,682</b> | <b>73,690</b> | <b>78,307</b> | <b>82,921</b> | <b>20.7%</b>       |

Source: US Census Bureau American Community Survey and NCOSBM State/County Population Projections

Note: Municipal population projections were calculated using the linear growth formula, which assumes the same growth occurs annually. The annual growth rate (in persons) was determined by subtracting the initial population (2000) from the base population (2023) dividing it by the number of years (23 years). The annual growth rate (in person) was then multiplied by base population (2023) and number of years (7 years for 2030, 17 years for 2040, and 27 years for 2050).

\*Unlike the Municipal population projections, the County population projections were forecasted and provided by NCOSBM, which considers estimates of births, deaths, migration, and other demographic data.

### RACIAL DEMOGRAPHICS

The overall Carteret County population is predominantly Caucasian comprising 86.7 percent of residents, while most of the remaining population is either African American (4.4 percent) or is two or more races (5.6 percent). The racial composition of the County’s municipal jurisdictions is similar to the County makeup with the exception of the Towns of Beaufort, Newport, and Morehead City, which each have a higher African American population (9.5 percent average between the three communities) as well as a higher population of two or more races. Overall Carteret County has a Hispanic/Latino population of 4.7 percent. Municipalities with the largest Hispanic population throughout the County include Bogue (12.8 percent) and Morehead City (9.9 percent).

According to the American Community Survey, the 2023 median age in Carteret County was 50.1 years. Approximately 83 percent of the County’s population is over the age of eighteen, while 48.5 percent is male, and 51.5 percent is female. Table 3.13 provides a summary of racial composition for Carteret County, as well as all participating municipal jurisdictions.

**Table 3.13 - Carteret County Racial Composition**

| Jurisdiction           | Caucasian    | African-American | Asian       | Other Race* | Two or More Races | Persons of Hispanic or Latino Origin** |
|------------------------|--------------|------------------|-------------|-------------|-------------------|--|
| Atlantic Beach         | 91.8%        | 0.8%             | 0.4%        | 0.2%        | 6.9%              | 0.0%                                   |
| Beaufort               | 80.6%        | 11.7%            | 0.0%        | 3.3%        | 4.4%              | 1.9%                                   |
| Bogue                  | 92.9%        | 0.9%             | 0.5%        | 0.6%        | 5.1%              | 12.8%                                  |
| Cape Carteret          | 94.7%        | 0.3%             | 0.0%        | 0.0%        | 5.0%              | 3.2%                                   |
| Cedar Point            | 92.0%        | 0.8%             | 0.7%        | 1.9%        | 4.4%              | 4.3%                                   |
| Emerald Isle           | 93.2%        | 0.3%             | 0.2%        | 0.1%        | 6.4%              | 0.2%                                   |
| Indian Beach           | 93.9%        | 1.3%             | 0.9%        | 0.4%        | 3.5%              | 2.6%                                   |
| Morehead City          | 78.7%        | 5.6%             | 1.1%        | 3.3%        | 11.3%             | 9.9%                                   |
| Newport                | 74.0%        | 11.4%            | 2.6%        | 0.0%        | 12.0%             | 4.4%                                   |
| Peletier               | 86.8%        | 1.5%             | 6.0%        | 2.8%        | 2.8%              | 4.0%                                   |
| Pine Knoll Shores      | 98.2%        | 0.1%             | 0.0%        | 0.0%        | 1.7%              | 1.3%                                   |
| <b>Carteret County</b> | <b>86.7%</b> | <b>4.4%</b>      | <b>0.9%</b> | <b>2.4%</b> | <b>5.6%</b>       | <b>4.7%</b>                            |

\*Other races includes American Indian, Alaskan Native, Native Hawaiian, Pacific Islander, etc.

\*\*Persons of Hispanic or Latino Origin are classified regardless of race; therefore, this percentage is considered independent of the other race classifications listed.

Source: US Census Bureau American Community Survey.

### SOCIAL VULNERABILITY

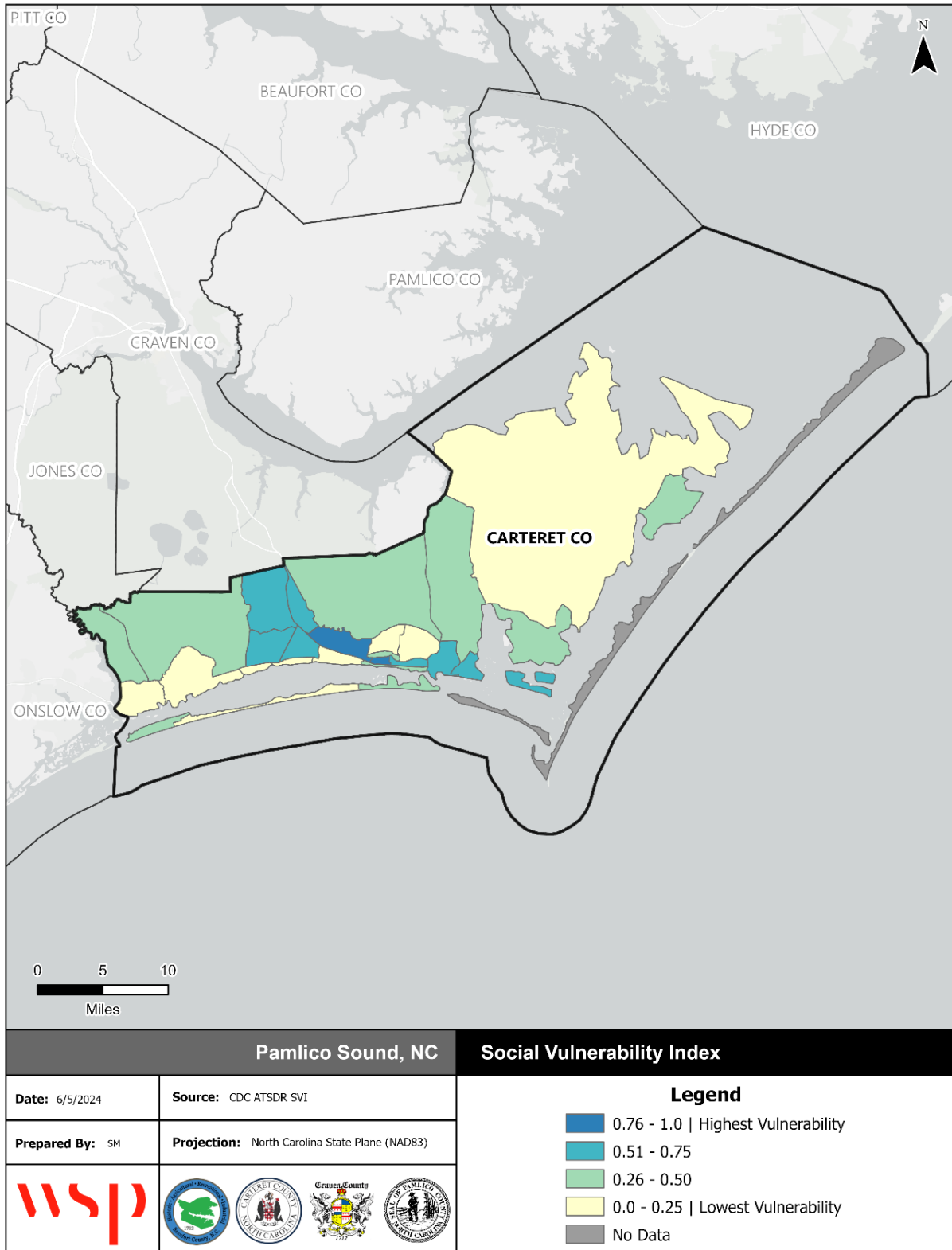
Figure 3.10 below displays social vulnerability information for Carteret County by census tract according to 2022 data and analysis by the Centers for Disease Control and Prevention (CDC). The CDC’s Social Vulnerability Index (SVI) indicates the relative vulnerability within census tracts based on 15 social factors: poverty, unemployment, income, education, age, disability, household composition, minority status, language, housing type, and transportation access. Higher social vulnerability is an indicator that a community may be limited in its ability to respond to and recover from hazard events. Therefore, using



this SVI information can help the County and municipal jurisdictions to prioritize pre-disaster aid, allocate emergency preparedness and response resources, and plan for the provision of recovery support.

Nearly all of Carteret County has a low to moderate SVI index. Aside from portions of the County in an around Morehead City and the Town of Newport, Carteret County is rural in nature and the availability of municipal/County infrastructure is available yet limited. Additionally, incomes throughout a majority of the County are lower than the NC State median.

Figure 3.10 – Carteret County Social Vulnerability Index



### 3.3.4 HOUSING CHARACTERISTICS

According to the American Community Survey, there were approximately 51,615 housing units in Carteret County as of 2023. This figure marks an 8.8 percent, or 4,156 unit, increase since 2010 for unincorporated portions of Carteret County. Although the County's housing unit growth has been somewhat modest, several County municipalities have experienced a much more rapid increase in their housing stock. Housing unit counts have increased by roughly 53.9 percent in Peletier, 25 percent in Cape Carteret, and 22.7 percent in Cedar Point over the same period. Residential housing counts have been fairly modest within the Bogue Banks beach communities, with Atlantic Beach, Pine Knoll Shores, and Emerald Isle all falling under 5 percent. The one exception to this growth was Indian Beach which experienced a higher residential growth rate of 13 percent.

Throughout Carteret County, the housing is predominantly comprised of owner occupants (73.5 percent). This percentage is generally characteristic of all municipal jurisdictions as well except for Beaufort and Morehead City, which maintain an owner occupancy rate below 50 percent. One unusual factor relating to home occupancy is that a majority of the County's barrier island beach communities maintain high rates of owner occupancy. This factor is important in regards to mitigation and post disaster recovery due to the fact that homeownership directly correlates to the long-term maintenance and flood proofing of property, as well as the eligibility for funding of impacted units following a flooding event associated with nor'easters and tropical storm/hurricanes.

In terms of vulnerability associated with natural hazard events such as tropical storms, hurricanes, and tornadoes, roughly 16.8 percent of the Carteret County housing stock is comprised of manufactured homes, which is higher than the state overall (10.5 percent). The prevalence of manufactured housing poses a unique threat regarding both sustainability, as well as emergency response within defined flood hazard areas.

Table 3.14 below provides a summary of housing characteristics for Carteret County, as well as participating municipal jurisdictions.

**Table 3.14 - Carteret County Housing Characteristics**

| Jurisdiction           | Housing Units (2010) | Housing Units (2023) | % Change 2010-2023 | % Owner Occupied (2023) | % Vacant Units (2023) |
|------------------------|----------------------|----------------------|--------------------|-------------------------|-----------------------|
| Atlantic Beach         | 4,935                | 5,166                | 4.7%               | 64.7%                   | 81.0%                 |
| Beaufort               | 2,745                | 3,112                | 13.4%              | 48.0%                   | 22.8%                 |
| Bogue                  | 296                  | 330                  | 11.5%              | 78.9%                   | 10.9%                 |
| Cape Carteret          | 1,027                | 1,284                | 25.0%              | 80.6%                   | 13.0%                 |
| Cedar Point            | 955                  | 1,172                | 22.7%              | 84.4%                   | 33.3%                 |
| Emerald Isle           | 6,735                | 6,802                | 1.0%               | 83.1%                   | 73.3%                 |
| Indian Beach           | 1,565                | 1,769                | 13.0%              | 100.0%                  | 93.8%                 |
| Morehead City          | 5,383                | 6,254                | 16.2%              | 47.3%                   | 19.8%                 |
| Newport                | 1,697                | 1,901                | 12.0%              | 61.5%                   | 11.3%                 |
| Peletier               | 393                  | 605                  | 53.9%              | 71.1%                   | 33.6%                 |
| Pine Knoll Shores      | 2,049                | 2,134                | 4.2%               | 97.8%                   | 68.2%                 |
| <b>Carteret County</b> | <b>47,459</b>        | <b>51,615</b>        | <b>8.8%</b>        | <b>73.5%</b>            | <b>39.6%</b>          |

Source: US Census Bureau American Community Survey.

### 3.3.5 WAGES, EMPLOYMENT AND INDUSTRY

The 2023 American Community Survey reports that the median household income for Carteret County was \$70,235 which is higher than the state's median household income (\$69,904). However, approximately 10 percent of the population is living below the poverty level. Moreover, 12.5 percent of people under 18 years of age are living below the poverty level.

Within Carteret County, approximately 55.6 percent of the population is in the labor force. This is generally characteristic of all participating municipal jurisdictions as well, with the exception of Pine Knoll Shores and Indian Beach. Throughout Carteret County, including all municipal jurisdictions, the percentage of the population currently employed is at or above 50 percent except for Atlantic Beach (40.8 percent), Emerald Isle (42.6 percent), Indian Beach (31.2 percent), Newport (47.8 percent), and Pine Knoll Shores (39.6 percent). According to the American Community Survey, the unemployment rate for Carteret County overall was 4.3 percent. Additionally, as of 2023, approximately 9.1 percent of households in Carteret County relied on food stamps/SNAP benefits.

The following tables provides a summary of key economic indicators and population employed by industry for both incorporated and unincorporated portions of Carteret County.

**Table 3.15 - Carteret County Key Economic Indicators**

| Jurisdiction           | Population in Labor Force | Percent Employed (%) | Percent Unemployed (%) | Percent Not in Labor Force (%) | Unemployment Rate (%) |
|------------------------|---------------------------|----------------------|------------------------|--------------------------------|-----------------------|
| Atlantic Beach         | 42.2%                     | 40.8%                | 1.4%                   | 57.8%                          | 3.2%                  |
| Beaufort               | 57.0%                     | 53.1%                | 3.9%                   | 43.0%                          | 6.8%                  |
| Bogue                  | 65.8%                     | 65.5%                | 0.0%                   | 34.2%                          | 0.0%                  |
| Cape Carteret          | 55.0%                     | 50.8%                | 1.2%                   | 45.0%                          | 2.3%                  |
| Cedar Point            | 57.1%                     | 52.4%                | 1.6%                   | 42.9%                          | 3.1%                  |
| Emerald Isle           | 45.0%                     | 42.6%                | 0.6%                   | 55.0%                          | 1.4%                  |
| Indian Beach           | 35.1%                     | 31.2%                | 4.0%                   | 64.9%                          | 11.3%                 |
| Morehead City          | 59.7%                     | 56.4%                | 2.1%                   | 40.3%                          | 3.6%                  |
| Newport                | 54.2%                     | 47.8%                | 4.1%                   | 45.8%                          | 7.9%                  |
| Peletier               | 57.0%                     | 50.0%                | 7.0%                   | 43.0%                          | 12.3%                 |
| Pine Knoll Shores      | 41.5%                     | 39.6%                | 1.3%                   | 58.5%                          | 3.1%                  |
| <b>Carteret County</b> | <b>55.6%</b>              | <b>52.1%</b>         | <b>2.3%</b>            | <b>44.4%</b>                   | <b>4.3%</b>           |

Source: US Census Bureau American Community Survey.

**Table 3.16 - Carteret County Employment by Industry**

| Jurisdiction   | Management, Business, Science and Arts (%) | Service (%) | Sales and Office (%) | Natural Resources, Construction, and Maintenance (%) | Production, Transportation, and Material Moving (%) |
|----------------|--|-------------|----------------------|--|---|
| Atlantic Beach | 48.0%                                      | 9.1%        | 23.8%                | 12.7%  | 6.4%  |
| Beaufort       | 41.0%                                      | 17.9%       | 23.2%                | 5.4%   | 12.6%   |
| Bogue          | 33.3%                                      | 23.0%       | 18.9%                | 10.0%  | 14.7%   |
| Cape Carteret  | 41.0%                                      | 22.4%       | 17.5%                | 15.1%  | 4.0%  |
| Cedar Point    | 48.0%                                      | 14.7%       | 20.6%                | 2.7%   | 14.0%   |
| Emerald Isle   | 47.0%                                      | 12.0%       | 29.2%                | 5.0%   | 6.8%  |
| Indian Beach   | 66.7%                                      | 6.3%        | 22.2%                | 3.2%   | 1.6%  |

### SECTION 3: PLANNING AREA PROFILE

| Jurisdiction           | Management, Business, Science and Arts (%) | Service (%) | Sales and Office (%) | Natural Resources, Construction, and Maintenance (%) | Production, Transportation, and Material Moving (%) |
|------------------------|--|-------------|----------------------|--|---|
| Morehead City          | 41.8%                                      | 25.8%       | 14.6%                | 6.9%   | 11.0%   |
| Newport                | 45.4%                                      | 12.7%       | 19.9%                | 9.0%   | 12.9%   |
| Peletier               | 17.5%                                      | 23.6%       | 24.2%                | 28.8%  | 5.8%  |
| Pine Knoll Shores      | 55.7%                                      | 12.1%       | 25.3%                | 3.0%   | 4.0%  |
| <b>Carteret County</b> | 39.9%                                      | 18.0%       | 20.1%                | 9.4%   | 12.5%   |

Source: US Census Bureau American Community Survey.

The top industries in Carteret County include (1) Management, Business, Science, and Arts, (2) Sales and Office, and (3) Service industries. The top 10 employers in the County are listed below:

- Carteret County Board of Education
- Carteret County General Hospital
- County of Carteret
- Wal-Mart Associates, Inc.
- Lowes Home Center, Inc.
- Carteret Technical College
- Food Lion
- Bally Refrigerated Boxes, Inc.
- Town of Morehead City Human Resources
- PMC of North Carolina, LLC.

#### 3.3.6 HISTORIC PROPERTIES

As of January 2025, Carteret County had 15 listings on the National Register of Historic Places. This list includes 12 Historic Structures and 3 Historic Districts. Presence on the National Register signifies that these structures have been determined to be worthy of preservation for their historical or cultural values. The following provides a comprehensive listing of all Nationally Registered Properties in Carteret County.

- Fort Macon (Atlantic Beach) – 2/26/1970
- Queen Anne’s Revenge (Atlantic Beach) – 3/9/2004
- Beaufort Historic District (Beaufort) – 5/6/1974
- Cape Lookout Coast Guard Station (Beaufort) – 2/1/1989
- Carteret County Home (Beaufort) – 12/20/1984
- Gibbs House (Beaufort) – 3/14/1973
- Henry, Jacob House (Beaufort) – 5/7/1973
- Old Burying Ground (Beaufort) – 4/8/1974
- Cape Lookout Light Station (Core Banks) – 10/18/1972
- Cape Lookout Village Historic District (Harkers Island) – 6/3/2000
- Morehead City Historic District (Morehead City) – 4/18/2003
- Morehead City Municipal Building (Morehead City) – 8/11/2004
- Salter-Battle Hunting and Fishing Lodge (Ocracoke) – 5/5/2005

- Earle W. Webb, Jr. Memorial Civic Center and Library (Morehead City) – 8/20/2021
- Portsmouth Village (Portsmouth) – 11/29/1978

**3.3.7 LAND DEVELOPMENT TRENDS**

Throughout Carteret County, approximately 65 percent of parcels are currently developed. Table 3.17 provides an overview of developed and undeveloped properties located throughout Carteret County. Most of the development is focused along coastal areas, in particular the Towns of Beaufort and Morehead City, as well as communities located along Bogue Banks. However, the County is also home to a burgeoning agricultural industry. Additional development is centralized along key highway corridors.

**Table 3.17 - Carteret County Developed and Undeveloped Parcel Counts**

| Jurisdiction                   | Developed Parcels | Undeveloped Parcels | % Developed Parcels |
|--------------------------------|-------------------|---------------------|---------------------|
| Atlantic Beach                 | 4,387             | 752                 | 85.4%               |
| Beaufort                       | 2,284             | 1,623               | 58.5%               |
| Bogue                          | 296               | 194                 | 60.4%               |
| Cape Carteret                  | 890               | 652                 | 57.7%               |
| Cedar Point                    | 745               | 685                 | 52.1%               |
| Emerald Isle                   | 6,181             | 1,319               | 82.4%               |
| Indian Beach                   | 976               | 162                 | 85.8%               |
| Morehead City                  | 4,415             | 2,040               | 68.4%               |
| Newport                        | 1,304             | 428                 | 75.3%               |
| Peletier                       | 323               | 420                 | 43.5%               |
| Pine Knoll Shores              | 2,065             | 372                 | 84.7%               |
| Unincorporated Carteret County | 17,449            | 13,171              | 57.0%               |
| <b>Total</b>                   | <b>41,315</b>     | <b>21,818</b>       | <b>65.4%</b>        |

Source: County Parcel GIS Data and iRisk Building Footprints

Future development throughout Carteret County is characterized by each community’s respective Future Land Use Map. Carteret County, Atlantic Beach, Beaufort, Cedar Point, Cape Carteret, Morehead City, and Newport have all updated their comprehensive or land use plans within the last five years. Within unincorporated Carteret County, the 2021 CAMA Land Use Plan defines development policy. The Towns of Bogue and Peletier fall under the purview of the Carteret County plan. Most residential and non-residential development in Carteret County is expected to occur along the NC Highway 24 corridor between the Town of Morehead City and the Town of Bogue and along NC Highway 10 north of the Town of Beaufort.

Future development within incorporated towns located along Bogue Banks will generally occur as infill growth. Municipal infrastructure services limit development potential within these areas and non-residential development is generally relegated to properties fronting NC Highway 58, which connects Emerald Isle to Atlantic Beach. Opportunities for greenfield development are limited throughout Bogue Banks communities due to a lack of available land. Additionally, high density condo development is generally not possible due to a lack of central sewer service throughout Bogue Banks, with the exception of those properties served by package treatment systems. The most substantial package treatment system on the island is located within the Town of Atlantic Beach and serves development associated with the Grove located around the Circle in the center of town.

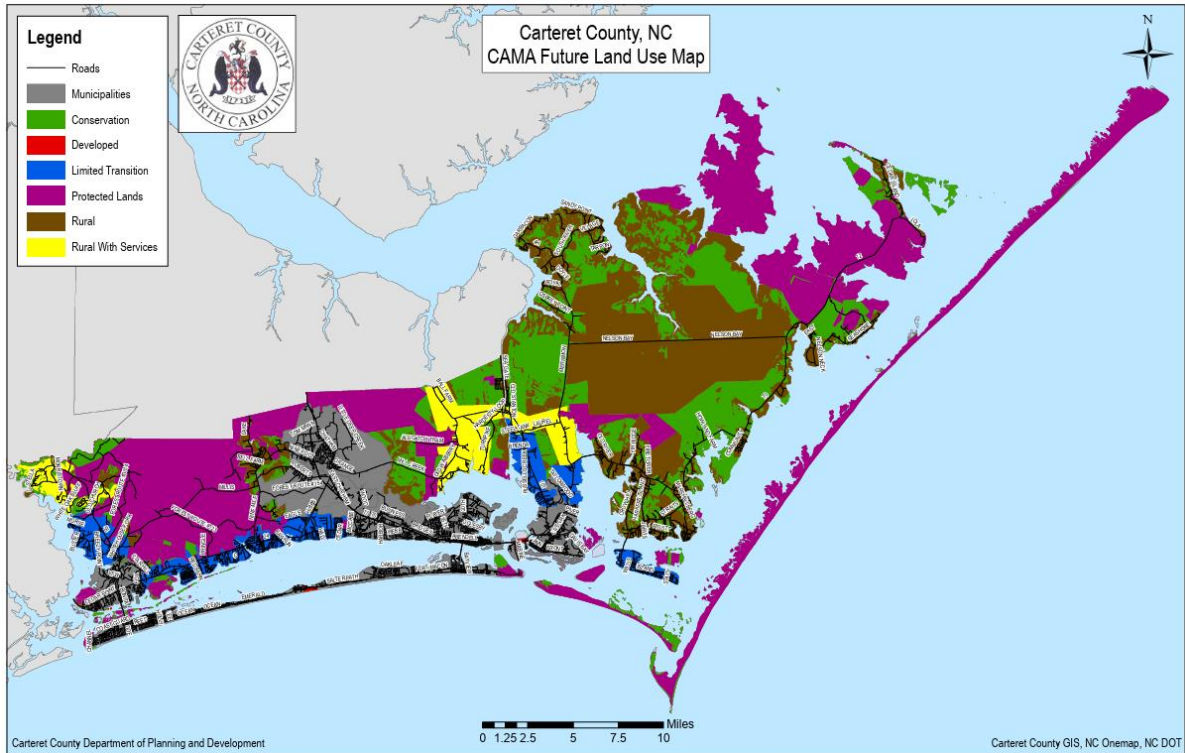
Growth and development within the County’s mainland incorporated areas is expected to take place in a more traditional manner. Development and redevelopment of non-residential uses is expected to occur

**SECTION 3: PLANNING AREA PROFILE**

within and adjacent to each respective community’s commercial core. Mixed use opportunities will also exist within these areas, while additional commercial/office type development will also occur adjacent to key thoroughfares leading out to unincorporated portions of the County. The Towns of Morehead City, Beaufort, and Newport also have portions of their corporate limits that will support light industrial growth without generating adverse impacts on adjoining properties.

Future land use maps from each community’s land use plan are provided in Figure 3.11 through Figure 3.19 below.

**Figure 3.11 - Carteret County Future Land Use Map**



**Figure 3.12 - Town of Atlantic Beach Future Land Use Map**

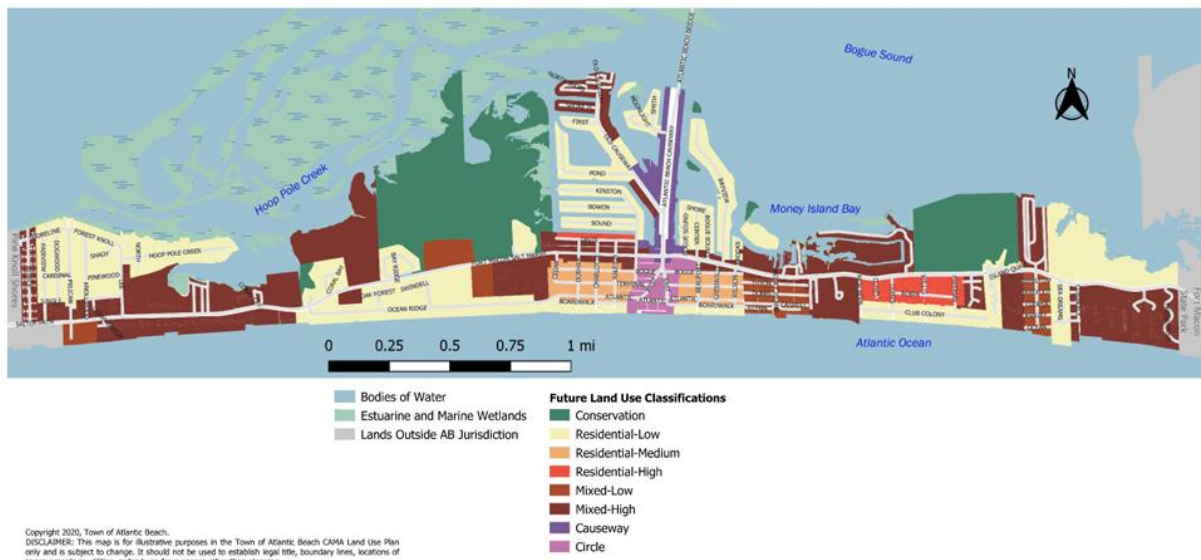


Figure 3.13 - Town of Beaufort Future Land Use Map

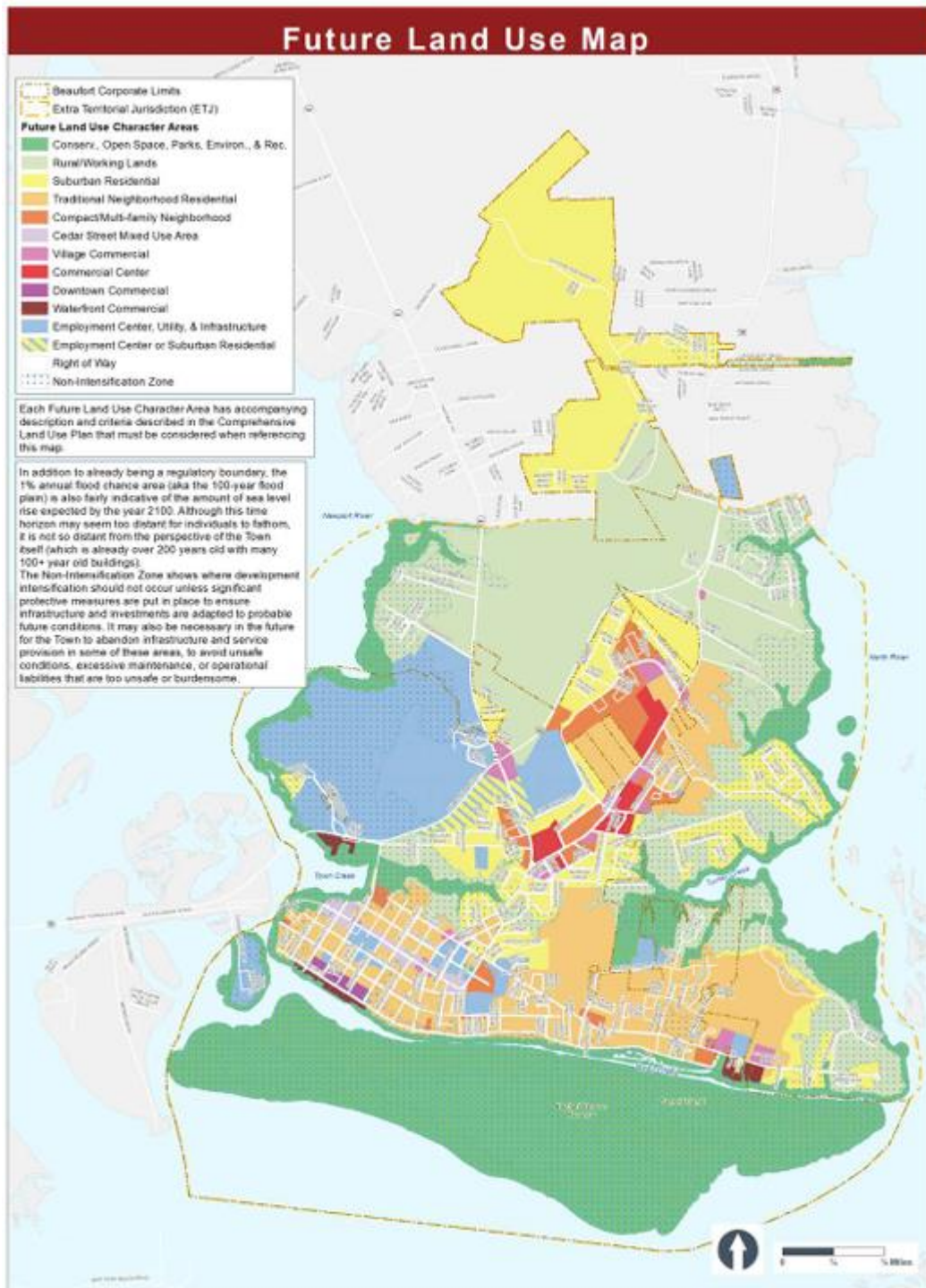




Figure 3.14 - Town of Cape Carteret Future Land Use

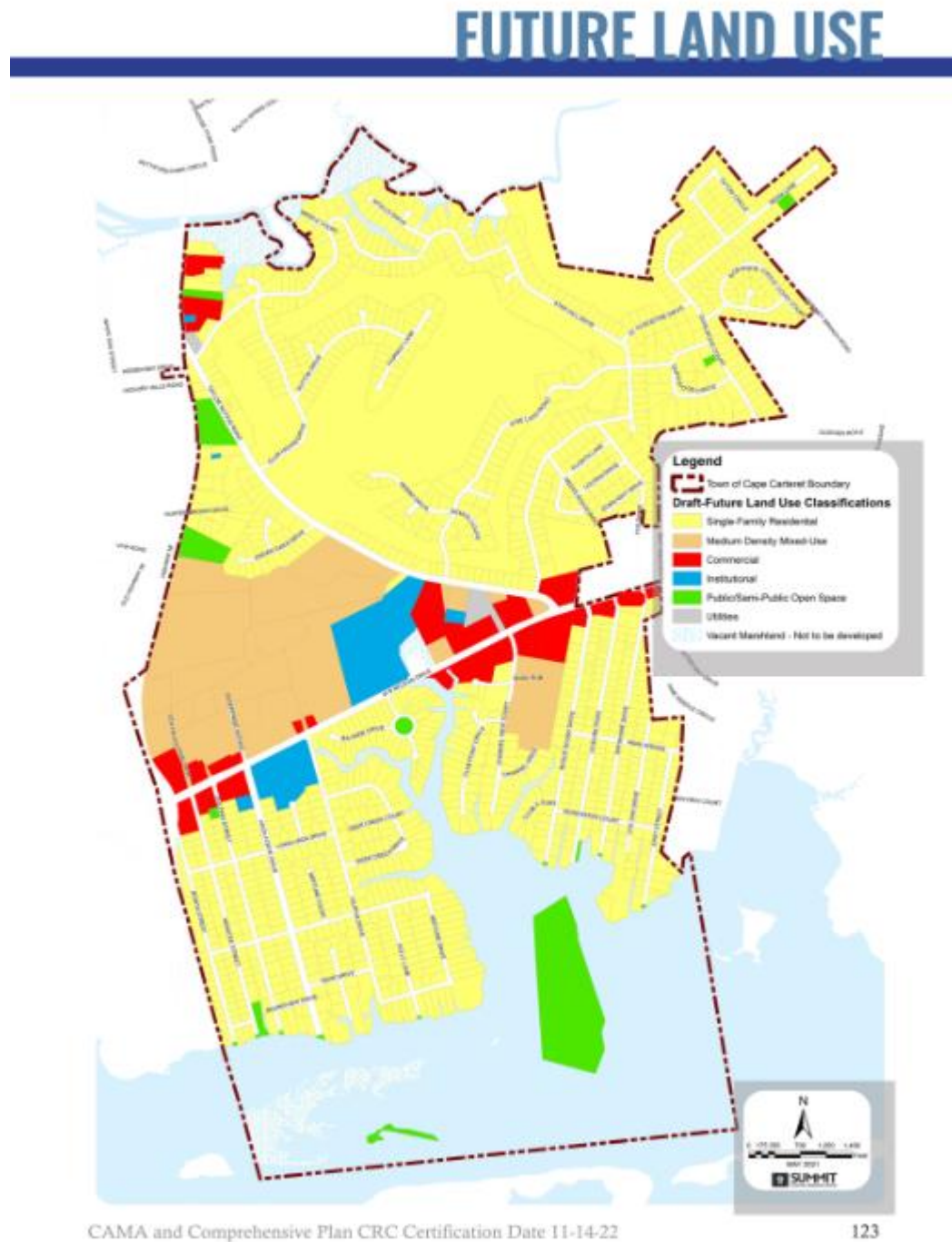
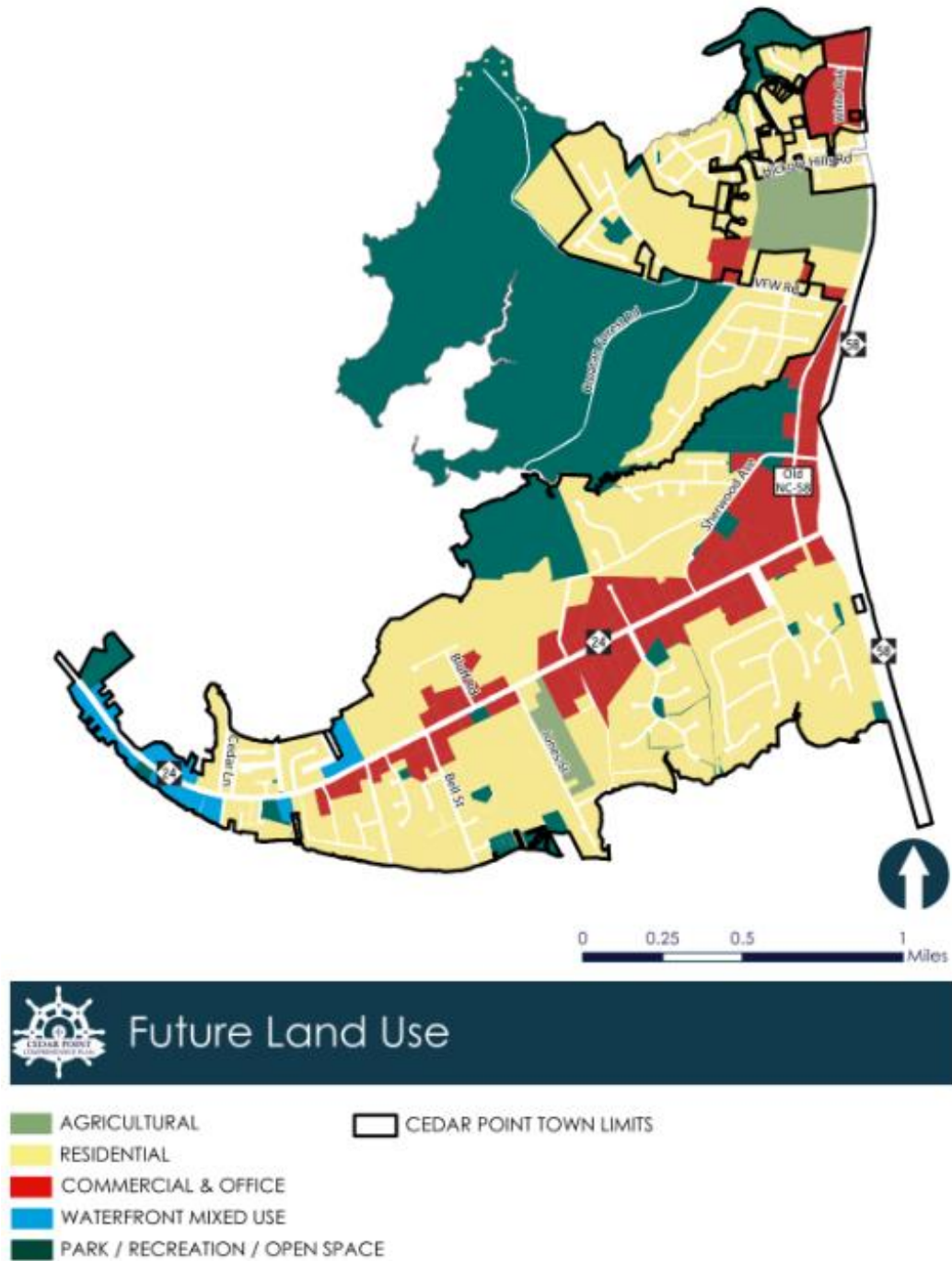


Figure 3.15 - Town of Cedar Point Future Land Use



SECTION 3: PLANNING AREA PROFILE

Figure 3.16 - Town of Emerald Isle Future Land Use Map

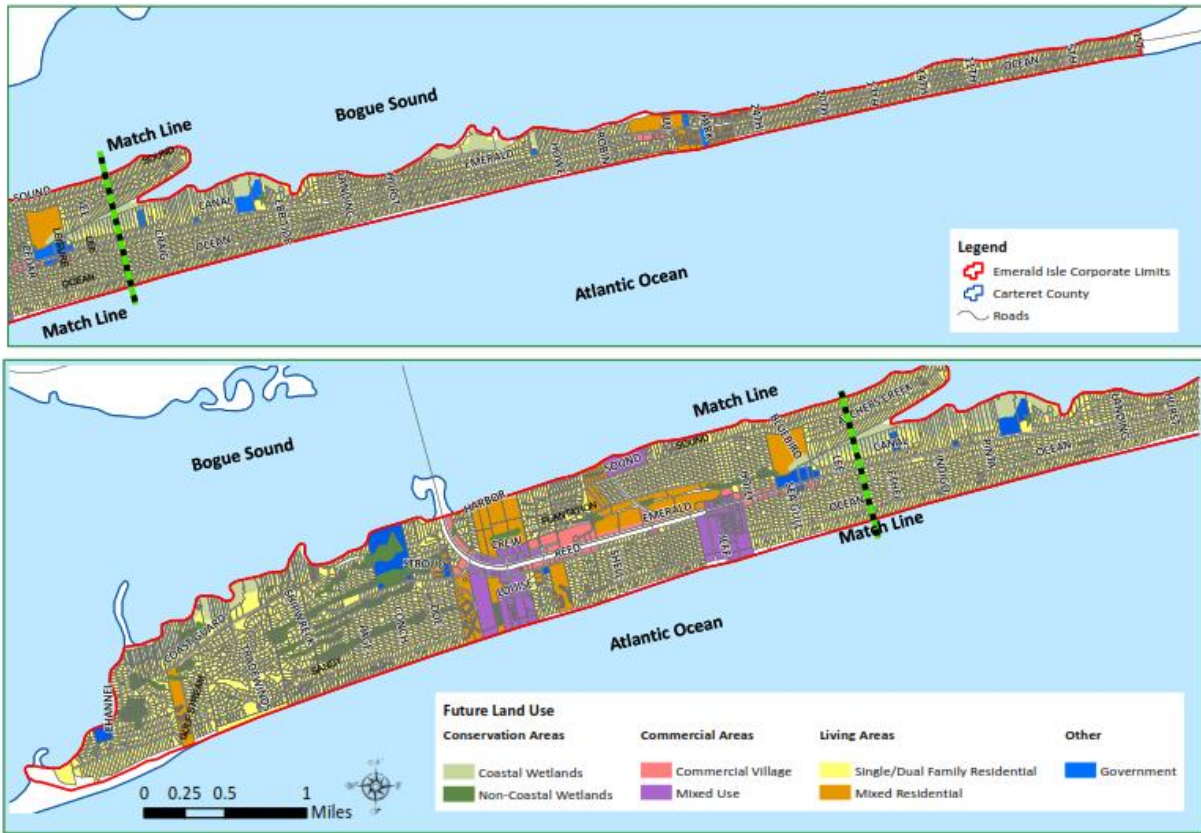


Figure 3.17 - Town of Indian Beach Future Land Use Map



HCP  
Holland Consulting Planners, Inc.

The preparation of this map was financed in part through a grant provided by the North Carolina Coastal Management Program, through funds provided by the Coastal Zone Management Act of 1972, as amended, which is administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration.



MAP 17  
Town of Indian Beach  
Land Use Plan

Future Land Use



Page 125

Figure 3.18 - Town of Newport Future Land Use Map

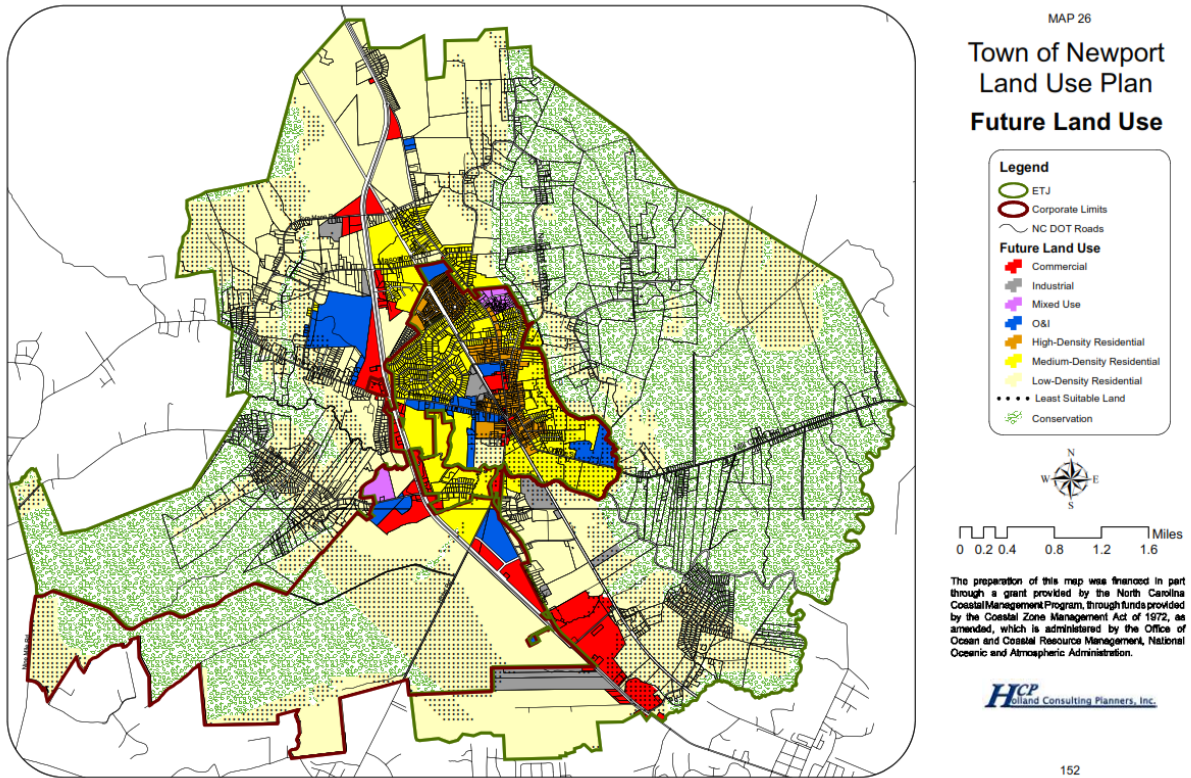


Figure 3.19 - Town of Pine Knoll Shores Future Land Use Map

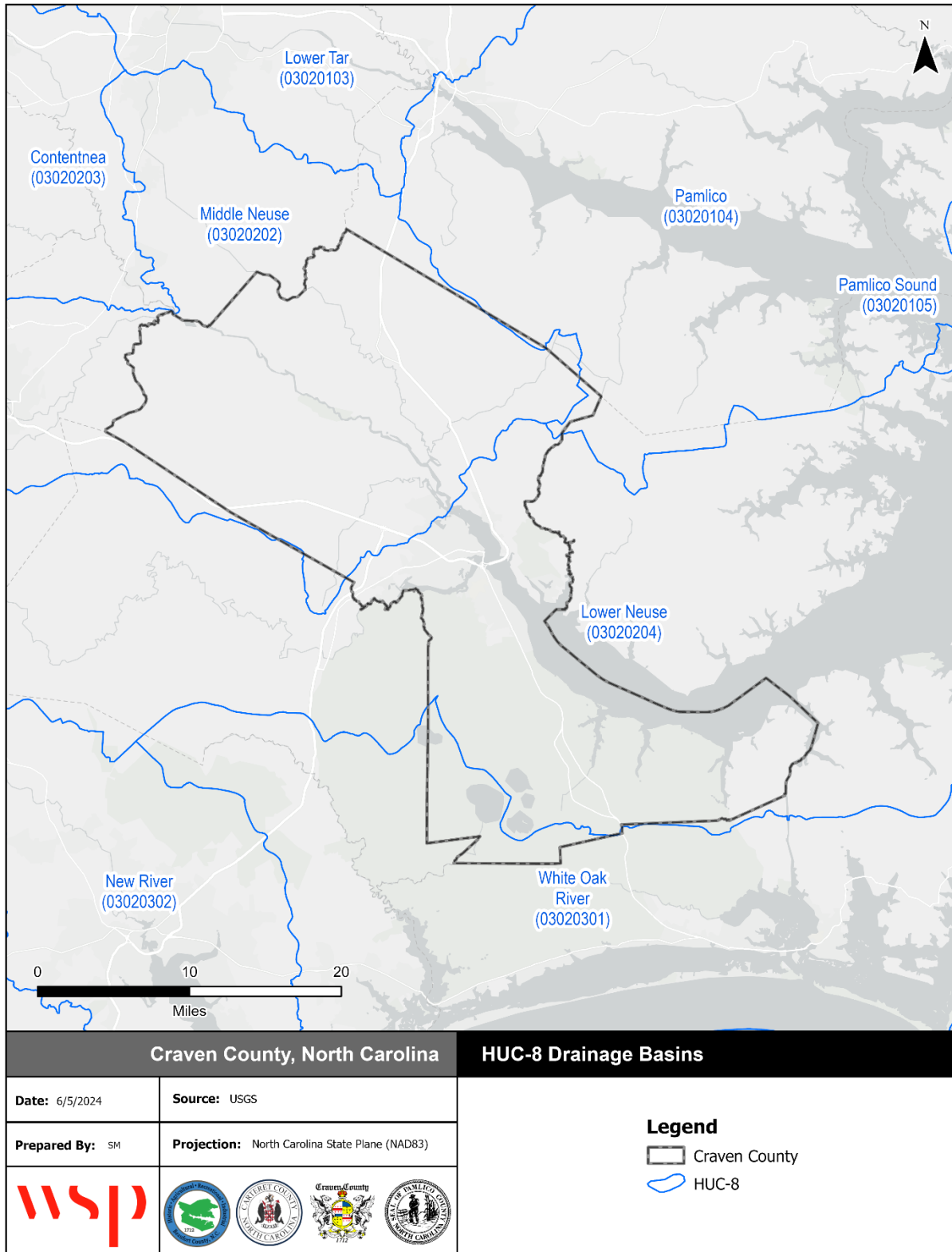


## 3.4 CRAVEN COUNTY

### 3.4.1 HYDROLOGY

As with Carteret County, Craven County has three separate river basins traversing through its boundaries. These basins include the Onslow Bay, Neuse, and Pamlico, as shown in Figure 3.9. Descriptions of these river basins can be found in Section 3.2.8.

Figure 3.20 - Craven County, HUC8 River Basins



Source: National Hydrology Dataset

### 3.4.2 PARKS AND OPEN SPACE

There are several parks located throughout Craven County, both within unincorporated portions of the County, as well as within participating municipalities. Additionally, a portion of the Croatan National Forest is located within Craven County. The Croatan National Forest is one of four National Forests in North Carolina and the only true coastal forest in the East. Refer to the Carteret County Parks and Open Space discussion for more details regarding the Croatan National Forest.

The following provides a listing of parks and recreational facilities located in Craven County:

- Creekside Park – 1821 Old Airport Rd, New Bern, NC
- West Craven Park – 2791 Streets Ferry Rd, Vanceboro, NC
- Latham-Whitehurst Nature Park – 1095 Broad Creek Rd, New Bern, NC
- Rocky Run Park – 411 Rocky Run Rd, New Bern, NC

### 3.4.3 DEMOGRAPHICS

#### POPULATION TOTAL

The total population of Craven County according to the 2023 American Community Survey was 101,074 persons. Population growth throughout unincorporated portions of Craven County has been moderate since Census year 2000 at a rate of 18.5 percent while some municipalities have experienced rapid growth like Bridgeton (71 percent), Cove City (34.6 percent), and New Bern (36.6 percent). On the contrary, some participating municipalities have experienced declining populations during the same time period including Dover (-14.5 percent), Havelock (-26.6 percent), River Bend (-0.9 percent), and Trent Woods (-3.3 percent).

Table 3.18 provides a breakdown of total population for Craven County and the participating municipalities for the years 2000, 2010, 2020, and 2023.

**Table 3.18 – Craven County Total Population**

| Jurisdiction          | 2000          | 2010          | 2020           | 2023           | % Change<br>2010-2023 | Overall % Change<br>2000-2023 |
|-----------------------|---------------|---------------|----------------|----------------|-----------------------|-------------------------------|
| Bridgeton             | 328           | 454           | 346            | 561            | -23.7%                | 71.0%                         |
| Cove City             | 433           | 399           | 381            | 583            | -4.5%                 | 34.6%                         |
| Dover                 | 443           | 401           | 349            | 379            | -13.0%                | -14.5%                        |
| Havelock              | 22,442        | 20,735        | 16,688         | 16,471         | -19.5%                | -26.6%                        |
| New Bern              | 23,111        | 29,524        | 31,287         | 31,563         | 6.0%                  | 36.6%                         |
| River Bend            | 2,923         | 3,119         | 2,899          | 2,896          | -7.1%                 | -0.9%                         |
| Trent Woods           | 4,224         | 4,155         | 4,079          | 4,086          | -1.8%                 | -3.3%                         |
| Vanceboro             | 898           | 1,055         | 872            | 939            | -17.4%                | 4.6%                          |
| <b>Municipalities</b> | <b>54,802</b> | <b>59,842</b> | <b>56,901</b>  | <b>57,478</b>  | <b>-4.9%</b>          | <b>4.9%</b>                   |
| Unincorporated Areas  | 36,784        | 36,721        | 43,891         | 43,596         | 19.5%                 | 18.5%                         |
| <b>Total</b>          | <b>91,586</b> | <b>96,563</b> | <b>100,792</b> | <b>101,074</b> | <b>4.4%</b>           | <b>10.4%</b>                  |

Source: US Census Bureau American Community Survey.

#### GROWTH TRENDS

Table 3.12 provides population forecast through the year 2050 for Craven County, as well as all participating municipal jurisdictions. Municipal forecasts are based on the annual growth rate calculated from 2000 and 2023 population change presented in Table 3.18. According to the North Carolina Office

of State Budget and Management (NCOSBM), the population of Craven County is expected to increase by approximately 2.2 percent by 2050 (a total of 2,261 more persons).

**Table 3.19 - Craven County Population Projections, 2023-2050**

| Jurisdiction          | 2023           | 2030           | 2040           | 2050           | % Change 2023-2050 |
|-----------------------|----------------|----------------|----------------|----------------|--------------------|
| Bridgeton             | 561            | 631            | 731            | 831            | 48.1%              |
| Cove City             | 583            | 625            | 685            | 745            | 27.8%              |
| Dover                 | 379            | 365            | 345            | 325            | -14.3%             |
| Havelock              | 16,471         | 14,658         | 12,068         | 9,478          | -42.5%             |
| New Bern              | 31,563         | 34,132         | 37,802         | 41,472         | 31.4%              |
| River Bend            | 2,896          | 2,889          | 2,879          | 2,869          | -0.9%              |
| Trent Woods           | 4,086          | 4,044          | 3,984          | 3,924          | -4.0%              |
| Vanceboro             | 939            | 932            | 922            | 912            | -2.9%              |
| <b>Municipalities</b> | <b>57,478</b>  | <b>58,290</b>  | <b>59,450</b>  | <b>60,610</b>  | <b>5.5%</b>        |
| Unincorporated Areas  | 43,596         | 45,668         | 48,628         | 51,588         | 18.3%              |
| <b>Craven County*</b> | <b>101,074</b> | <b>103,334</b> | <b>103,336</b> | <b>103,335</b> | <b>2.2%</b>        |

Source: US Census Bureau American Community Survey and NCOSBM State/County Population Projections

Note: Municipal population projections were calculated using the linear growth formula, which assumes the same growth occurs annually. The annual growth rate (in persons) was determined by subtracting the initial population (2000) from the base population (2023) dividing it by the number of years (23 years). The annual growth rate (in person) was then multiplied by base population (2023) and number of years (7 years for 2030, 17 years for 2040, and 27 years for 2050).

\*Unlike the Municipal population projections, the County population projections were forecasted and provided by NCOSBM, which considers estimates of births, deaths, migration, and other demographic data.

### RACIAL DEMOGRAPHICS

The overall Craven County population is predominantly Caucasian comprising 67.4 percent of residents, while most of the remaining population is African American (20.3 percent). The racial composition of the County’s municipal jurisdictions varies substantially. The Town of Dover is predominantly African American (59.6 percent), while Cove City, New Bern, and Vanceboro have an African American population over 25 percent. One other unique characteristic is that the City of New Bern maintains an Asian population of 5.8 percent. Overall, Craven County has a Hispanic/Latino population of 7.4 percent. Municipalities with the largest Hispanic population in the County include Bridgeton (38.9 percent) and Havelock (15.1 percent).

According to the American Community Survey, the 2023 median age in Craven County was 39.2 years. Approximately 78 percent of the County’s population is over the age of eighteen, while 50 percent is male and 50 percent is female. Table 3.20 provides a summary of racial composition for Craven County, as well as all participating municipal jurisdictions.

**Table 3.20 - Craven County Racial Composition**

| Jurisdiction | Caucasian | African-American | Asian | Other Race* | Two or More Races | Persons of Hispanic or Latino Origin** |
|--------------|-----------|------------------|-------|-------------|-------------------|--|
| Bridgeton    | 80.2%     | 10.9%            | 0.0%  | 8.9%        | 0.0%              | 38.9%                                  |
| Cove City    | 61.1%     | 28.0%            | 0.0%  | 1.4%        | 9.6%              | 7.7%                                   |
| Dover        | 33.0%     | 59.6%            | 0.0%  | 0.0%        | 7.4%              | 0.3%                                   |
| Havelock     | 61.3%     | 18.2%            | 3.8%  | 3.4%        | 13.1%             | 15.1%                                  |
| New Bern     | 55.0%     | 28.9%            | 5.8%  | 3.8%        | 6.6%              | 6.1%                                   |
| River Bend   | 83.7%     | 12.6%            | 0.0%  | 0.5%        | 3.1%              | 3.3%                                   |



| <b>Jurisdiction</b>  | <b>Caucasian</b> | <b>African-American</b> | <b>Asian</b> | <b>Other Race*</b> | <b>Two or More Races</b> | <b>Persons of Hispanic or Latino Origin**</b> |
|----------------------|------------------|-------------------------|--------------|--------------------|--------------------------|---|
| Trent Woods          | 99.0%            | 0.0%                    | 0.0%         | 0.1%               | 0.8%                     | 0.1%  |
| Vanceboro            | 50.2%            | 45.2%                   | 0.0%         | 2.3%               | 2.3%                     | 3.0%  |
| <b>Craven County</b> | <b>67.4%</b>     | <b>20.3%</b>            | <b>2.7%</b>  | <b>2.8%</b>        | <b>6.8%</b>              | <b>7.4%</b>                                   |

\*Other races includes American Indian, Alaskan Native, Native Hawaiian, Pacific Islander, etc.

\*\*Persons of Hispanic or Latino Origin are classified regardless of race; therefore, this percentage is considered independent of the other race classifications listed.

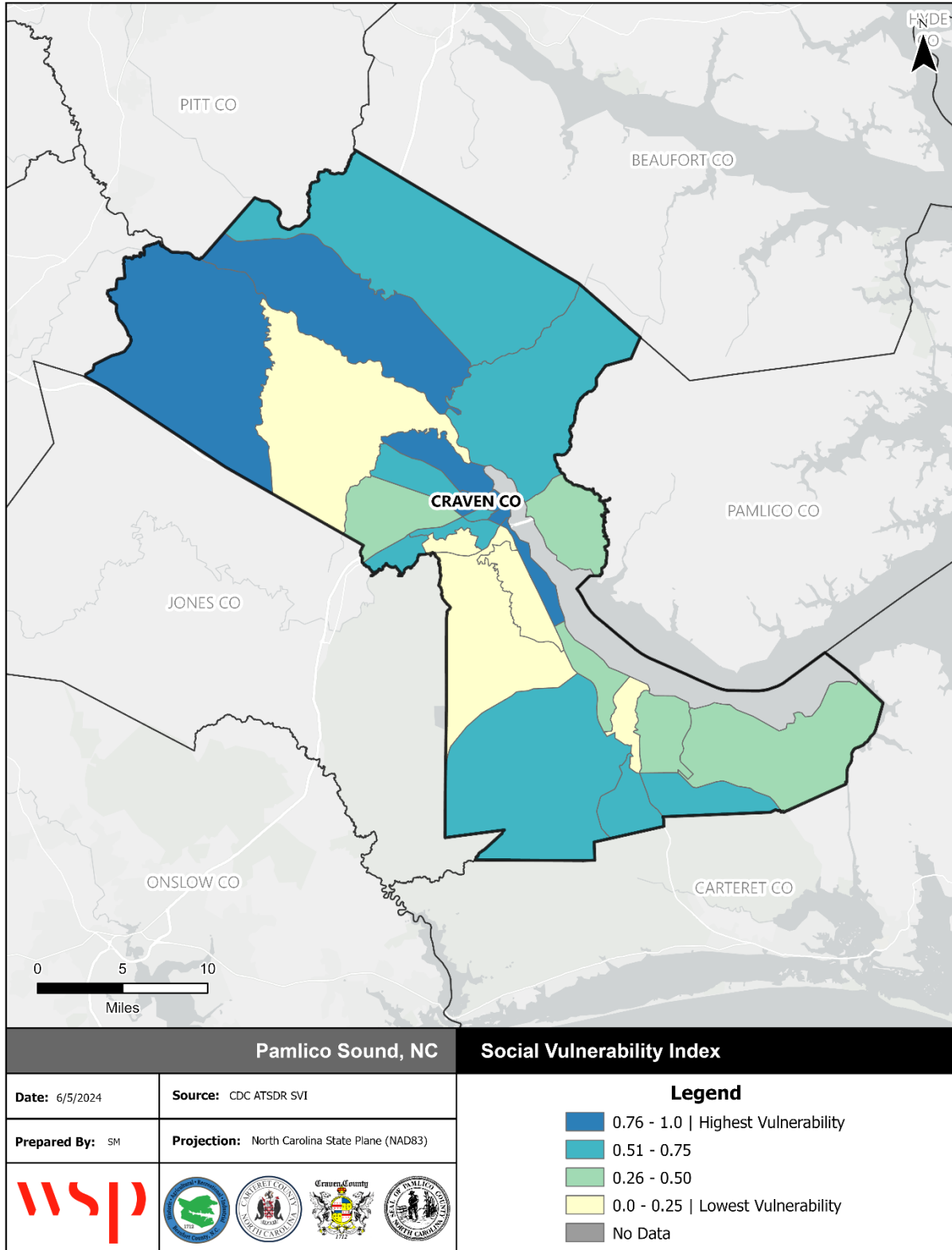
Source: US Census Bureau American Community Survey.

## **SOCIAL VULNERABILITY**

Figure 3.21 below displays social vulnerability information for Craven County by census tract according to 2022 data and analysis by the Centers for Disease Control and Prevention (CDC). The CDC’s Social Vulnerability Index (SVI) indicates the relative vulnerability within census tracts based on 15 social factors: poverty, unemployment, income, education, age, disability, household composition, minority status, language, housing type, and transportation access. Higher social vulnerability is an indicator that a community may be limited in its ability to respond to and recover from hazard events. Therefore, using this SVI information can help the County and municipal jurisdictions to prioritize pre-disaster aid, allocate emergency preparedness and response resources, and plan for the provision of recovery support.

The SVI throughout Craven County is moderate to high with highest vulnerability in Northern portions of Craven County, in and around Cove City, Vanceboro, and Dover. Central portions of the County in and around the City of New Bern and Town of Bridgeton also have a high SVI index, while portions Northwest of Havelock and Southeast of Cove City have a much lower SVI score. Within Craven County development is distributed more evenly throughout the County than other portions of Pamlico Region; however, developed density is higher throughout northern Craven County.

Figure 3.21 - Craven County Social Vulnerability Index



### 3.4.4 HOUSING CHARACTERISTICS

According to the American Community Survey, there were approximately 47,404 housing units in Craven County as of 2023. This figure marks a 7 percent, or 3,102 unit, increase since 2010 for unincorporated portions of Craven County. Although the County's housing unit growth has been somewhat modest, several County municipalities have experienced a much more rapid increase in their housing stock. Housing unit counts have increased by roughly 24.7 percent in Bridgeton and 33.2 percent in Vanceboro over the same period. With the exception of these two municipalities, housing starts have been slow throughout Craven County.

Housing in Craven County is predominantly comprised of owner occupants (69.9 percent). Overall, the County and its municipalities maintain a fairly high owner occupancy rate. Of the eight (8) municipal jurisdictions, six (6) have an owner occupancy rate above 50 percent. This factor is important in regards to mitigation and post disaster recovery due to the fact that homeownership directly correlates to the long term maintenance and flood proofing of property, as well as the eligibility for funding of impacted units following a flooding event associated with nor'easters and tropical storm/hurricanes.

In terms of vulnerability associated with natural hazard events such as tropical storms, hurricanes, and tornadoes, roughly 13.2 percent of the Craven County housing stock is comprised of manufactured homes, which is higher than the state average of 10.5 percent. The prevalence of manufactured housing poses a unique threat regarding both sustainability, as well as emergency response within defined flood hazard areas.

Table 3.21 below provides a summary of housing characteristics for Craven County, as well as participating municipal jurisdictions.

**Table 3.21 – Craven County Housing Characteristics**

| Jurisdiction         | Housing Units (2010) | Housing Units (2023) | % Change 2010-2023 | % Owner Occupied (2023) | % Vacant Units (2023) |
|----------------------|----------------------|----------------------|--------------------|-------------------------|-----------------------|
| Bridgeton            | 194                  | 242                  | 24.7%              | 58.3%                   | 14.9%                 |
| Cove City            | 230                  | 248                  | 7.8%               | 66.8%                   | 5.2%                  |
| Dover                | 258                  | 194                  | -24.8%             | 64.7%                   | 12.4%                 |
| Havelock             | 6,844                | 5,840                | -14.7%             | 45.0%                   | 12.3%                 |
| New Bern             | 14,504               | 16,314               | 12.5%              | 60.1%                   | 12.1%                 |
| River Bend           | 1,618                | 1,627                | 0.6%               | 88.3%                   | 17.3%                 |
| Trent Woods          | 1,805                | 1,867                | 3.4%               | 92.8%                   | 6.7%                  |
| Vanceboro            | 359                  | 478                  | 33.2%              | 46.4%                   | 15.7%                 |
| <b>Craven County</b> | <b>44,302</b>        | <b>47,404</b>        | <b>7.0%</b>        | <b>69.9%</b>            | <b>12.5%</b>          |

Source: US Census Bureau American Community Survey.

### 3.4.5 WAGES, EMPLOYMENT AND INDUSTRY

The 2023 American Community Survey reports that the median household income for the Craven County was \$64,635, which is slightly lower than the state's median household income of (\$69,904). However, approximately 17.6 percent of the population is living below the poverty level. Moreover, 31.3 percent of people under 18 years of age are living below the poverty level.

Within Craven County, approximately 58.9 percent of the population is in the labor force. This is generally characteristic of all participating municipal jurisdictions as well, apart from Cove City, River Bend, and Dover which fall under 50 percent. According to the American Community Survey, the

**SECTION 3: PLANNING AREA PROFILE**

unemployment rate for Craven County overall was 4.5 percent. Additionally, as of 2023, approximately 15.9 percent of households throughout Craven County relied on food stamps/SNAP benefits.

The following tables provides a summary of key economic indicators and population employed by industry for both incorporated and unincorporated portions of Craven County.

**Table 3.22 – Craven County Key Economic Indicators**

| Jurisdiction         | Population in Labor Force | Percent Employed (%) | Percent Unemployed (%) | Percent Not in Labor Force (%) | Unemployment Rate (%) |
|----------------------|---------------------------|----------------------|------------------------|--------------------------------|-----------------------|
| Bridgeton            | 54.3%                     | 44.9%                | 6.5%                   | 45.7%                          | 12.6%                 |
| Cove City            | 44.7%                     | 44.7%                | 0.0%                   | 55.3%                          | 0.0%                  |
| Dover                | 43.8%                     | 41.4%                | 2.4%                   | 56.2%                          | 5.5%                  |
| Havelock             | 77.0%                     | 41.3%                | 2.2%                   | 23.0%                          | 5.1%                  |
| New Bern             | 60.1%                     | 55.5%                | 2.4%                   | 39.9%                          | 4.1%                  |
| River Bend           | 45.7%                     | 44.3%                | 1.4%                   | 54.3%                          | 3.2%                  |
| Trent Woods          | 56.6%                     | 55.0%                | 1.6%                   | 43.4%                          | 2.9%                  |
| Vanceboro            | 55.0%                     | 53.1%                | 1.9%                   | 45.0%                          | 3.5%                  |
| <b>Craven County</b> | <b>58.9%</b>              | <b>49.8%</b>         | <b>2.4%</b>            | <b>41.1%</b>                   | <b>4.5%</b>           |

Source: US Census Bureau American Community Survey.

**Table 3.23 – Craven County Employment by Industry**

| Jurisdiction         | Management, Business, Science and Arts (%) | Service (%)  | Sales and Office (%) | Natural Resources, Construction, and Maintenance (%) | Production, Transportation, and Material Moving (%) |
|----------------------|--|--------------|----------------------|--|---|
| Bridgeton            | 37.3%                                      | 15.0%        | 23.5%                | 16.3%  | 7.8%  |
| Cove City            | 37.3%                                      | 17.9%        | 14.6%                | 23.6%  | 6.6%  |
| Dover                | 22.5%                                      | 10.1%        | 17.4%                | 24.6%  | 25.4%   |
| Havelock             | 33.4%                                      | 24.2%        | 22.2%                | 5.8%   | 14.5%   |
| New Bern             | 38.5%                                      | 19.8%        | 20.6%                | 6.6%   | 14.6%   |
| River Bend           | 42.4%                                      | 12.9%        | 24.7%                | 1.3%   | 18.7%   |
| Trent Woods          | 52.1%                                      | 19.1%        | 19.2%                | 3.4%   | 6.3%  |
| Vanceboro            | 50.9%                                      | 19.9%        | 12.3%                | 7.9%   | 9.0%  |
| <b>Craven County</b> | <b>36.5%</b>                               | <b>19.6%</b> | <b>20.8%</b>         | <b>8.1%</b>  | <b>14.9%</b>  |

Source: US Census Bureau American Community Survey.

The top industries in Craven County include (1) Management, Business, Science, and Arts, (2) Sales and Office, and Service industries. The top 10 employers in the County are listed below:

- Department of Defense
- Carolina East Health System
- Craven County Board of Education
- BSH Home Appliances Corporation
- Wal-Mart Associates, Inc.
- Craven County
- Moen Incorporated
- Marine Corps Exchange Service

- Craven Community College
- City of New Bern

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### **3.4.6 HISTORIC PROPERTIES**

As of January 2025, Craven County had 57 listings on the National Register of Historic Places. This list includes 51 Historic Structures and 6 Historic Districts. Presence on the National Register signifies that these structures have been determined to be worthy of preservation for their historical or cultural values. The following provides a comprehensive listing of all Nationally Registered Properties in Craven County.

- Attmore-Oliver House (New Bern) – 1/20/1972
- Barber, J.T., School (New Bern) – 12/20/2006
- Baxter Clock (New Bern) – 7/2/1973
- Bellair (New Bern) – 8/25/1972
- Blades House (New Bern) – 1/14/1972
- Bryan House and Office (New Bern) – 3/24/1972
- Cedar Grove Cemetery (New Bern) – 12/5/1972
- Cedar Street Recreation Center (New Bern) – 8/21/2003
- Centenary Methodist Church (New Bern) – 9/11/1972
- Central Elementary School (New Bern) – 1/20/1972
- Christ Episcopal Church and Parish House (New Bern) – 4/13/1973
- Clear Springs Plantation (Jasper) – 3/14/1973
- Coor-Bishop House (New Bern) – 11/9/1972
- Coor-Gaston House (New Bern) – 2/1/1972
- Craven Terrace (New Bern) – 8/19/2014
- DeGraffenried Park Historic District (New Bern) – 8/9/2006
- Ebenezer Presbyterian Church (New Bern) – 6/30/1997
- First Baptist Church (New Bern) – 3/24/1972
- First Church of Christ, Scientist (New Bern) – 10/2/1973
- First Missionary Baptist Church (New Bern) – 6/30/1997
- First Presbyterian Church and Churchyard (New Bern) – 2/1/1972
- Ghent Historic District (New Bern) – 3/17/1988
- Gull Harbor (New Bern) – 8/14/1973
- Harvey Mansion (New Bern) – 11/12/1971
- Hawks House (New Bern) – 3/16/1972
- Hollister, William, House (New Bern) – 6/30/1972
- Jerkins, Thomas, House (New Bern) – 10/18/1972
- Jerkins--Duffy House (New Bern) – 3/17/1988
- Jones-Jarvis House (New Bern) – 4/11/1973
- Mace, Ulysses S., House (New Bern) – 6/4/1973
- Masonic Temple and Theater (New Bern) – 3/16/1972
- Mount Shiloh Missionary Baptist Church (New Bern) – 3/1/2007
- New Bern Battlefield Site (New Bern) – 10/19/2001

- New Bern Historic District (New Bern) – 6/19/1973
- New Bern Historic District (Boundary Increase) (New Bern) – 9/25/2003
- New Bern Historic District (Boundary Increase II) (New Bern) – 1/5/2016
- New Bern Municipal Building (New Bern) – 6/4/1973
- New Bern National Cemetery (New Bern) – 1/31/1997
- Rhem-Waldrop House (New Bern) – 10/18/1972
- Riverside Historic District (New Bern) – 2/9/1988
- Rue Chapel AME Church (New Bern) – 6/30/1997
- Simpson-Oaksmith-Patterson House (New Bern) – 1/20/1972
- Sloan, Dr. Earl S., House (Trent Woods) – 8/14/1986
- Slover-Bradham House (New Bern) – 4/11/1973
- Smallwood, Eli, House (New Bern) – 12/15/1972
- Smith Jr., Isaac H., House (New Bern) – 9/14/2002
- Smith, Benjamin, House (New Bern) – 4/13/1972
- Smith-Whitford House (New Bern) – 4/13/1972
- St. John's Missionary Baptist Church (New Bern) – 6/30/1997
- St. Paul's Roman Catholic Church (New Bern) – 3/24/1972
- St. Peter's AME Zion Church (New Bern) – 6/30/1997
- Stanly, Edward R., House (New Bern) – 3/24/1972
- Stanly, John Wright, House (New Bern) – 2/26/1970
- Stevenson House (New Bern) – 8/26/1971
- Taylor, Isaac, House (New Bern) – 12/27/1972
- Tisdale-Jones House (New Bern) – 4/25/1972
- York-Gordon House (New Bern) – 6/18/1973

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### **3.4.7 LAND DEVELOPMENT TRENDS**

Throughout Craven County, approximately 77 percent of parcels are currently developed. Table 3.24 provides an overview of developed and undeveloped properties located throughout Craven County. A majority of development is focused within the urban communities of New Bern and Havelock. Additionally, increased growth has begun to occur within communities adjacent to New Bern including Trent Woods, River Bend, and Vanceboro. Development is also centralized along key highway corridors, especially throughout portions of the County adjacent to Havelock between New Bern and the Carteret County line. It should also be noted that agriculture and associated land uses are a critical component of the County’s economy.

**Table 3.24 – Craven County Developed and Undeveloped Parcel Counts**

| <b>Jurisdiction</b> | <b>Developed Parcels</b> | <b>Undeveloped Parcels</b> | <b>% Developed Parcels</b> |
|---------------------|--------------------------|----------------------------|----------------------------|
| Bridgeton           | 295                      | 102                        | 74.3%                      |
| Cove City           | 242                      | 101                        | 70.6%                      |
| Dover               | 264                      | 111                        | 70.4%                      |
| Havelock            | 4,711                    | 266                        | 94.7%                      |
| New Bern            | 14,702                   | 2,956                      | 83.3%                      |
| River Bend          | 1,583                    | 174                        | 90.1%                      |

**SECTION 3: PLANNING AREA PROFILE**

| <b>Jurisdiction</b>          | <b>Developed Parcels</b> | <b>Undeveloped Parcels</b> | <b>% Developed Parcels</b> |
|------------------------------|--------------------------|----------------------------|----------------------------|
| Trent Woods                  | 1,931                    | 271                        | 87.7%                      |
| Vanceboro                    | 465                      | 174                        | 72.8%                      |
| Unincorporated Craven County | 21,990                   | 9,606                      | 69.6%                      |
| <b>Total</b>                 | <b>46,183</b>            | <b>13,761</b>              | <b>77.0%</b>               |

Source: County Parcel GIS Data and iRisk Building Footprints

Craven County does not maintain zoning regulations within unincorporated areas. The County is characterized by rural landscapes interspersed with small towns that maintain a commercial core and moderate density residential development. However, Craven County has two large municipal jurisdictions including the City of New Bern and the City of Havelock. These two communities are connected by a fifteen mile stretch of US Highway 70.

It is anticipated that residential and non-residential development will continue to occur at a fairly rapid pace along this stretch. As this development continues, the County will consider instituting corridor planning and ultimately, there is potential for the establishment of corridor specific zoning regulations. In addition to US Highway 70 leading to Havelock, growth will also continue to materialize along US Highway 70 east of New Bern and along US Highway 17 north of New Bern to the Pitt County line.

As with many of the other municipalities in the region, development within New Bern and Havelock will continue to expand in a traditional fashion. It is expected that New Bern’s downtown commercial core will continue to experience redevelopment and expansion. This is limited in some ways due to the historical protection measures which exist in this area. Development in Havelock will continue along the US Highway 70 corridor, which in many ways serves at the City’s commercial core. Future growth within Havelock is dependent upon potential growth of Cherry Point Naval Air Station. The Town of River Bend is predominantly residential in character and is located outside the City of New Bern’s corporate limits.

The Craven County land use plan, adopted in 2009, covers the unincorporated county and the Towns of Cove City, Dover, and Vanceboro. Bridgeton will participate in future county land use planning. The City of New Bern and the Towns of Trent Woods and River Bend have a regional land use plan, adopted in 2010 and 2011. The City of Havelock’s land use plan was updated in 2023.

Figure 3.22 – Craven County Future Land Use Map

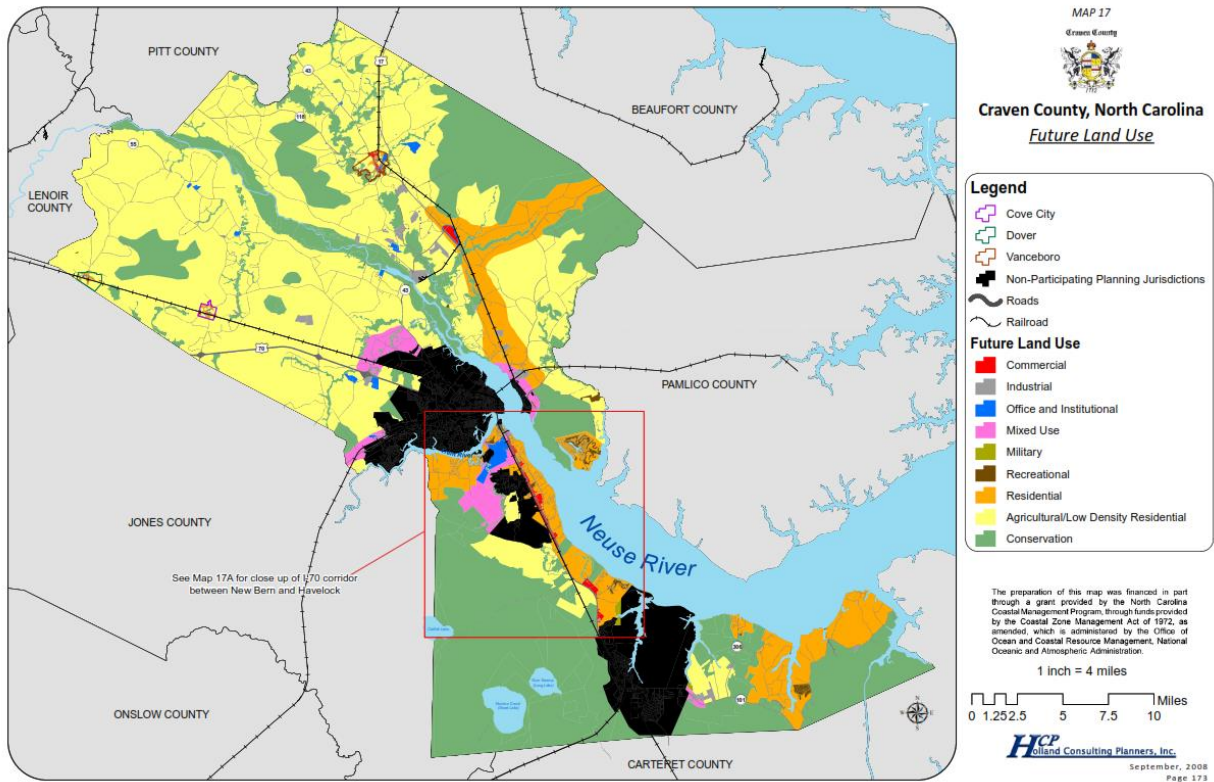




Figure 3.23 – City of Havelock Future Land Use Map

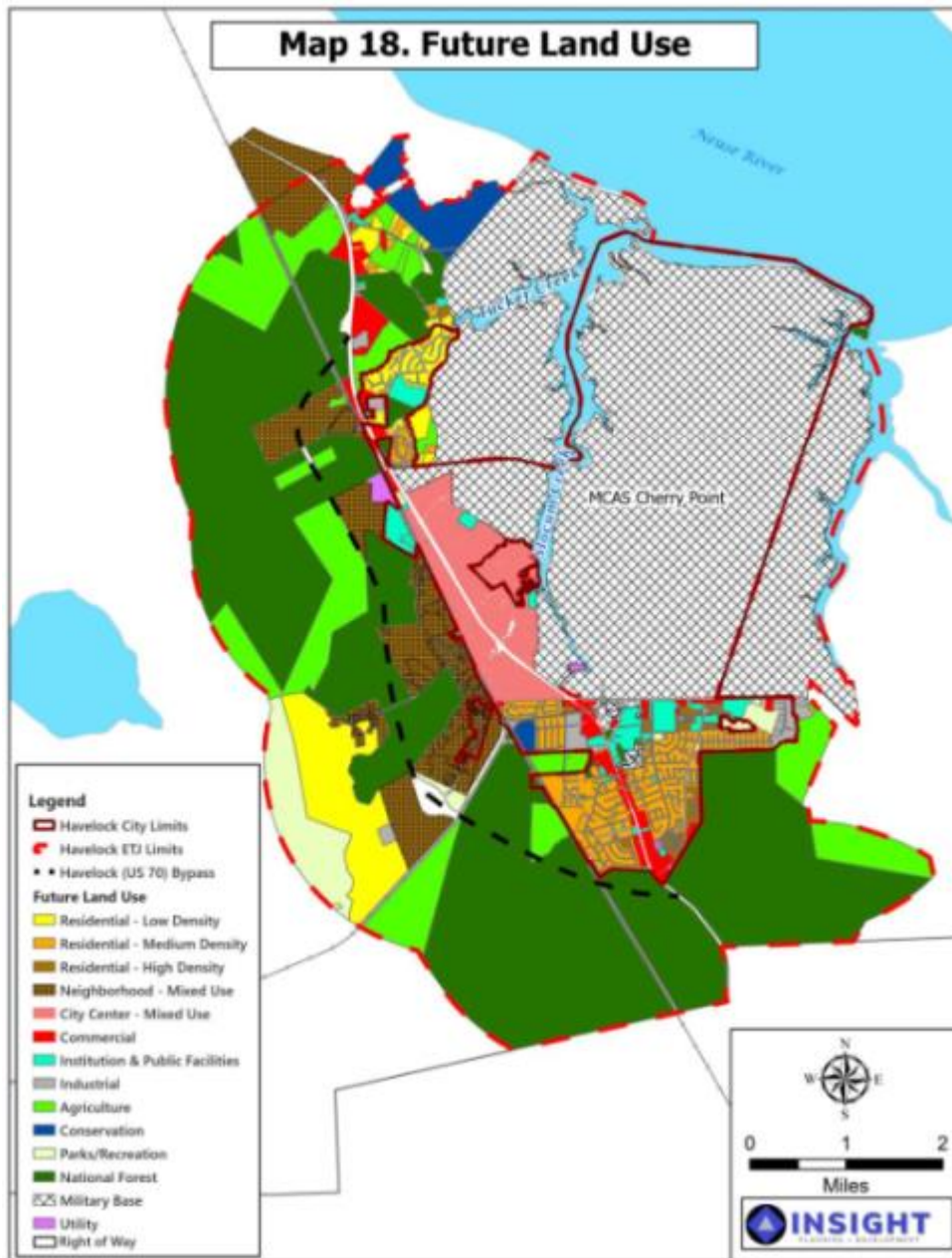
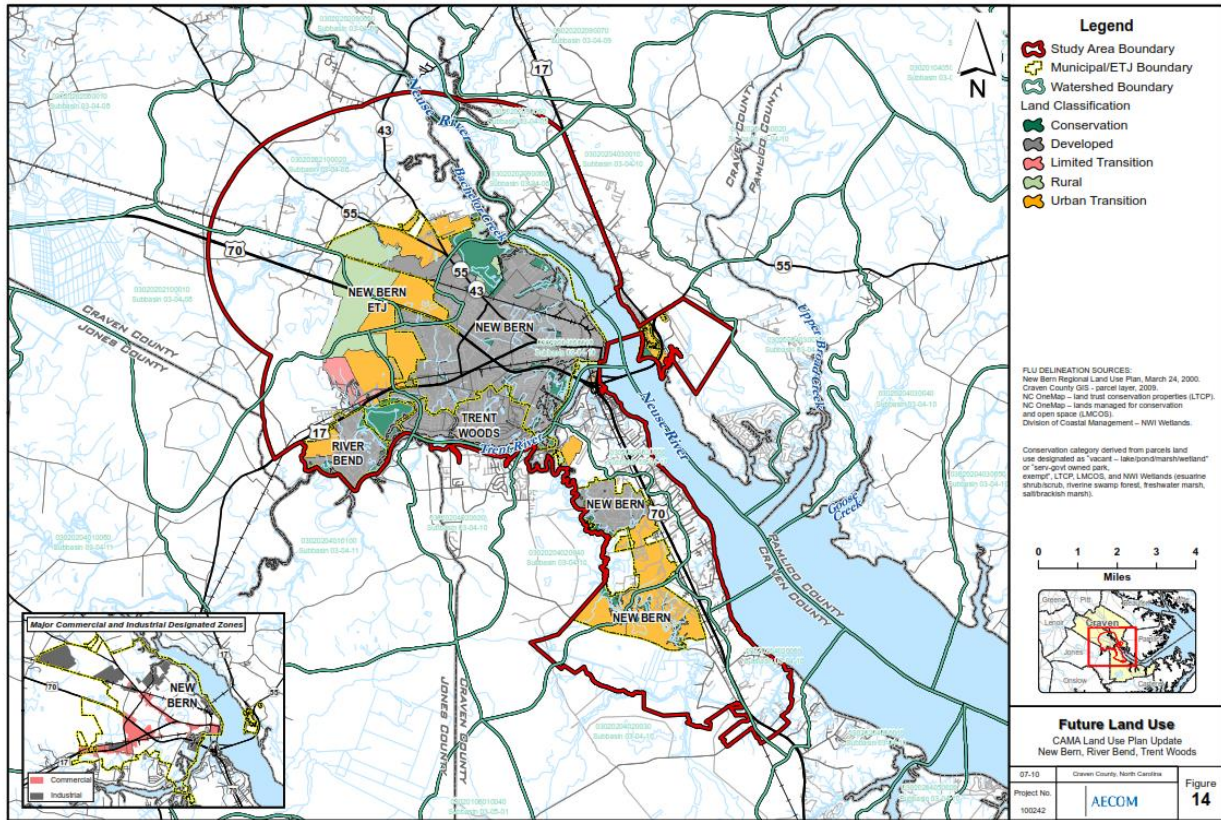


Figure 3.24 – New Bern, Trent Woods, and River Bend Future Land Use Map

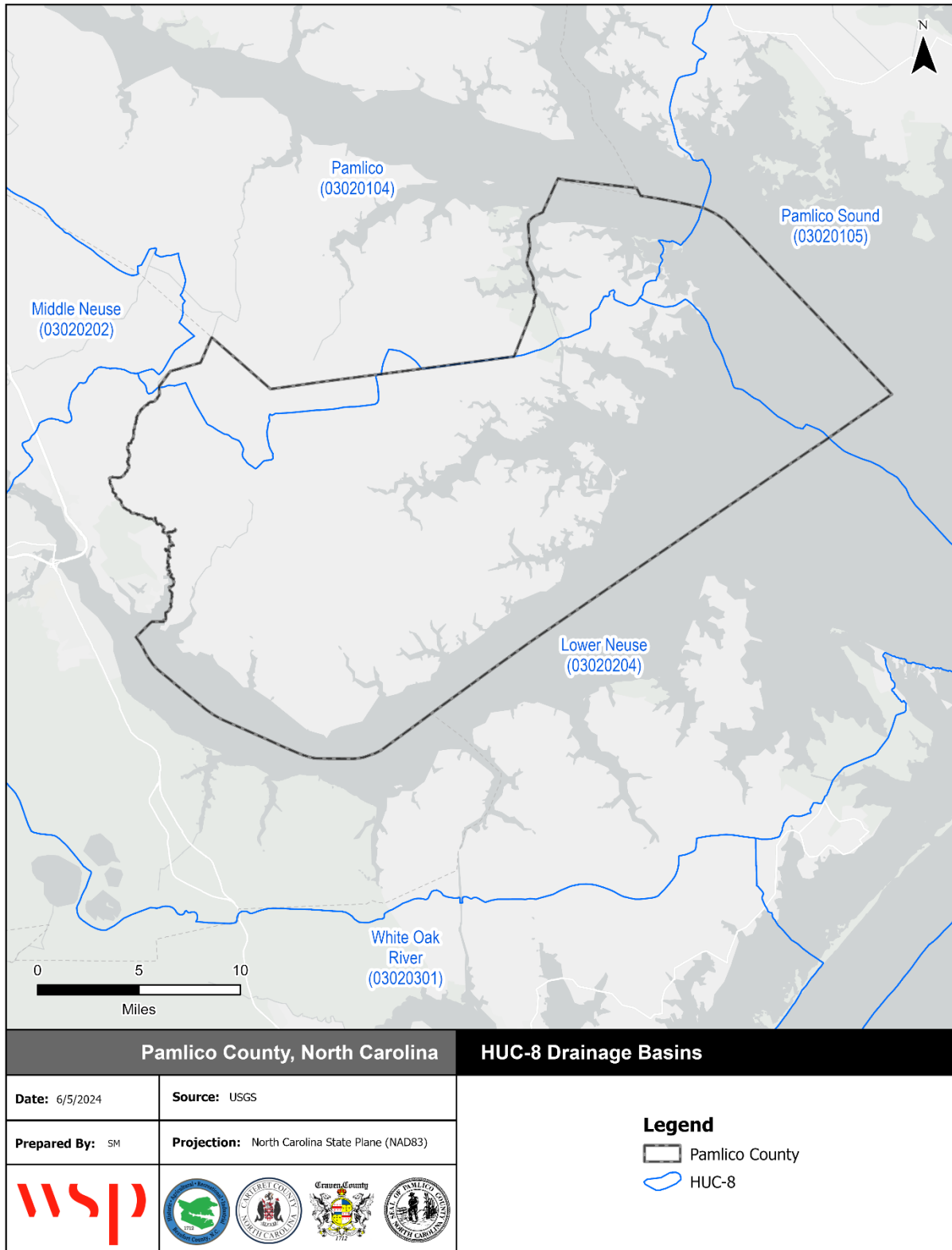


## 3.5 PAMLICO COUNTY

### 3.5.1 HYDROLOGY

Pamlico County’s waters are situated in two river basins: the northern portion of Goose Creek Island adjacent to the Pamlico River is in the Pamlico River Basin and the remainder of the County’s estuarine waters are located in the Neuse River Basin, as shown in Figure 3.9. Descriptions of these river basins can be found in previous Section 3.2.8.

Figure 3.25 - Pamlico County, HUC8 River Basins



Source: National Hydrology Dataset

### 3.5.2 PARKS AND OPEN SPACE

There are several parks located throughout Pamlico County, both within unincorporated portions of the County, as well as within participating municipalities. The following provides a listing of those parks and recreational facilities:

- Alliance Recreation Park – 256 Ireland Rd, Bayboro, NC
- Newton Creek Park – 229 Matthew Rd, Bayboro, NC
- Bayboro Community Park (Bayboro)
- Raccoon Creek Park – 1206 NC 304, Bayboro, NC
- Dawson’s Creek Beach Access – 3886 Janiero Rd, Arapahoe, NC
- Styron Beach Access – 681 Styrontown Beach Rd, Oriental, NC
- Lupton Park – 702 3<sup>rd</sup> Ave, Oriental, NC
- Lou Mac Park – 504 South Ave, Oriental, NC
- Oriental Recreation Park – 6417 Straight Rd, Oriental, NC

### 3.5.3 DEMOGRAPHICS

#### POPULATION TOTAL

The total population of Pamlico County according to the 2023 American Community Survey was 12,315 persons. Population throughout unincorporated portions of Pamlico County has been in decline since the 2000 Census at a rate of -4.8 percent. This negative growth has also been experienced by several of the County’s municipalities, including the Towns of Arapahoe, Grantsboro, Mesic, Stonewall, and Vandemere. There are several municipalities that have experienced quite rapid population increase over this same period, including Bayboro (73 percent) and Minnesott Beach (70.1 percent). It should be noted that much of this growth occurred between the years 2000 and 2010.

Table 3.25 provides a breakdown of total population for Pamlico County and the participating municipalities for the years 2000, 2010, 2020, and 2023.

**Table 3.25 – Pamlico County Total Population**

| Jurisdiction          | 2000          | 2010          | 2020          | 2023          | % Change<br>2010-2023 | Overall % Change<br>2000-2023 |
|-----------------------|---------------|---------------|---------------|---------------|-----------------------|-------------------------------|
| Alliance              | 785           | 776           | 736           | 812           | -5.2%                 | 3.4%                          |
| Arapahoe              | 436           | 556           | 415           | 384           | -25.4%                | -11.9%                        |
| Bayboro               | 741           | 1,263         | 1,159         | 1,282         | -8.2%                 | 73.0%                         |
| Grantsboro            | 754           | 688           | 695           | 698           | 1.0%                  | -7.4%                         |
| Mesic                 | 257           | 220           | 144           | 206           | -34.6%                | -19.8%                        |
| Minnesott Beach       | 311           | 440           | 528           | 529           | 20.0%                 | 70.1%                         |
| Oriental              | 875           | 900           | 880           | 930           | -2.2%                 | 6.3%                          |
| Stonewall             | 285           | 281           | 211           | 151           | -24.9%                | -47.0%                        |
| Vandemere             | 289           | 245           | 245           | 204           | 0.0%                  | -29.4%                        |
| <b>Municipalities</b> | <b>4,733</b>  | <b>5,369</b>  | <b>5,013</b>  | <b>5,196</b>  | <b>-6.6%</b>          | <b>9.8%</b>                   |
| Unincorporated Areas  | 8,201         | 7,775         | 7,257         | 7,119         | -6.7%                 | -13.2%                        |
| <b>Total</b>          | <b>12,934</b> | <b>13,144</b> | <b>12,270</b> | <b>12,315</b> | <b>-6.7%</b>          | <b>-4.8%</b>                  |

Source: US Census Bureau American Community Survey.

## GROWTH TRENDS

Table 3.26 provides population forecast through the year 2050 for Pamlico County, as well as all participating municipal jurisdictions. Municipal forecasts are based on the annual growth rate calculated from 2000 and 2023 population change presented in Table 3.25. According to the North Carolina Office of State Budget and Management (NCOSBM), the population of Pamlico County is expected to increase by approximately 4.9 percent by 2050 (a total of 603 more persons). The most substantial increase regarding the County's municipalities is expected to be the Town of Bayboro at a rate of 48.4 percent (621 individuals) over the same period.

**Table 3.26 - Pamlico County Population Projections, 2023-2050**

| Jurisdiction           | 2023          | 2030          | 2040          | 2050          | % Change 2023-2050 |
|------------------------|---------------|---------------|---------------|---------------|--------------------|
| Alliance               | 812           | 819           | 829           | 839           | 3.3%               |
| Arapahoe               | 384           | 370           | 350           | 330           | -14.1%             |
| Bayboro                | 1,282         | 1,443         | 1,673         | 1,903         | 48.4%              |
| Grantsboro             | 698           | 684           | 664           | 644           | -7.7%              |
| Mesic                  | 206           | 192           | 172           | 152           | -26.2%             |
| Minnesott Beach        | 529           | 592           | 682           | 772           | 45.9%              |
| Oriental               | 930           | 944           | 964           | 984           | 5.8%               |
| Stonewall              | 151           | 116           | 66            | 16            | -89.4%             |
| Vandemere              | 204           | 183           | 153           | 123           | -39.7%             |
| <b>Municipalities</b>  | <b>5,196</b>  | <b>5,336</b>  | <b>5,536</b>  | <b>5,736</b>  | <b>10.4%</b>       |
| Unincorporated Areas   | 7,119         | 6,790         | 6,320         | 5,850         | -17.8%             |
| <b>Pamlico County*</b> | <b>12,315</b> | <b>12,917</b> | <b>12,918</b> | <b>12,919</b> | <b>4.9%</b>        |

Source: US Census Bureau American Community Survey and NCOSBM State/County Population Projections

Note: Municipal population projections were calculated using the linear growth formula, which assumes the same growth occurs annually. The annual growth rate (in persons) was determined by subtracting the initial population (2000) from the base population (2023) dividing it by the number of years (23 years). The annual growth rate (in person) was then multiplied by base population (2023) and number of years (7 years for 2030, 17 years for 2040, and 27 years for 2050).

\*Unlike the Municipal population projections, the County population projections were forecasted and provided by NCOSBM, which considers estimates of births, deaths, migration, and other demographic data.

## RACIAL DEMOGRAPHICS

The overall Pamlico County population is predominantly Caucasian comprising 74.6 percent of residents, while most of the remaining population is African American (18.6 percent). The racial composition of the County's municipal jurisdictions varies slightly. The Towns of Bayboro and Mesic are predominantly African American. Overall, Pamlico County has a low Hispanic/Latino population of 4.6 percent. Municipalities with the largest Hispanic population throughout the County include Grantsboro and Arapahoe.

According to the American Community Survey, the 2023 median age within Pamlico County was 54.1 years. Approximately 86 percent of the County's population is over the age of eighteen, while 51 percent is male and 49 percent is female. Table 3.20 provides a summary of racial composition for Pamlico County, as well as all participating municipal jurisdictions.

**Table 3.27 - Pamlico County Racial Composition**

| Jurisdiction | Caucasian | African-American | Asian | Other Race* | Two or More Races | Persons of Hispanic or Latino Origin** |
|--------------|-----------|------------------|-------|-------------|-------------------|--|
| Alliance     | 82.5%     | 16.1%            | 0.0%  | 0.5%        | 0.9%              | 4.2%                                   |

| Jurisdiction          | Caucasian    | African-American | Asian       | Other Race* | Two or More Races | Persons of Hispanic or Latino Origin** |
|-----------------------|--------------|------------------|-------------|-------------|-------------------|--|
| Arapahoe              | 87.8%        | 1.3%             | 0.0%        | 3.9%        | 7.0%              | 6.8%                                   |
| Bayboro               | 37.1%        | 54.4%            | 0.0%        | 0.2%        | 8.3%              | 2.9%                                   |
| Grantsboro            | 68.6%        | 16.2%            | 0.0%        | 12.5%       | 2.7%              | 12.5%                                  |
| Mesic                 | 49.5%        | 50.5%            | 0.0%        | 0.0%        | 0.0%              | 0.0%                                   |
| Minnesott Beach       | 88.1%        | 1.5%             | 0.0%        | 0.4%        | 10.0%             | 3.8%                                   |
| Oriental              | 94.4%        | 1.2%             | 0.4%        | 0.6%        | 5.6%              | 5.1%                                   |
| Stonewall             | 69.5%        | 14.6%            | 4.0%        | 0.0%        | 11.9%             | 0.0%                                   |
| Vandemere             | 52.9%        | 45.6%            | 0.0%        | 0.0%        | 1.5%              | 0.5%                                   |
| <b>Pamlico County</b> | <b>74.6%</b> | <b>18.6%</b>     | <b>0.6%</b> | <b>1.2%</b> | <b>5.1%</b>       | <b>4.6%</b>                            |

\*Other races includes American Indian, Alaskan Native, Native Hawaiian, Pacific Islander, etc.

\*\*Persons of Hispanic or Latino Origin are classified regardless of race; therefore, this percentage is considered independent of the other race classifications listed.

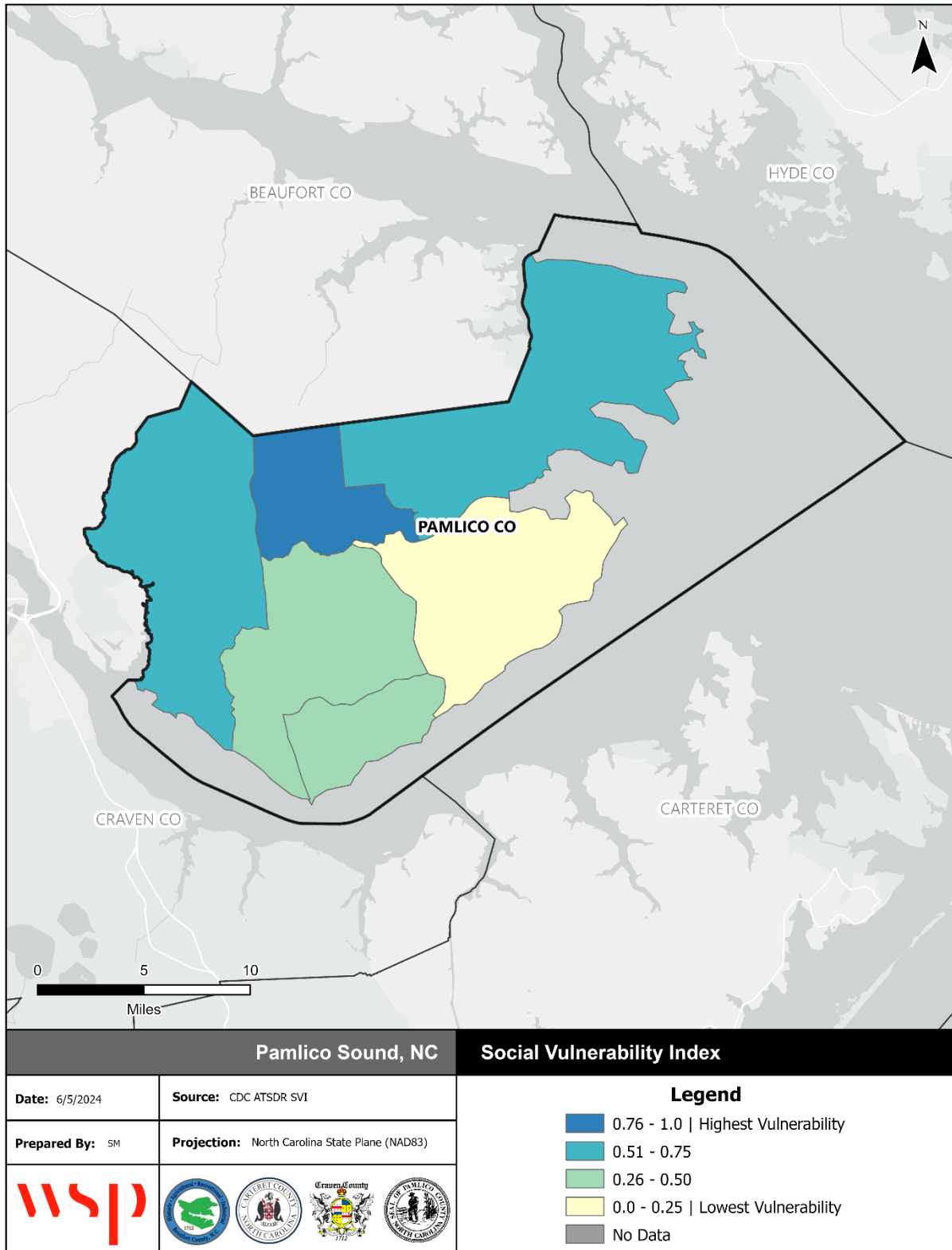
Source: US Census Bureau American Community Survey.

### SOCIAL VULNERABILITY

Figure 3.26 below displays social vulnerability information for Pamlico County by census tract according to 2022 data and analysis by the Centers for Disease Control and Prevention (CDC). The CDC’s Social Vulnerability Index (SVI) indicates the relative vulnerability within census tracts based on 15 social factors: poverty, unemployment, income, education, age, disability, household composition, minority status, language, housing type, and transportation access. Higher social vulnerability is an indicator that a community may be limited in its ability to respond to and recover from hazard events. Therefore, using this SVI information can help the County and municipal jurisdictions to prioritize pre-disaster aid, allocate emergency preparedness and response resources, and plan for the provision of recovery support.

Overall Pamlico County is into three areas regarding the SVI Index. Northern Pamlico County, abutting Beaufort County, has a high a high SVI score, while Western and North Central Pamlico County have a moderate index. Pamlico County is the most rurally developed County within the Pamlico Region. This is reflected through the delineation of the SVI index areas where individual factors impacted large portions of the County.

Figure 3.26 - Pamlico County Social Vulnerability Index



### 3.5.4 HOUSING CHARACTERISTICS

According to the American Community Survey, there were approximately 7,239 housing units in Pamlico County as of 2023. This figure marks a -2.5 percent, or 210 unit decrease, since 2010 for unincorporated portions of Pamlico County. Although the County’s housing unit growth has been somewhat modest, several County municipalities have experienced a much more rapid increase in their housing stock. Housing unit increases have been much more substantial in Minnesott Beach (25 percent) and Oriental (31.8 percent).

Throughout Pamlico County, the housing is predominantly comprised of owner occupants (83.3 percent). Overall, the County and its municipalities maintain a fairly high owner occupancy rate. Of the nine municipal jurisdictions all but one (Arapahoe) maintain an owner occupancy rate above 70 percent. This factor is important in regards to mitigation and post disaster recovery due to the fact that homeownership directly correlates to the long term maintenance and flood proofing of property, as well as the eligibility for funding of impacted units following a flooding event associated with nor’easters and tropical storm/hurricanes.

In terms of vulnerability associated with natural hazard events such as tropical storms, hurricanes, and tornadoes, roughly 24.5 percent of the Pamlico County housing stock is comprised of manufactured homes, which is much higher than the state average of 10.5 percent. The prevalence of manufactured housing poses a unique threat regarding both sustainability, as well as emergency response within defined flood hazard areas.

Table 3.28 below provides a summary of housing characteristics for Pamlico County, as well as participating municipal jurisdictions.

**Table 3.28 - Pamlico County Housing Characteristics**

| Jurisdiction          | Housing Units (2010) | Housing Units (2023) | % Change 2010-2023 | % Owner Occupied (2023) | % Vacant Units (2023) |
|-----------------------|----------------------|----------------------|--------------------|-------------------------|-----------------------|
| Alliance              | 360                  | 403                  | 11.9%              | 71.3%                   | 12.7%                 |
| Arapahoe              | 281                  | 196                  | -30.3%             | 68.9%                   | 9.7%                  |
| Bayboro               | 406                  | 378                  | -6.9%              | 70.7%                   | 31.5%                 |
| Grantsboro            | 323                  | 305                  | -5.6%              | 84.3%                   | 16.7%                 |
| Mesic                 | 189                  | 122                  | -35.5%             | 78.3%                   | 32.0%                 |
| Minnesott Beach       | 296                  | 370                  | 25.0%              | 84.5%                   | 23.2%                 |
| Oriental              | 620                  | 817                  | 31.8%              | 81.5%                   | 29.7%                 |
| Stonewall             | 130                  | 115                  | -11.5%             | 76.0%                   | 34.8%                 |
| Vandemere             | 159                  | 156                  | -1.9%              | 90.0%                   | 45.9%                 |
| <b>Pamlico County</b> | <b>7,449</b>         | <b>7,239</b>         | <b>-2.5%</b>       | <b>83.3%</b>            | <b>27.8%</b>          |

Source: US Census Bureau American Community Survey.

### 3.5.5 WAGES, EMPLOYMENT AND INDUSTRY

The 2023 American Community Survey reports that the median household income for Pamlico County was \$61,624, which is lower than the state’s median household income of (\$69,904). However, approximately 12.4 percent of the population is living below the poverty level. Moreover, 17.4 percent of people under 18 years of age are living below the poverty level.

Within Pamlico County, approximately 43.8 percent of the population is in the labor force. This varies significantly across all participating municipal jurisdictions from roughly 20 percent to 60 percent. Throughout Pamlico County, including all municipal jurisdictions, the percentage of the labor force



**SECTION 3: PLANNING AREA PROFILE**

currently employed falls below 50%, except for Arapahoe (56.4 percent). According to the American Community Survey, the unemployment rate for Pamlico County overall was 4.5 percent. Additionally, as of 2023, approximately 9 percent of households throughout Pamlico County relied on food stamps/SNAP benefits.

The following tables provide a summary of key economic indicators and population employed by industry for both incorporated and unincorporated portions of Pamlico County.

**Table 3.29 - Pamlico County Key Economic Indicators**

| Jurisdiction          | Population in Labor Force | Percent Employed (%) | Percent Unemployed (%) | Percent Not in Labor Force (%) | Unemployment Rate (%) |
|-----------------------|---------------------------|----------------------|------------------------|--------------------------------|-----------------------|
| Alliance              | 32.7%                     | 30.2%                | 2.5%                   | 67.3%                          | 7.6%                  |
| Arapahoe              | 61.2%                     | 56.4%                | 3.6%                   | 38.8%                          | 6.1%                  |
| Bayboro               | 20.3%                     | 19.9%                | 0.3%                   | 79.7%                          | 1.6%                  |
| Grantsboro            | 48.9%                     | 48.2%                | 0.7%                   | 51.1%                          | 1.4%                  |
| Mesic                 | 44.6%                     | 44.6%                | 0.0%                   | 55.4%                          | 0.0%                  |
| Minnesott Beach       | 39.7%                     | 37.9%                | 1.8%                   | 60.3%                          | 4.6%                  |
| Oriental              | 28.8%                     | 27.9%                | 0.4%                   | 71.2%                          | 1.6%                  |
| Stonewall             | 38.6%                     | 38.6%                | 0.0%                   | 61.4%                          | 0.0%                  |
| Vandemere             | 34.5%                     | 31.6%                | 2.9%                   | 65.5%                          | 8.5%                  |
| <b>Pamlico County</b> | <b>43.8%</b>              | <b>41.7%</b>         | <b>1.9%</b>            | <b>56.2%</b>                   | <b>4.5%</b>           |

Source: US Census Bureau American Community Survey.

**Table 3.30 - Pamlico County Employment by Industry**

| Jurisdiction          | Management, Business, Science and Arts (%) | Service (%)  | Sales and Office (%) | Natural Resources, Construction, and Maintenance (%) | Production, Transportation, and Material Moving (%) |
|-----------------------|--|--------------|----------------------|--|---|
| Alliance              | 37.8%                                      | 9.6%         | 19.6%                | 26.5%  | 6.5%  |
| Arapahoe              | 28.5%                                      | 17.7%        | 24.7%                | 10.2%  | 18.8%   |
| Bayboro               | 15.1%                                      | 25.5%        | 31.4%                | 20.1%  | 7.9%  |
| Grantsboro            | 29.3%                                      | 11.6%        | 22.5%                | 15.2%  | 21.4%   |
| Mesic                 | 22.0%                                      | 17.1%        | 25.6%                | 15.9%  | 19.5%   |
| Minnesott Beach       | 43.6%                                      | 10.1%        | 32.4%                | 11.7%  | 2.1%  |
| Oriental              | 41.9%                                      | 21.7%        | 25.7%                | 4.7%   | 5.9%  |
| Stonewall             | 45.1%                                      | 9.8%         | 27.5%                | 7.8%   | 9.8%  |
| Vandemere             | 29.6%                                      | 29.6%        | 25.9%                | 1.9%   | 12.0%   |
| <b>Pamlico County</b> | <b>30.7%</b>                               | <b>15.7%</b> | <b>19.4%</b>         | <b>18.5%</b>   | <b>15.7%</b>  |

Source: US Census Bureau American Community Survey.

The top industries in Pamlico County include (1) Management, Business, Science, and Arts, (2) Sales and Office, and (3) Natural Resources, Construction and Maintenance industries. The top 10 employers in the County are listed below:

- YMCA
- Pamlico County Board of Education
- County of Pamlico
- Wal-Mart Associates, Inc.
- Food Lion

- NC Department of Adult Corrections
- Pamlico Community College
- Home Life Care Inc.
- Arapahoe Charter School
- Principle Long Term Care Inc.

### **3.5.6 HISTORIC PROPERTIES**

As of January 2025, Pamlico County had 2 listings on the National Register of Historic Places: China Grove (Oriental) – 2/6/1973 and Holt’s Chapel School – 8/8/2023 (Oriental). Presence on the National Register signifies that this structure has been determined to be worthy of preservation for its historical or cultural values.

### **3.5.7 LAND DEVELOPMENT TRENDS**

Throughout Pamlico County approximately 59.1 percent of parcels are currently developed.

**Table 3.31 – Pamlico County Developed and Undeveloped Parcel Counts**

| <b>Jurisdiction</b>           | <b>Developed Parcels</b> | <b>Undeveloped Parcels</b> | <b>% Developed</b> |
|-------------------------------|--------------------------|----------------------------|--------------------|
| Alliance                      | 396                      | 102                        | 79.5%              |
| Arapahoe                      | 282                      | 97                         | 74.4%              |
| Bayboro                       | 429                      | 159                        | 73.0%              |
| Grantsboro                    | 383                      | 181                        | 67.9%              |
| Mesic                         | 161                      | 83                         | 66.0%              |
| Minnesott Beach               | 461                      | 463                        | 49.9%              |
| Oriental                      | 1,119                    | 331                        | 77.2%              |
| Stonewall                     | 170                      | 950                        | 15.2%              |
| Vandemere                     | 214                      | 188                        | 44.9%              |
| Unincorporated Pamlico County | 6,258                    | 5,669                      | 52.5%              |
| <b>Total</b>                  | <b>10,573</b>            | <b>7,317</b>               | <b>59.1%</b>       |

Source: County Parcel GIS Data and iRisk Building Footprints

Pamlico County and the municipalities throughout the County are the most rural of the Pamlico Sound Region. There is no zoning throughout unincorporated Pamlico County and development is generally associated with agriculture and industry within rural portions of the County. This development, like Beaufort County and Craven County, is located along the County’s key transportation thoroughfares including NC Highway 55, NC Highway 306, and NC Highway 304. Development is expected to continue in this manner; however, it should be noted that growth throughout the County is expected to be fairly limited.

Throughout Pamlico County, there are several small towns with quaint small downtown districts and supporting residential land uses. There has been new investment within these small communities, but it generally has not taken place in the form of greenfield development. All towns within the County maintain current zoning ordinances which promote organized growth and will continue to regulate development within low lying portions of the County.

The 2004 Pamlico County Joint Land Use Plan guides growth and development in unincorporated Pamlico County and the Towns of Bayboro, Mesic, Minnesott Beach, and Vandemere. The future land use map for these communities is shown in Figure 3.27 and Figure 3.28. The Town of Oriental’s 2008 land use plan, updated in 2023, establishes the Town’s future land use map, shown in Figure 3.29.

Figure 3.27 - Pamlico County Future Land Use Map, Part A

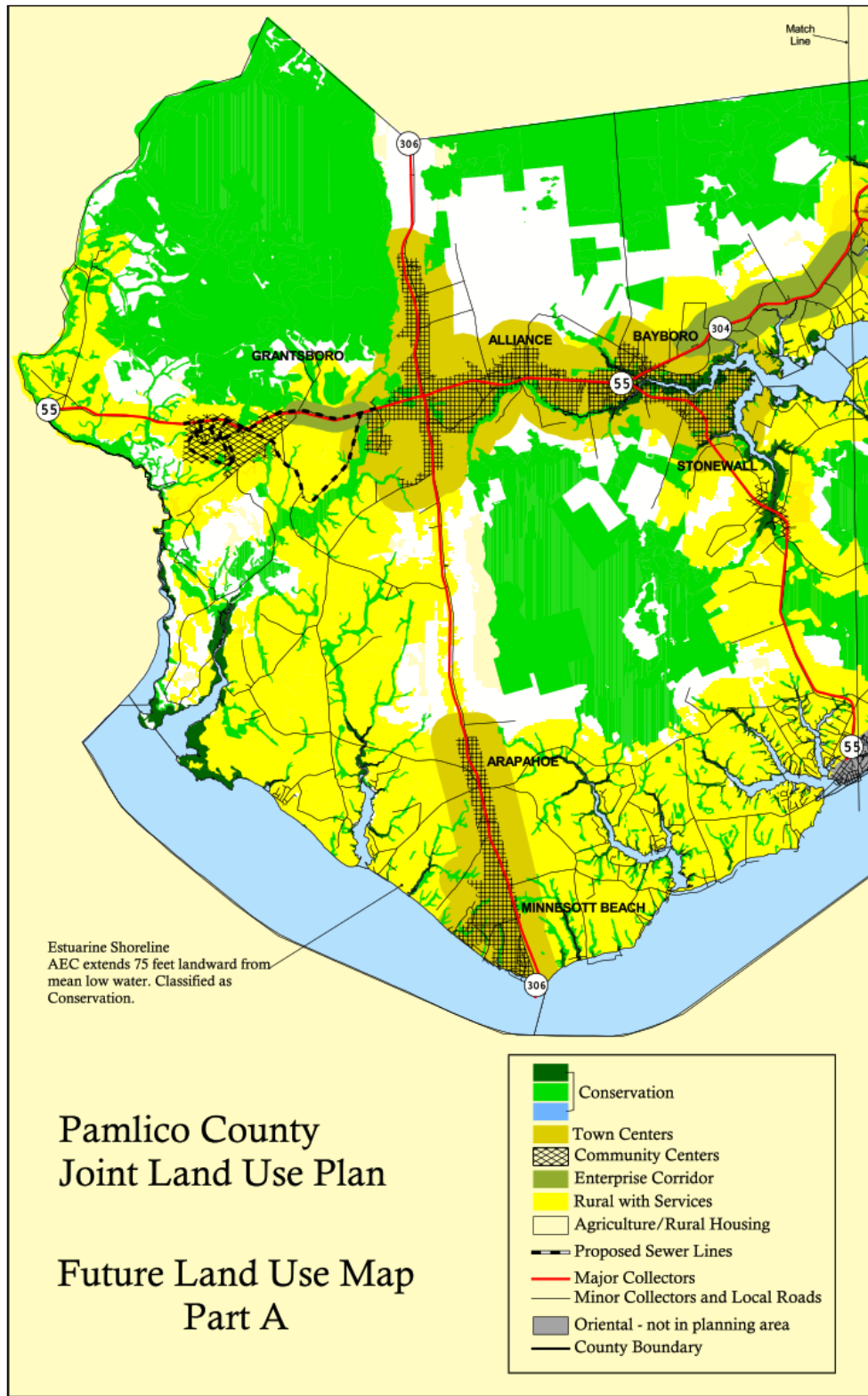


Figure 3.28 - Pamlico County Future Land Use Map, Part B

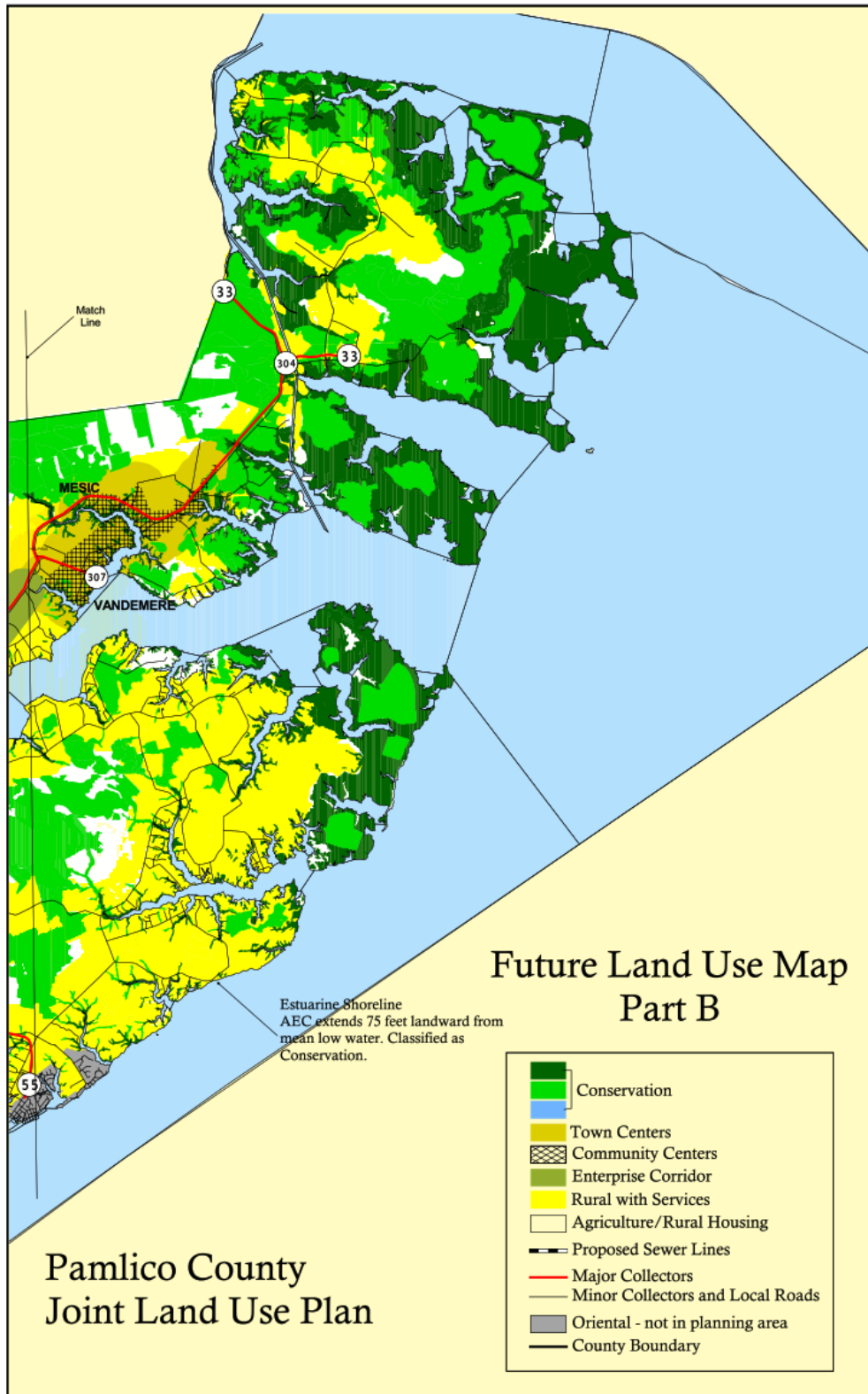
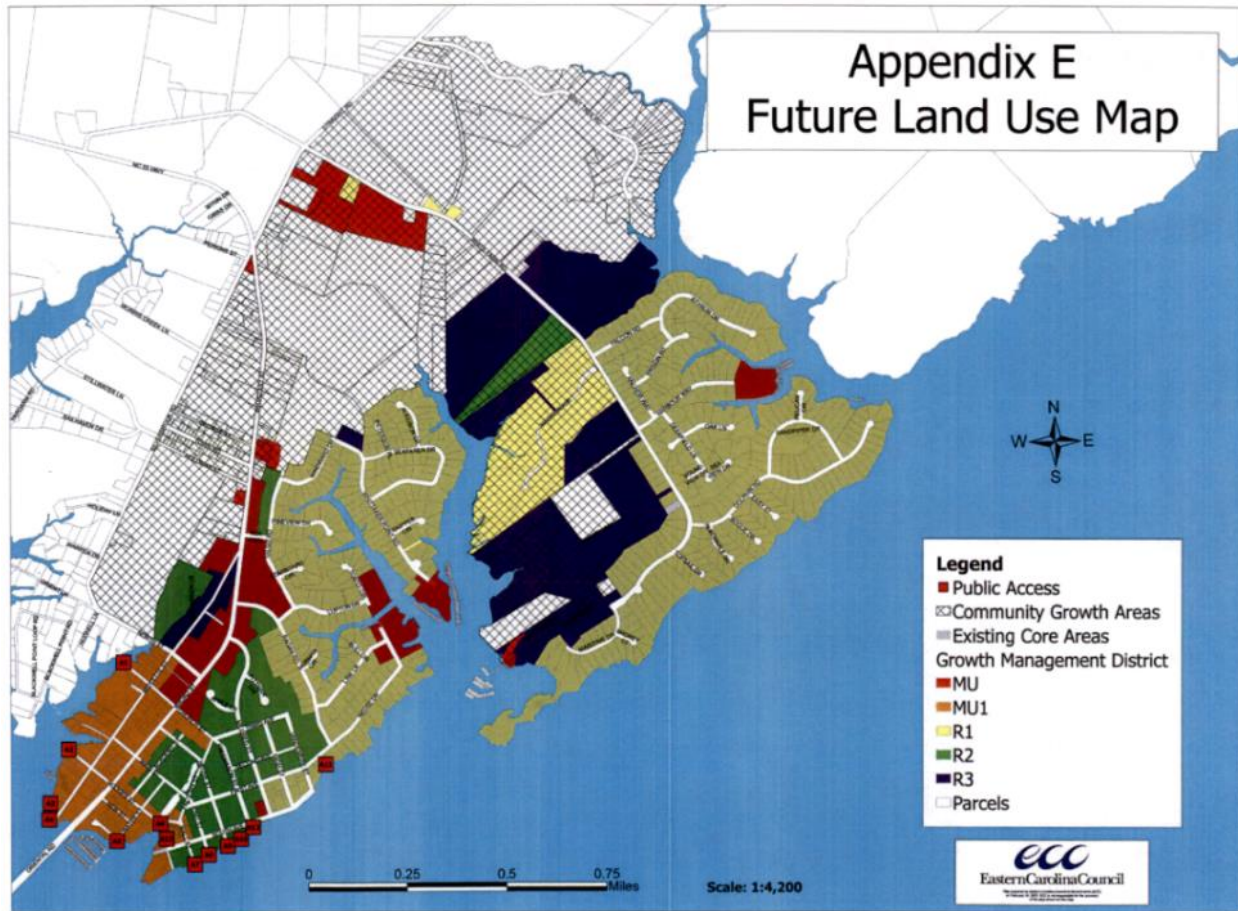


Figure 3.29 - Town of Oriental Future Land Use Map



# 4 RISK ASSESSMENT

## 4.1 OVERVIEW

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

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

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

**44 CFR Subsection D §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. Plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:**

- A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
- (B): An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate; and
- (C): Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

This section describes the Hazard Identification and Risk Assessment process for the development of the Pamlico Sound Regional Hazard Mitigation Plan. It describes how the Region met the following requirements from the 10-step planning process:

- Planning Step 4: Assess the Hazard
- Planning Step 5: Assess the Problem

As defined by FEMA, risk is a combination of hazard, vulnerability, and exposure. “It is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage.”

This hazard risk assessment covers all of the Pamlico Sound Region, including the unincorporated counties and all incorporated jurisdictions participating in this plan.

The risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure to these hazards. The process allows for a better understanding of the potential risk to natural hazards in the county and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events. This risk assessment followed the methodology described in the FEMA publication Understanding Your Risks—Identifying Hazards and Estimating Losses (FEMA 386-2, 2002), which breaks the assessment down to a four-step process:



Data collected through this process has been incorporated into the following sections of this plan:

- **Section 4.2: Hazard Identification** identifies the natural and human-caused hazards that threaten the planning area.
- **Section 4.3: Risk Assessment Methodology and Assumptions** describes how the risk and vulnerability assessment was conducted and presented.
- **Section 4.4: Asset Inventory** details the population, buildings, and critical facilities at risk within the planning area.
- **Section 4.5: Hazard Profiles, Analysis, and Vulnerability** discusses the threats to the planning area, describes previous occurrences of hazard events and the likelihood of future occurrences, and assesses the planning area’s exposure to each hazard profiled; considering assets at risk, critical facilities, and future development trends.
- **Section 4.6: Conclusions on Hazard Risk** summarizes the results of the Priority Risk Index and defines each hazard as a Low, Moderate, or High Risk hazard.

## 4.2 HAZARD IDENTIFICATION

To identify the full range of hazards relevant to the planning area, the HMPC began with a review of the list of hazards identified in the 2023 State Hazard Mitigation Plan and the 2020 Pamlico Sound Regional Hazard Mitigation Plan. This review of hazards is summarized in Table 4.1. The HMPC used this process to ensure consistency across hazard mitigation planning efforts. All hazards on the below list were evaluated for inclusion in this plan update. Where appropriate, the hazard list in this plan was updated to be consistent with the State Hazard Mitigation Plan.

**Table 4.1 – Full Range of Hazards Evaluated**

| Hazard   | Included in 2023 State HMP?                       | Included in 2020 Pamlico Sound Regional HMP? |
|--|---|--|
| Coastal Hazards (Erosion and Rip Current)          | Yes, included with Hurricanes and Coastal Hazards | Yes  |
| Dam Failure  | Yes   | Yes  |
| Levee Failure                                      | No  | Yes  |
| Drought  | Yes   | Yes  |
| Earthquake   | Yes   | Yes  |
| Extreme Heat                                       | Yes   | Yes  |
| Flood  | Yes   | Yes  |
| Hurricane and Tropical Storm                       | Yes, included with Hurricanes and Coastal Hazards | Yes  |
| Severe Weather (Thunderstorm, Lightning, and Hail) | Yes, included with Tornadoes/Thunderstorms        | Yes  |
| Severe Winter Storm                                | Yes   | Yes  |
| Tornado  | Yes, included with Tornadoes/Thunderstorms        | Yes  |
| Wildfire   | Yes   | Yes  |
| Geological Hazards (Landslide & Sinkholes)         | Yes   | No   |
| Infectious Disease                                 | Yes   | No   |
| Hazardous Materials Incident                       | Yes   | No   |
| Radiological Emergency                             | Yes   | No   |

**SECTION 4: RISK ASSESSMENT**

| Hazard                | Included in 2023 State HMP? | Included in 2020 Pamlico Sound Regional HMP? |
|-----------------------|-----------------------------|--|
| Cyber Threat          | Yes                         | No   |
| Terrorism             | Yes                         | No   |
| Civil Disturbance     | Yes                         | No   |
| Electromagnetic Pulse | Yes                         | No   |
| Food Emergency        | Yes                         | No   |

The HMPC evaluated the above list of hazards using existing hazard data, past disaster declarations, local knowledge, and information from the 2023 State Plan and the 2020 Pamlico Sound Regional Hazard Mitigation Plan to determine the significance of these hazards to the planning area. Significance was measured in general terms and focused on key criteria such as frequency and resulting damage, which includes deaths and injuries, as well as property and economic damage.

One significant resource in this effort was the National Oceanic and Atmospheric Administration’s (NOAA) National Center for Environmental Information (NCEI), which contains an archive by county of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce. The database also provides a partial record of other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occurs in connection with another event. The database contains records of tornado events since 1950, thunderstorm wind and hail events since 1955, and all other tracked event types since 1996. NCEI receives storm data from the National Weather Service (NWS), which receives their information from a variety of sources, which include but are not limited to county, state and federal emergency management officials, local law enforcement officials, SkyWarn spotters, NWS damage surveys, newspaper clipping services, the insurance industry and the general public, among others. Due to its reliance on reporting from a variety of sources, the accuracy of NCEI data can be limited. It is not a comprehensive database of all storm and weather events that have occurred, but it provides useful information on past reported events.

The NCEI Storm Events database contains 1,395 records of severe weather events that occurred in Beaufort, Carteret, Craven, and Pamlico Counties in the 26-year period from November 1998 through March 2024. Table 4.2 summarizes these events.

**Table 4.2 – NCEI Severe Weather Reports for the Pamlico Sound Region Counties, Nov 1998 – March 2024**

| Type                    | # of Events | Property Damage | Crop Damage  | Deaths | Injuries |
|-------------------------|-------------|-----------------|--------------|--------|----------|
| Blizzard                | 0           | \$0             | \$0          | 0      | 0        |
| Coastal Flood           | 21          | \$2,000         | \$0          | 0      | 0        |
| Cold/Wind Chill         | 0           | \$0             | \$0          | 0      | 0        |
| Drought                 | 12          | \$0             | \$0          | 0      | 0        |
| Excessive Heat          | 17          | \$0             | \$0          | 0      | 0        |
| Extreme Cold/Wind Chill | 0           | \$0             | \$0          | 0      | 0        |
| Flash Flood             | 77          | \$1,145,000     | \$55,500,000 | 0      | 0        |
| Flood                   | 33          | \$106,000       | \$0          | 1      | 0        |
| Frost/Freeze            | 4           | \$0             | \$0          | 0      | 0        |
| Hail                    | 351         | \$920,000       | \$0          | 0      | 0        |
| Heat                    | 0           | \$0             | \$0          | 0      | 0        |
| Heavy Rain              | 11          | \$0             | \$0          | 0      | 0        |
| Heavy Snow              | 17          | \$0             | \$0          | 0      | 0        |
| High Wind               | 45          | \$9,000         | \$0          | 0      | 0        |
| Hurricane               | 37          | \$316,770,000   | \$74,850,000 | 3      | 5        |
| Ice Storm               | 7           | \$0             | \$0          | 0      | 0        |
| Lightning               | 7           | \$6,107,000     | \$0          | 2      | 1        |
| Storm Surge             | 24          | \$127,240,000   | \$0          | 0      | 0        |



**SECTION 4: RISK ASSESSMENT**

| Type              | # of Events  | Property Damage      | Crop Damage          | Deaths   | Injuries  |
|-------------------|--------------|----------------------|----------------------|----------|-----------|
| Strong Wind       | 10           | \$2,000              | \$0                  | 0        | 0         |
| Thunderstorm Wind | 497          | \$687,000            | \$3,000              | 2        | 41        |
| Tornado           | 115          | \$34101500           | \$0                  | 0        | 35        |
| Tropical Storm    | 55           | \$43,467,000         | \$16,900,000         | 0        | 0         |
| Wildfire          | 0            | \$0                  | \$0                  | 0        | 0         |
| Winter Storm      | 42           | \$0                  | \$0                  | 0        | 0         |
| Winter Weather    | 13           | \$0                  | \$0                  | 0        | 0         |
| <b>Total:</b>     | <b>1,395</b> | <b>\$530,556,500</b> | <b>\$147,253,000</b> | <b>8</b> | <b>82</b> |

Source: National Center for Environmental Information Events Database, accessed July 2024

Note: Losses reflect totals for all impacted areas for each event.

The HMPC also researched past events that resulted in a federal and/or state emergency or disaster declaration for Beaufort, Carteret, Craven, and Pamlico Counties to identify significant hazards. When the local government’s capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. If the disaster is so severe that both the local and state government capacities are exceeded and the Governor certifies the situation is beyond their recovery capabilities, a federal emergency or disaster declaration may be issued allowing for the provision of federal assistance.

Records of designated counties for FEMA major disaster declarations start in 1964. Since then, Beaufort, Carteret, Craven, and Pamlico Counties have been designated in 19 different major disaster declarations. Table 4.3 summarizes the declarations per county, and Table 4.4 provides details for these declarations.

**Table 4.3 - Summary of Disaster Declarations by County**

| County   | Major Declarations Received |
|----------|-----------------------------|
| Beaufort | 16                          |
| Carteret | 13                          |
| Craven   | 16                          |
| Pamlico  | 14                          |

Source: FEMA Disaster Declarations Summary, updated July 2, 2024

**Table 4.4 - FEMA Major Disaster Declarations for Pamlico Sound Region Counties**

| County*      | Disaster # | Dec. Date  | Incident Type   | Event Title                                      |
|--------------|------------|------------|-----------------|--|
| B            | 4588       | 3/3/2021   | Severe Storm(s) | Tropical Storm Eta                               |
| B, Ca, Cr, P | 4568       | 10/14/2020 | Hurricane       | Hurricane Isaias                                 |
| B, Ca, Cr, P | 4487       | 3/25/2020  | Biological      | COVID-19 Pandemic                                |
| B, Ca, Cr, P | 4465       | 10/4/2019  | Hurricane       | Hurricane Dorian                                 |
| B, Ca, Cr, P | 4393       | 9/14/2018  | Hurricane       | Hurricane Florence                               |
| B, Ca, Cr, P | 4285       | 10/10/2016 | Hurricane       | Hurricane Matthew                                |
| B, Ca, Cr, P | 4019       | 8/31/2011  | Hurricane       | Hurricane Irene                                  |
| Cr           | 1969       | 4/19/2011  | Severe Storm(s) | Severe Storms, Tornadoes, and Flooding           |
| B, Cr        | 1942       | 10/14/2010 | Severe Storm(s) | Severe Storms, Flooding, and Straight-Line Winds |
| B            | 1801       | 10/8/2008  | Severe Storm(s) | Tropical Storm Hanna                             |
| Ca, Cr, P    | 1608       | 10/7/2005  | Hurricane       | Hurricane Ophelia                                |
| B, Ca, Cr, P | 1490       | 9/18/2003  | Hurricane       | Hurricane Isabel                                 |
| B, Ca, Cr, P | 1292       | 9/16/1999  | Hurricane       | Hurricane Floyd Major Disaster Declarations      |
| B, Ca, Cr, P | 1291       | 9/9/1999   | Hurricane       | Hurricane Dennis                                 |
| B, Ca, Cr, P | 1240       | 8/27/1998  | Hurricane       | Hurricane Bonnie                                 |

**SECTION 4: RISK ASSESSMENT**

| County*      | Disaster # | Dec. Date | Incident Type    | Event Title               |
|--------------|------------|-----------|------------------|---------------------------|
| B, Ca, Cr, P | 1134       | 9/6/1996  | Hurricane        | Hurricane Fran            |
| B, Ca, Cr, P | 1127       | 7/18/1996 | Hurricane        | Hurricane Bertha          |
| P            | 818        | 12/2/1988 | Tornado          | Severe Storms & Tornadoes |
| B, Cr        | 234        | 2/10/1968 | Severe Ice Storm | Severe Ice Storm          |

Source: FEMA Disaster Declarations Summary, updated July 2, 2024

\*County code: B = Beaufort, Ca = Carteret, Cr = Craven, P = Pamlico

Using the above information and additional discussion, the HMPC evaluated each hazard’s significance to the planning area in order to decide which hazards to include in this plan update. Some hazard titles have been updated either to better encompass the full scope of a hazard or to assess closely related hazards together. Table 4.5 summarizes the determination made for each hazard.

**Table 4.5 - Hazard Evaluation Results**

| Hazard                        | Included in this plan update? | Explanation for Decision  |
|-------------------------------|-------------------------------|---|
| Flooding                      | Yes                           | The 2020 Pamlico Sound plan and 2023 State plan addressed this hazard. Multiple disaster declarations for the region are related to flooding. NCEI reports 155 flood-related events, and flooding is a significant component of hurricanes, which have resulted in most of the region’s past disaster declarations. In keeping with the 2023 State plan, sea level rise is included with the flood hazard.  |
| Hurricane and Coastal Hazards | Yes                           | The 2020 Pamlico Sound plan addressed these hazards and found them high and medium priorities. Past disaster declarations and NCEI storm reports indicate hurricanes are a significant hazard for the region, and associated erosion can be severe. Rip currents warrant inclusion given the region’s coastal location and prominence as a tourist destination. The 2023 State plan combines these hazards; this hazard has been updated accordingly. |
| Severe Winter Weather         | Yes                           | The 2020 Pamlico Sound plan and 2023 State plan addressed this hazard. The region received a past disaster declaration related to ice. NCEI reports 83 severe winter weather related events.  |
| Excessive Heat                | Yes                           | The 2020 Pamlico Sound plan and 2023 State plan addressed this hazard. NCEI reports 17 heat related events.   |
| Earthquake                    | Yes                           | The 2020 Pamlico Sound plan and 2023 State plan addressed this hazard. The region could potentially be impacted by the New Madrid fault and the Charleston fault.   |
| Wildfire                      | Yes                           | The 2020 Pamlico Sound plan and 2023 State plan addressed this hazard. Significant past wildfires have affected the region.   |
| Dam & Levee Failure           | Yes                           | The 2023 State plan addressed dam failure and the 2020 Pamlico Sound plan addressed levees in conjunction with dam failure. The North Carolina Dam Inventory identified 10 high hazard dams in the region, and USACE’s National Levee Database identifies three USACE levee systems in the region.  |
| Drought                       | Yes                           | The 2020 Pamlico Sound plan and 2023 State plan addressed this hazard. There have been multiple past instances of severe drought.   |

**SECTION 4: RISK ASSESSMENT**

| Hazard                                     | Included in this plan update? | Explanation for Decision  |
|--|-------------------------------|---|
| Geological Hazards (Landslide & Sinkholes) | No                            | The 2023 State plan addressed this hazard, but the 2020 Pamlico Sound plan did not. There is no history of geological hazards in the region.  |
| Tornadoes & Thunderstorms                  | Yes                           | The 2020 Pamlico Sound plan addressed these hazards separately, finding them to be moderate and high priority hazards. The region has received multiple disaster declarations for severe storms. NCEI reports 910 severe weather-related events and 115 tornado tracks passing through the region in the past 25 years. Given this frequency, analysis is warranted. The 2023 State plan combines these hazards; this hazard has been updated accordingly |
| Infectious Disease                         | Yes                           | The 2023 State plan addressed this hazard, but the 2020 Pamlico Sound plan did not. The State HMP reports the entire State is equally at risk, but vulnerability is low across all but one impact category. The HMPC decided to evaluate this hazard given the recent Covid-19 pandemic.  |
| Cyber Threat                               | Yes                           | The 2023 State plan addressed this hazard, but the 2020 Pamlico Sound plan did not. The HMPC decided to evaluate this hazard due to high level of perceived risk to community assets and operations.  |
| Hazardous Substances                       | No                            | The 2023 State plan addressed this hazard, but the 2020 Pamlico Sound plan did not. The region considers this hazard more appropriately addressed through emergency operations planning and local staff training.   |
| Radiological Emergency                     | No                            | The 2023 State plan addressed this hazard, but the 2020 Pamlico Sound plan did not. No part of the region falls within the EPZ or IPZ of a nuclear facility.  |
| Terrorism                                  | No                            | The 2023 State plan addressed this hazard, but the 2020 Pamlico Sound plan did not. The region considers this hazard more appropriately addressed at the State level.   |
| Electromagnetic Pulse                      | No                            | The 2023 State plan addressed this hazard, but the 2020 Pamlico Sound plan did not. The region considers this hazard more appropriately addressed at the State level.   |

The final list of hazards included in this plan are as follows:

- Dam & Levee Failure
- Drought
- Earthquake
- Excessive Heat
- Flooding (including Sea Level Rise)
- Hurricane & Coastal Hazards (including Erosion & Rip Current)
- Severe Winter Weather
- Tornadoes & Thunderstorms (including Lightning & Hail)
- Wildfire
- Infectious Disease
- Cyber Threat

## 4.3 RISK ASSESSMENT METHODOLOGY AND ASSUMPTIONS

The Disaster Mitigation Act of 2000 requires that the HMPC evaluate the risks associated with each of the hazards identified in the planning process. Each hazard was evaluated to determine its probability of future occurrence and potential impact. A vulnerability assessment was conducted for each hazard using either quantitative or qualitative methods depending on the available data, to determine its potential to cause significant human and/or monetary losses. A consequence analysis was also completed for each hazard.

Each hazard is profiled in the following format:

### HAZARD DESCRIPTION

This section provides a description of the hazard, including discussion of its speed of onset and duration, as well as any secondary effects followed by details specific to the Pamlico Sound Region.

### LOCATION

This section includes information on the hazard's physical extent, with mapped boundaries where applicable.

### EXTENT

This section includes information on the hazard extent in terms of magnitude and describes how the severity of the hazard can be measured. Where available, the most severe event on record is used as a frame of reference.

### HISTORICAL OCCURRENCES

This section contains information on historical events, including the location and consequences of all past events on record within or near the Pamlico Sound Region.

### PROBABILITY OF FUTURE OCCURRENCE

This section gauges the likelihood of future occurrences based on past events and existing data on current trends or future projections. The historical frequency is generally determined by dividing the number of events observed by the number of years on record and multiplying by 100. This provides the percent chance of the event happening in any given year according to historical occurrence (e.g. 10 winter storm events over a 30-year period equates to a 33 percent chance of experiencing a severe winter storm in any given year).

### CLIMATE CHANGE

Where applicable, this section discusses how climate change may or may not influence the risk posed by the hazard on the planning area in the future. Resources on climate change projections and potential impacts include the Fourth National Climate Assessment, the Fifth National Climate Assessment, and the North Carolina State Climate Office.

### VULNERABILITY ASSESSMENT

This section quantifies, to the extent feasible using best available data, assets at risk to natural hazards and potential loss estimates. People, properties and critical facilities, and environmental assets that are vulnerable to the hazard are identified. Future development is also discussed in this section, including how exposure to the hazard may change in the future or how development may affect hazard risk.

The vulnerability assessments followed the methodology described in the FEMA publication *Understanding Your Risks—Identifying Hazards and Estimating Losses* (August 2001). The vulnerability assessment first describes the total vulnerability and values at risk and then discusses vulnerability by hazard. Data used to support this assessment included the following:

- Geographic Information System (GIS) datasets, including building footprints, topography, aerial photography, and transportation layers;
- Hazard layer GIS datasets from state and federal agencies;
- Written descriptions of inventory and risks provided by the State Hazard Mitigation Plan;
- Written descriptions of inventory and risks provided by the previous Pamlico Sound Regional Hazard Mitigation Plan;
- Exposure and vulnerability estimates provided by North Carolina Emergency Management’s (NCEM) IRISK database; and
- Crop insurance claims by cause from USDA’s Risk Management Agency.

Two distinct risk assessment methodologies were used in the formation of the vulnerability assessment: a quantitative analysis that relies upon best available data and technology and a qualitative analysis that relies on local knowledge and rational decision making.

Vulnerability can be quantified in those instances where there is a known, identified hazard area, such as a mapped floodplain. In these instances, the numbers and types of buildings subject to the identified hazard can be counted and their values tabulated. Where hazard risk cannot be distinctly quantified and modeled, other information can be collected in regard to the hazard area, such as the location of critical facilities, historic structures, and valued natural resources (e.g., an identified wetland or endangered species habitat). Together, this information conveys the vulnerability of that area to that hazard. The quantitative analysis for this plan update involved the use of NCEM’s IRISK database, which provides modeled damage estimates for earthquake, flood, wind, and wildfire hazards.

NCEM’s IRISK database incorporates county building footprint and parcel data. Footprints with an area less than 500 square feet were excluded from the analysis. To determine if a building is in a hazard area, the building footprints were intersected with each of the mapped hazard areas. If a building intersects two or more hazard areas (such as the 1-percent-annual-chance flood zone and the 0.2-percent-annual-chance flood zone), it is counted as being in the hazard area of highest risk. The parcel data provided building value and year built. Building value was used to determine the value of buildings at risk. Year built was used to determine if the building was constructed prior to or after the community had joined the NFIP and had an effective FIRM and building codes enforced.

Census blocks and Summary File 1 from the 2020 Census were used to determine population at risk. This included the total population, as well as the vulnerable elderly and children age groups. To determine population at risk, the census blocks were intersected with the hazard area. To better determine the actual number of people at risk, the intersecting area of the census block was calculated and divided by the total area of the census block to determine a ratio of area at risk. This ratio was applied to the population of the census block. For example, a census block has a population of 400 people. Five percent of the census block intersects the 1-percent-annual-chance flood hazard area. The ratio estimates that 20 people are then at risk within the 1-percent-annual-chance flood hazard area (5% of the total population for that census block).

Certain assumptions are inherent in any risk assessment. For the Pamlico Sound Regional HMP, three primary assumptions were discussed by the HMPC from the beginning of the risk assessment process: (1) that the best readily available data would be used, (2) that the hazard data selected for use is reasonably accurate for mitigation planning purposes, and (3) that the risk assessment will be regional in nature with local, municipal-level data provided where appropriate and practical.

Key methodologies and assumptions made for specific hazards analysis are described in their respective profiles.

### **PRIORITY RISK INDEX**

The conclusions drawn from the hazard profiling and vulnerability assessment process can be used to prioritize all potential hazards to the Pamlico Sound Region. The Priority Risk Index (PRI) was applied for this purpose because it provides a standardized numerical value so that hazards can be compared against one another (the higher the PRI value, the greater the hazard risk). PRI values are obtained by assigning varying degrees of risk to five categories for each hazard (probability, impact, spatial extent, warning time, and duration). Each degree of risk was assigned a value (1 to 4) and a weighting factor as summarized in Table 4.6.

The sum of all five risk assessment categories equals the final PRI value, demonstrated in the equation below (the highest possible PRI value is 4.0).

$$\text{PRI} = [(\text{PROBABILITY} \times .30) + (\text{IMPACT} \times .30) + (\text{SPATIAL EXTENT} \times .20) + (\text{WARNING TIME} \times .10) + (\text{DURATION} \times .10)]$$

The purpose of the PRI is to categorize and prioritize all potential hazards for the Pamlico Sound Region as high, moderate, or low risk. The summary hazard classifications generated through the use of the PRI allow for the prioritization of high and moderate hazard risks for mitigation planning purposes.

The results of the risk assessment and PRI scoring are provided in Section 4.6 Conclusions on Hazard Risk.

**SECTION 4: RISK ASSESSMENT**

**Table 4.6 – Priority Risk Index**

| <b>RISK ASSESSMENT CATEGORY</b>   | <b>LEVEL</b>            | <b>DEGREE OF RISK CRITERIA</b>  | <b>INDEX</b> | <b>WEIGHT</b> |
|---|-------------------------|---|--------------|---------------|
| <b>PROBABILITY</b><br>What is the likelihood of a hazard event occurring in a given year?   | <b>UNLIKELY</b>         | LESS THAN 1% ANNUAL PROBABILITY   | <b>1</b>     | <b>30%</b>    |
|   | <b>POSSIBLE</b>         | BETWEEN 1 & 10% ANNUAL PROBABILITY  | <b>2</b>     |               |
|   | <b>LIKELY</b>           | BETWEEN 10 & 100% ANNUAL PROBABILITY  | <b>3</b>     |               |
|   | <b>HIGHLY LIKELY</b>    | 100% ANNUAL PROBABILITY   | <b>4</b>     |               |
| <b>IMPACT</b><br>In terms of injuries, damage, or death, would you anticipate impacts to be minor, limited, critical, or catastrophic when a significant hazard event occurs? | <b>MINOR</b>            | VERY FEW INJURIES, IF ANY. ONLY MINOR PROPERTY DAMAGE & MINIMAL DISRUPTION ON QUALITY OF LIFE. TEMPORARY SHUTDOWN OF CRITICAL FACILITIES.                     | <b>1</b>     | <b>30%</b>    |
|   | <b>LIMITED</b>          | MINOR INJURIES ONLY. MORE THAN 10% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR > 1 DAY                    | <b>2</b>     |               |
|   | <b>CRITICAL</b>         | MULTIPLE DEATHS/INJURIES POSSIBLE. MORE THAN 25% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR > 1 WEEK.    | <b>3</b>     |               |
|   | <b>CATASTROPHIC</b>     | HIGH NUMBER OF DEATHS/INJURIES POSSIBLE. MORE THAN 50% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES > 30 DAYS. | <b>4</b>     |               |
| <b>SPATIAL EXTENT</b><br>How large of an area could be impacted by a hazard event? Are impacts localized or regional?   | <b>NEGLECTIBLE</b>      | LESS THAN 1% OF AREA AFFECTED   | <b>1</b>     | <b>20%</b>    |
|   | <b>SMALL</b>            | BETWEEN 1 & 10% OF AREA AFFECTED  | <b>2</b>     |               |
|   | <b>MODERATE</b>         | BETWEEN 10 & 50% OF AREA AFFECTED   | <b>3</b>     |               |
|   | <b>LARGE</b>            | BETWEEN 50 & 100% OF AREA AFFECTED  | <b>4</b>     |               |
| <b>WARNING TIME</b><br>Is there usually some lead time associated with the hazard event? Have warning measures been implemented?  | <b>MORE THAN 24 HRS</b> | SELF DEFINED  | <b>1</b>     | <b>10%</b>    |
|   | <b>12 TO 24 HRS</b>     | SELF DEFINED  | <b>2</b>     |               |
|   | <b>6 TO 12 HRS</b>      | SELF DEFINED  | <b>3</b>     |               |
|   | <b>LESS THAN 6 HRS</b>  | SELF DEFINED  | <b>4</b>     |               |
| <b>DURATION</b><br>How long does the hazard event usually last?   | <b>LESS THAN 6 HRS</b>  | SELF DEFINED  | <b>1</b>     | <b>10%</b>    |
|   | <b>LESS THAN 24 HRS</b> | SELF DEFINED  | <b>2</b>     |               |
|   | <b>LESS THAN 1 WEEK</b> | SELF DEFINED  | <b>3</b>     |               |
|   | <b>MORE THAN 1 WEEK</b> | SELF DEFINED  | <b>4</b>     |               |

## 4.4 ASSET INVENTORY

### 4.4.1 POPULATION

NCEM's IRISK database provided the asset inventory used for this vulnerability assessment. Population data in IRISK is pulled from the 2020 Census and includes a breakdown of population into two subpopulations considered to be a greater risk than the general population, elderly individuals and children. Table 4.7 details the population counts by jurisdiction used for the vulnerability assessment.

**Table 4.7 - Population Counts by Jurisdiction, 2020**

| Jurisdiction                          | 2020 Census Population | Elderly (Age 65 and Over) | Children (Age 5 and Under) |
|---------------------------------------|------------------------|---------------------------|----------------------------|
| <b>Beaufort</b>                       |                        |                           |                            |
| Beaufort County (Unincorporated Area) | 33,905                 | 8,207                     | 1,523                      |
| City of Washington                    | 11,124                 | 2,514                     | 684                        |
| Town of Aurora                        | 104                    | 27                        | 4                          |
| Town of Bath                          | 242                    | 69                        | 13                         |
| Town of Belhaven                      | 441                    | 129                       | 15                         |
| Town of Chocowinity                   | 116                    | 25                        | 5                          |
| Town of Pantego                       | 12                     | 2                         | 1                          |
| Town of Washington Park               | 168                    | 41                        | 9                          |
| <b>Subtotal Beaufort</b>              | <b>46,112</b>          | <b>11,014</b>             | <b>2,254</b>               |
| <b>Carteret</b>                       |                        |                           |                            |
| Carteret County (Unincorporated Area) | 34,687                 | 8,258                     | 1,409                      |
| Town of Atlantic Beach                | 856                    | 349                       | 6                          |
| Town of Beaufort                      | 3,815                  | 1,094                     | 141                        |
| Town of Bogue                         | 795                    | 140                       | 42                         |
| Town of Cape Carteret                 | 1,647                  | 385                       | 85                         |
| Town of Cedar Point                   | 2,174                  | 516                       | 112                        |
| Town of Emerald Isle                  | 3,275                  | 1,005                     | 116                        |
| Town of Indian Beach                  | 340                    | 140                       | 8                          |
| Town of Morehead City                 | 19,390                 | 4,680                     | 979                        |
| Town of Newport                       | 9,170                  | 1,730                     | 303                        |
| Town of Peletier                      | 617                    | 113                       | 21                         |
| Town of Pine Knoll Shores             | 1,373                  | 566                       | 32                         |
| <b>Subtotal Carteret</b>              | <b>78,139</b>          | <b>18,976</b>             | <b>3,254</b>               |
| <b>Craven</b>                         |                        |                           |                            |
| Craven County (Unincorporated Area)   | 64,150                 | 12,919                    | 3,779                      |
| City of Havelock                      | 8,226                  | 425                       | 775                        |
| City of New Bern                      | 26,554                 | 5,735                     | 1,705                      |
| Town of Bridgeton                     | 147                    | 28                        | 11                         |
| Town of Cove City                     | 21                     | 5                         | 3                          |
| Town of Dover                         | 31                     | 8                         | 4                          |
| Town of River Bend                    | 1,852                  | 616                       | 34                         |



**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                         | 2020 Census Population | Elderly (Age 65 and Over) | Children (Age 5 and Under) |
|--------------------------------------|------------------------|---------------------------|----------------------------|
| Town of Trent Woods                  | 4,633                  | 1,425                     | 153                        |
| Town of Vanceboro                    | 78                     | 19                        | 3                          |
| <b>Subtotal Craven</b>               | <b>105,692</b>         | <b>21,180</b>             | <b>6,467</b>               |
| <b>Pamlico</b>                       |                        |                           |                            |
| Pamlico County (Unincorporated Area) | 11,911                 | 3,592                     | 331                        |
| Town of Alliance                     | 159                    | 37                        | 8                          |
| Town of Arapahoe                     | 118                    | 37                        | 5                          |
| Town of Bayboro                      | 144                    | 34                        | 7                          |
| Town of Grantsboro                   | 198                    | 44                        | 7                          |
| Town of Mesic                        | 17                     | 5                         | 0                          |
| Town of Minnesott Beach              | 128                    | 40                        | 4                          |
| Town of Oriental                     | 295                    | 116                       | 12                         |
| Town of Stonewall                    | 73                     | 32                        | 2                          |
| Town of Vandemere                    | 24                     | 8                         | 0                          |
| <b>Subtotal Pamlico</b>              | <b>13,067</b>          | <b>3,945</b>              | <b>376</b>                 |
| <b>Total Region</b>                  | <b>243,010</b>         | <b>55,115</b>             | <b>12,351</b>              |

Source: NCEM IRISK Database; 2020 Decennial Census

**4.4.2 PROPERTY**

Building counts were also provided by the IRISK database and are detailed in Table 4.8. These values were generated using locally-provided building footprint and parcel data as well as data generated by NCEM in 2010 and subsequently updated. The methodology for generating the building asset inventory is described in greater detail in Section 4.3. The IRISK building inventory reflects a 21.8% increase in total building count and a 28.6% increase in total exposed building value since the development of the 2020 plan. Section 3 Planning Area Profile describes the growth that has occurred since 2010 and provides context for understanding the degree to which exposure and vulnerability may have increased.

**Table 4.8 - Building Counts and Values by Jurisdiction**

| Jurisdiction                          | Building Count | Building Value         |
|---------------------------------------|----------------|------------------------|
| <b>Beaufort</b>                       |                |                        |
| Beaufort County (Unincorporated Area) | 20,577         | \$1,692,286,922        |
| City of Washington                    | 5,790          | \$816,423,566          |
| Town of Aurora                        | 579            | \$35,523,897           |
| Town of Bath                          | 561            | \$142,692,588          |
| Town of Belhaven                      | 1,087          | \$142,638,647          |
| Town of Chocowinity                   | 398            | \$127,489,917          |
| Town of Pantego                       | 132            | \$8,731,683            |
| Town of Washington Park               | 232            | \$29,657,288           |
| <b>Subtotal Beaufort</b>              | <b>29,356</b>  | <b>\$2,995,444,508</b> |
| <b>Carteret</b>                       |                |                        |
| Carteret County (Unincorporated Area) | 29,284         | \$3,016,319,692        |
| Town of Atlantic Beach                | 4,141          | \$1,099,977,842        |
| Town of Beaufort                      | 4,605          | \$716,003,873          |

**SECTION 4: RISK ASSESSMENT**

| <b>Jurisdiction</b>                  | <b>Building Count</b> | <b>Building Value</b>   |
|--------------------------------------|-----------------------|-------------------------|
| Town of Bogue                        | 642                   | \$76,334,990            |
| Town of Cape Carteret                | 1,763                 | \$249,212,356           |
| Town of Cedar Point                  | 1,915                 | \$194,177,348           |
| Town of Emerald Isle                 | 7,154                 | \$1,823,928,355         |
| Town of Indian Beach                 | 1,138                 | \$339,620,489           |
| Town of Morehead City                | 10,811                | \$2,086,252,783         |
| Town of Newport                      | 5,441                 | \$644,203,106           |
| Town of Peletier                     | 943                   | \$78,010,380            |
| Town of Pine Knoll Shores            | 2,253                 | \$803,369,640           |
| <b>Subtotal Carteret</b>             | <b>70,090</b>         | <b>\$11,127,410,854</b> |
| <b>Craven</b>                        |                       |                         |
| Craven County (Unincorporated Area)  | 24,876                | \$3,182,457,922         |
| City of Havelock                     | 5,417                 | \$1,461,339,402         |
| City of New Bern                     | 13,049                | \$2,549,421,835         |
| Town of Bridgeton                    | 326                   | \$94,517,232            |
| Town of Cove City                    | 294                   | \$19,104,332            |
| Town of Dover                        | 299                   | \$20,203,294            |
| Town of River Bend                   | 1,553                 | \$208,445,155           |
| Town of Trent Woods                  | 1,918                 | \$393,484,734           |
| Town of Vanceboro                    | 522                   | \$192,244,515           |
| <b>Subtotal Craven</b>               | <b>48,254</b>         | <b>\$8,121,218,421</b>  |
| <b>Pamlico</b>                       |                       |                         |
| Pamlico County (Unincorporated Area) | 6,428                 | \$358,055,810           |
| Town of Alliance                     | 577                   | \$30,365,988            |
| Town of Arapahoe                     | 430                   | \$18,404,329            |
| Town of Bayboro                      | 515                   | \$68,846,775            |
| Town of Grantsboro                   | 584                   | \$36,880,003            |
| Town of Mesic                        | 186                   | \$8,393,509             |
| Town of Minnesott Beach              | 403                   | \$44,491,896            |
| Town of Oriental                     | 1,378                 | \$154,623,073           |
| Town of Stonewall                    | 227                   | \$9,402,009             |
| Town of Vandemere                    | 192                   | \$10,310,031            |
| <b>Subtotal Pamlico</b>              | <b>10,920</b>         | <b>\$739,773,423</b>    |
| <b>Total Region</b>                  | <b>158,620</b>        | <b>\$22,983,847,206</b> |

Source: NCEM IRISK Database

**4.4.3 CRITICAL INFRASTRUCTURE & KEY RESOURCES AND HIGH POTENTIAL LOSS PROPERTIES**

The IRISK database also identifies Critical Infrastructure and Key Resources (CIKR) buildings as well as High Potential Loss Properties. These properties are detailed in Table 4.9 and Table 4.10, respectively. Details by jurisdiction can be found in county annexes.

**Table 4.9 – Critical Infrastructure and Key Resources by Type and County**

| County       | Food and Agriculture | Banking and Finance | Chemical & Hazardous | Commercial   | Communications | Critical Manufacturing | EM       | Healthcare | Government Facilities | Defense Industrial Base | National Monuments and Icons | Nuclear Reactors, Materials and | Postal and Shipping | Transportation Systems | Energy    | Emergency Services | Water      | Total         |
|--------------|----------------------|---------------------|----------------------|--------------|----------------|------------------------|----------|------------|-----------------------|-------------------------|------------------------------|---------------------------------|---------------------|------------------------|-----------|--------------------|------------|---------------|
| Beaufort     | 1,236                | 355                 | 0                    | 1,353        | 3              | 447                    | 0        | 82         | 247                   | 0                       | 0                            | 0                               | 0                   | 0                      | 4         | 26                 | 13         | <b>3,766</b>  |
| Carteret     | 604                  | 393                 | 1                    | 3,205        | 7              | 993                    | 0        | 237        | 465                   | 1                       | 1                            | 4                               | 2                   | 481                    | 38        | 61                 | 62         | <b>6,555</b>  |
| Craven       | 1,218                | 433                 | 0                    | 2,301        | 0              | 271                    | 0        | 130        | 391                   | 0                       | 0                            | 0                               | 0                   | 0                      | 12        | 68                 | 52         | <b>4,876</b>  |
| Pamlico      | 214                  | 78                  | 0                    | 643          | 1              | 78                     | 0        | 10         | 67                    | 0                       | 0                            | 0                               | 0                   | 0                      | 1         | 9                  | 12         | <b>1,113</b>  |
| <b>Total</b> | <b>3,272</b>         | <b>1,259</b>        | <b>1</b>             | <b>7,502</b> | <b>11</b>      | <b>1,789</b>           | <b>0</b> | <b>459</b> | <b>1,170</b>          | <b>1</b>                | <b>1</b>                     | <b>4</b>                        | <b>2</b>            | <b>481</b>             | <b>55</b> | <b>164</b>         | <b>139</b> | <b>16,310</b> |

Source: NCEM Risk Management Tool

**Table 4.10 – High Potential Loss Properties by Use and County**

| County       | Residential | Commercial | Industrial | Government | Agricultural | Religious  | Utilities  | Total        |
|--------------|-------------|------------|------------|------------|--------------|------------|------------|--------------|
| Beaufort     | 24          | 66         | 8          | 38         | 0            | 19         | 9          | <b>164</b>   |
| Carteret     | 111         | 172        | 4          | 63         | 0            | 29         | 66         | <b>445</b>   |
| Craven       | 48          | 147        | 36         | 126        | 2            | 118        | 36         | <b>513</b>   |
| Pamlico      | 0           | 7          | 1          | 10         | 0            | 0          | 3          | <b>21</b>    |
| <b>Total</b> | <b>183</b>  | <b>392</b> | <b>49</b>  | <b>237</b> | <b>2</b>     | <b>166</b> | <b>114</b> | <b>1,143</b> |

Source: NCEM Risk Management Tool

Using the existing CIKR inventory and local data, the HMPC and community staff refined and supplemented the IRISK asset inventory with a current list of critical facilities. These assets are considered community lifelines, which are defined by FEMA as the buildings and infrastructure that enable the continuous operation of critical business and government functions and are essential to human health and safety or economic security. Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. These critical facilities are a priority for mitigation planning and were examined against known hazard areas, where possible, in this risk assessment.

Critical facilities are summarized by county and FEMA lifeline category in Table 4.11 through Table 4.14 and are shown in Figure 4.1 through Figure 4.4. More detailed maps of critical facilities are provided in the community annexes.

**Table 4.11 – Critical Facilities, Beaufort County**

| FEMA Lifeline  | Facility Count | Structure Value |
|----------------|----------------|-----------------|
| Communications | 0              | \$0             |
| Energy         | 0              | \$0             |

**SECTION 4: RISK ASSESSMENT**

| <b>FEMA Lifeline</b>     | <b>Facility Count</b> | <b>Structure Value</b> |
|--------------------------|-----------------------|------------------------|
| Food, Hydration, Shelter | 108                   | \$212,363,078          |
| Hazardous Materials      | 0                     | \$0                    |
| Health and Medical       | 44                    | \$1,946,506            |
| Safety and Security      | 43                    | \$70,974,562           |
| Transportation           | 0                     | \$0                    |
| Water Systems            | 45                    | \$74,847,631           |
| <b>Total</b>             | <b>240</b>            | <b>\$360,131,777</b>   |

**Table 4.12 - Critical Facilities, Carteret County**

| <b>FEMA Lifeline</b>     | <b>Facility Count</b> | <b>Structure Value</b> |
|--------------------------|-----------------------|------------------------|
| Communications           | 21                    | \$99,981,090           |
| Energy                   | 2                     | \$2,809,157            |
| Food, Hydration, Shelter | 43                    | \$126,146,394          |
| Hazardous Materials      | 0                     | \$0                    |
| Health and Medical       | 38                    | \$9,498,848            |
| Safety and Security      | 85                    | \$67,568,282           |
| Transportation           | 19                    | \$40,646,009           |
| Water Systems            | 166                   | \$42,161,127           |
| <b>Total</b>             | <b>374</b>            | <b>\$388,810,907</b>   |

**Table 4.13 - Critical Facilities, Craven County**

| <b>FEMA Lifeline</b>     | <b>Facility Count</b> | <b>Structure Value</b> |
|--------------------------|-----------------------|------------------------|
| Communications           | 0                     | \$0                    |
| Energy                   | 0                     | \$0                    |
| Food, Hydration, Shelter | 101                   | \$78,656,820           |
| Hazardous Materials      | 0                     | \$0                    |
| Health and Medical       | 34                    | \$262,699,300          |
| Safety and Security      | 60                    | \$7,194,110            |
| Transportation           | 0                     | \$0                    |
| Water Systems            | 93                    | \$32,360,290           |
| <b>Total</b>             | <b>288</b>            | <b>\$380,910,520</b>   |

**Table 4.14 - Critical Facilities, Pamlico County**

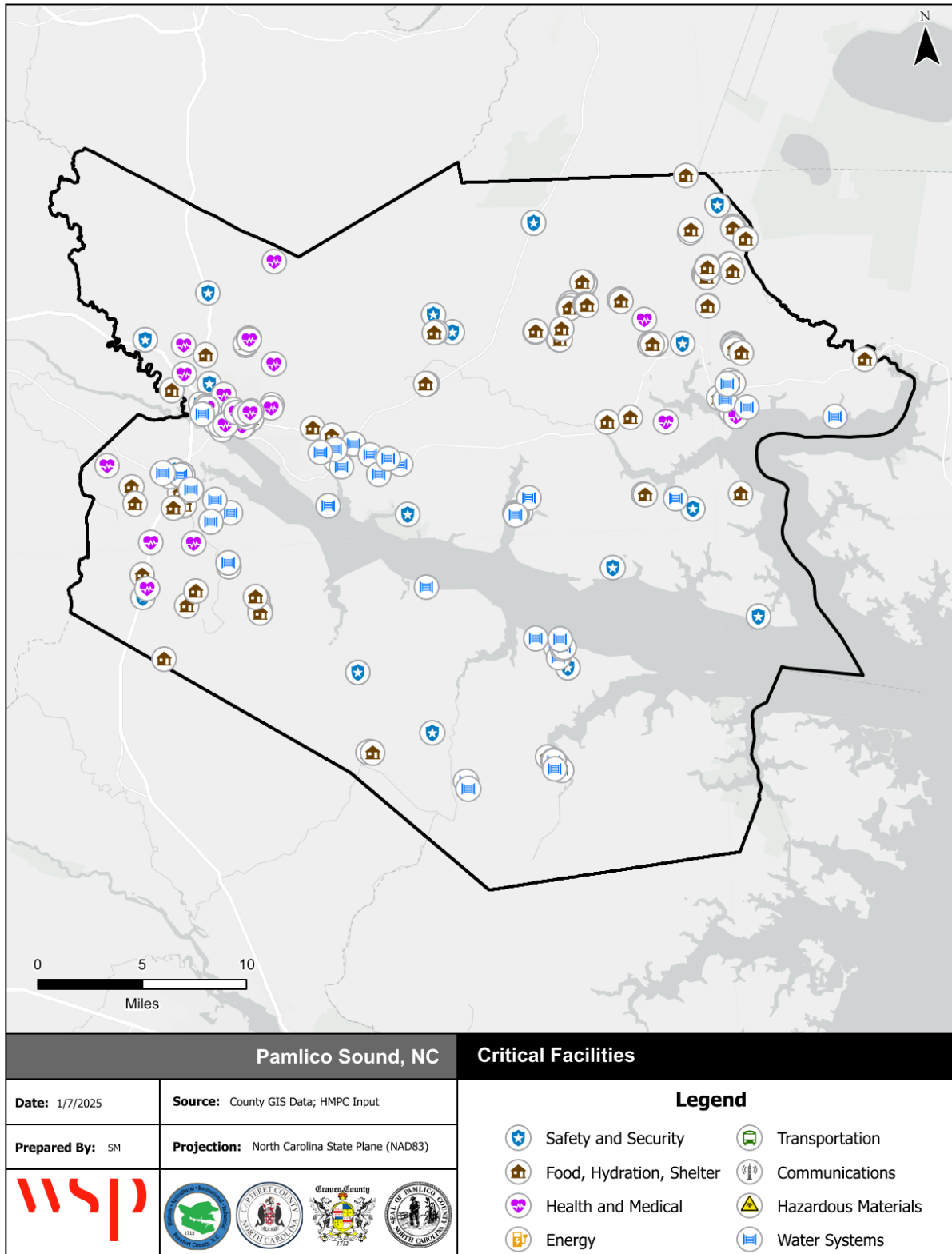
| <b>FEMA Lifeline</b>     | <b>Facility Count</b> | <b>Structure Value</b> |
|--------------------------|-----------------------|------------------------|
| Communications           | 0                     | \$0                    |
| Energy                   | 0                     | \$0                    |
| Food, Hydration, Shelter | 11                    | \$48,777,848           |
| Hazardous Materials      | 0                     | \$0                    |

**SECTION 4: RISK ASSESSMENT**

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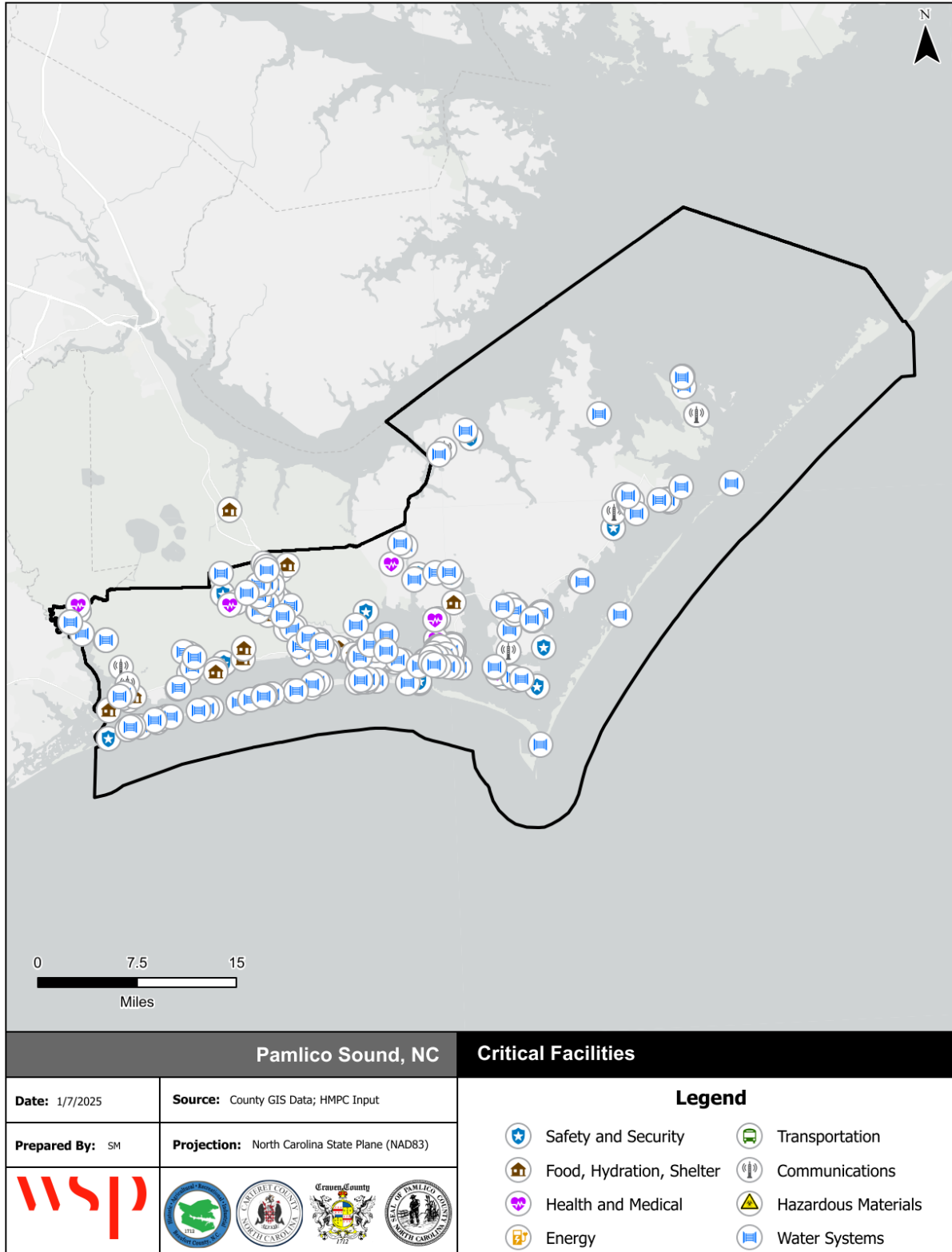
| <b>FEMA Lifeline</b> | <b>Facility Count</b> | <b>Structure Value</b> |
|----------------------|-----------------------|------------------------|
| Health and Medical   | 11                    | \$797,108              |
| Safety and Security  | 17                    | \$11,885,888           |
| Transportation       | 0                     | \$0                    |
| Water Systems        | 12                    | \$5,622,700            |
| <b>Total</b>         | <b>51</b>             | <b>\$67,083,544</b>    |

Figure 4.1 - Beaufort County Critical Facilities



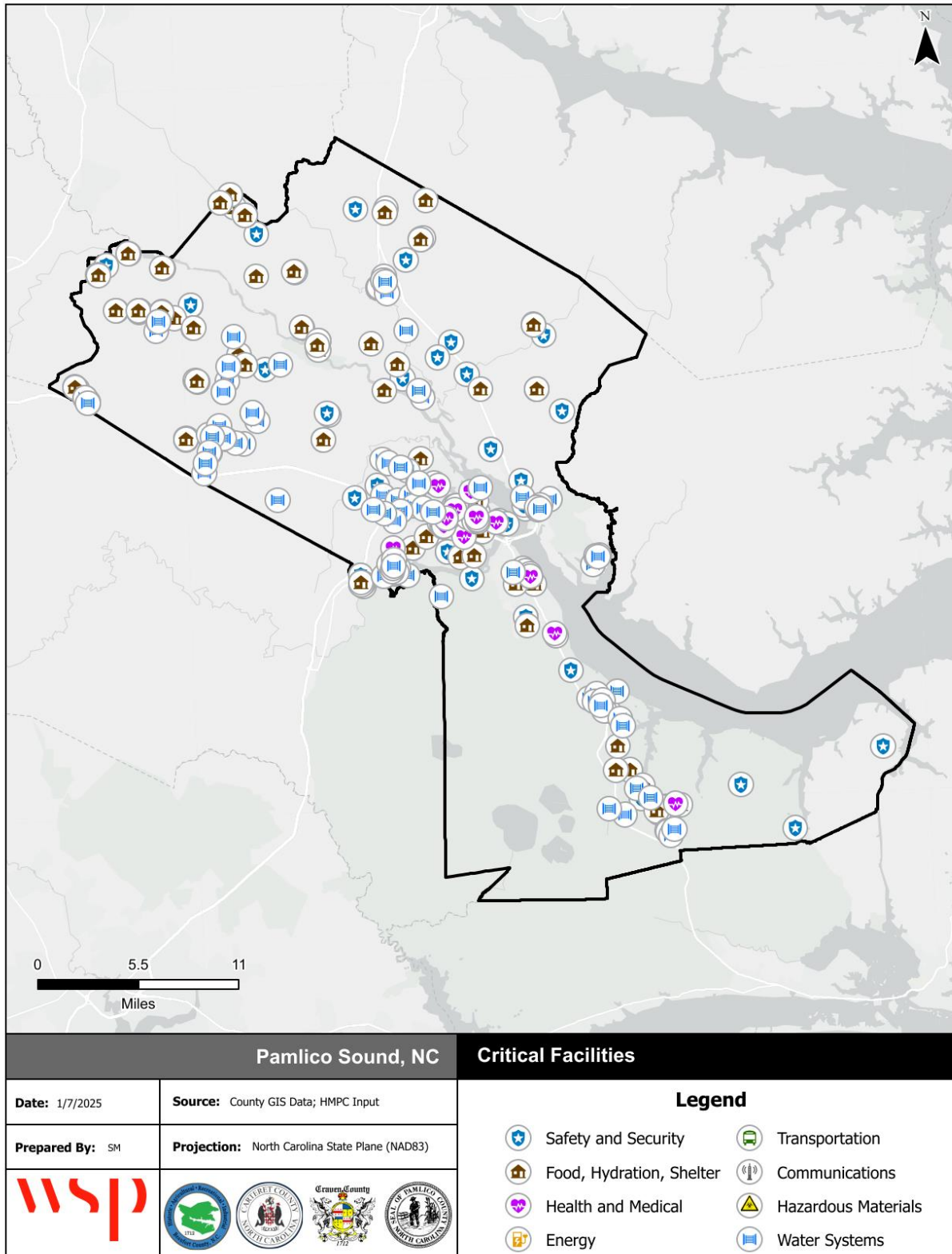
Source: NCEM IRISK Database, GIS Analysis; HMPC input

Figure 4.2 – Carteret County Critical Facilities



Source: NCEM IRISK Database, GIS Analysis; HMPC input

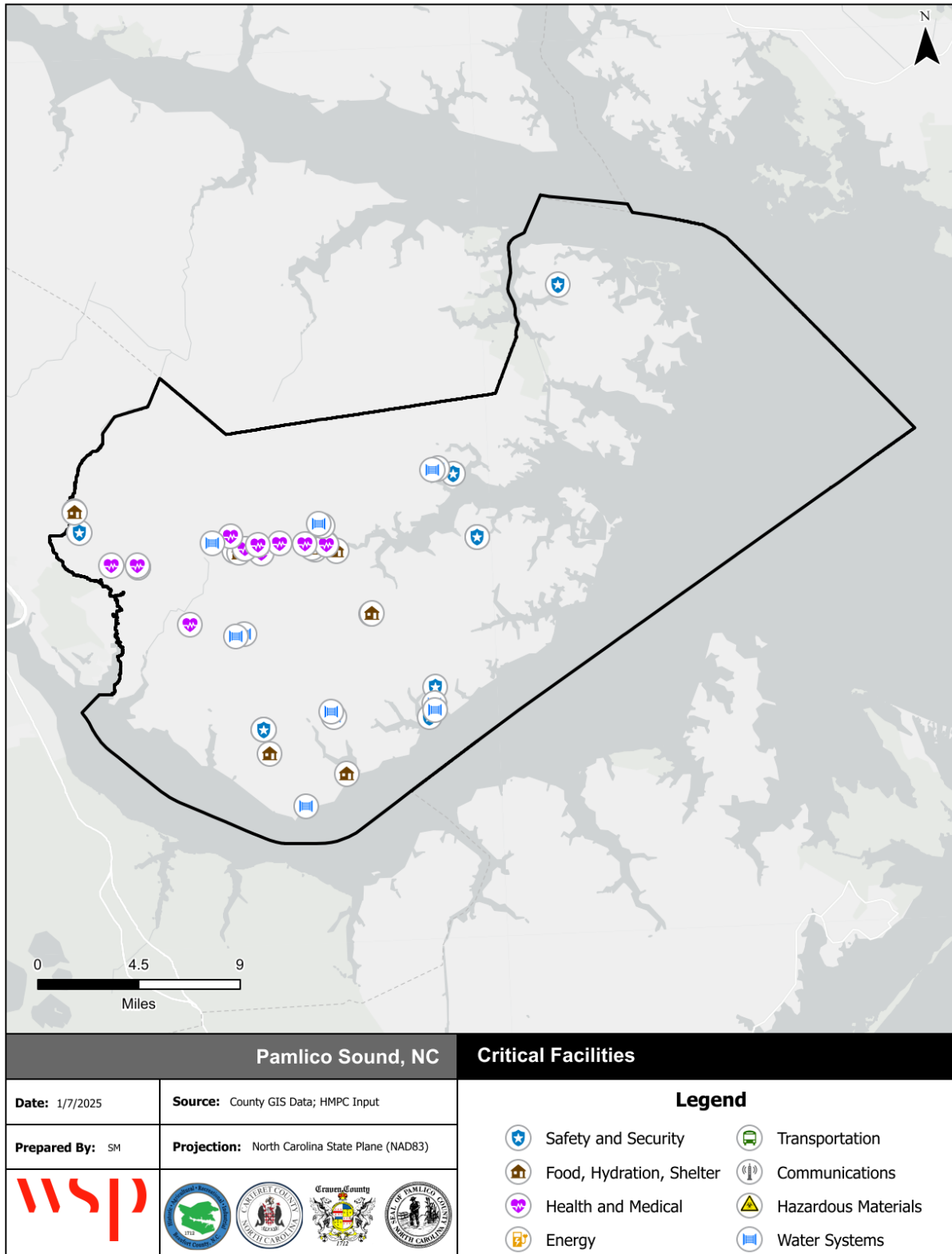
Figure 4.3 - Craven County Critical Facilities



Source: NCEM IRISK Database, GIS Analysis; HMPC input



Figure 4.4 – Pamlico County Critical Facilities



Source: NCEM IRISK Database, GIS Analysis; HMPC input

**4.4.4 AGRICULTURE**

The agricultural industry is also highly vulnerable to natural hazards, which can cause both crop and livestock losses. The exposure of agriculture in the region was measured using the USDA’s 2022 Census of Agriculture. Table 4.15 below summarizes the agricultural exposure in the Region by county.

**Table 4.15 - Summary of Agriculture Exposure by County**

| <b>County</b>   | <b>Number of Farms</b> | <b>Acreage in Farms</b> | <b>Proportion of Total Land Area in Farms</b> | <b>Acreage with Crop Insurance</b> | <b>Estimated Market Value of Land &amp; Buildings</b> |
|-----------------|------------------------|-------------------------|---|------------------------------------|---|
| Beaufort County | 259                    | 139,853                 | 26.3%   | 114,864 (82.1%)                    | \$2,337,456   |
| Carteret County | 94                     | 60,950                  | 18.8%   | 43,169 (70.8%)                     | \$1,446,877   |
| Craven County   | 292                    | 100,825                 | 22.3%   | 46,987 (46.6%)                     | \$1,057,477   |
| Pamlico County  | 81                     | 54,675                  | 25.4%   | 37,604 (68.7%)                     | \$2,174,747   |

Source: USDA 2022 Census of Agriculture

## 4.5 HAZARD PROFILES, ANALYSIS, AND VULNERABILITY

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### 4.5.1 DAM & LEVEE FAILURE

#### HAZARD BACKGROUND

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##### *DAM FAILURE*

A dam is a barrier constructed across a watercourse that stores, controls, or diverts water. Dams are usually constructed of earth, rock, concrete, or mine tailings. The water impounded behind a dam is referred to as the reservoir and is measured in acre-feet. One acre-foot is the volume of water that covers one acre of land to a depth of one foot. Dams can benefit farmland, provide recreation areas, generate electrical power, and help control erosion and flooding issues. A dam failure is the collapse or breach of a dam that causes downstream flooding. Dam failures may be caused by natural events, manmade events, or a combination. Due to the lack of advance warning, failures resulting from natural events, such as earthquakes or landslides, may be particularly severe. Prolonged rainfall and subsequent flooding is the most common cause of dam failure.

Dam failures usually occur when the spillway capacity is inadequate, and water overtops the dam or when internal erosion in dam foundation occurs (also known as piping). If internal erosion or overtopping causes a full structural breach, a high-velocity, debris-laden wall of water is released and rushes downstream, damaging or destroying anything in its path. Overtopping is the primary cause of earthen dam failure in the United States.

Dam failures can also result from any one or a combination of the following:

- Prolonged periods of rainfall and flooding;
- Inadequate spillway capacity, resulting in excess overtopping flows;
- Internal erosion caused by embankment or foundation leakage or piping;
- Improper maintenance, including failure to remove trees, repair internal seepage problems, replace lost material from the cross-section of the dam and abutments, or maintain gates, valves, and other operational components;
- Improper design, including the use of improper construction materials and construction practices;
- Negligent operation, including the failure to remove or open gates or valves during high flow periods;
- Failure of upstream dams on the same waterway; or
- High winds, which can cause significant wave action and result in substantial erosion.

Water released by a failed dam generates tremendous energy and can cause a flood that is catastrophic to life and property. Dam failures are generally catastrophic if the structure is breached or significantly damaged. A catastrophic dam failure could challenge local response capabilities and require evacuations to save lives. Impacts to life safety will depend on the warning time and the resources available to notify and evacuate the public. Major casualties and loss of life could result, as well as water quality and health issues. Potentially catastrophic effects to roads, bridges, and homes are also of major concern. Associated water quality and health concerns could also be issues. Factors that influence the potential severity of a full or partial dam failure are the amount of water impounded; the density, type, and value of development and infrastructure located downstream; and the speed of failure.

Dam failure can occur with little warning. Intense storms may produce a flood in a few hours or even minutes for upstream locations. Flash floods occur within six hours of the beginning of heavy rainfall,

and dam failure may occur within hours of the first signs of breaching. Other failures and breaches can take much longer to occur, from days to weeks, as a result of debris jams or the accumulation of melting snow.

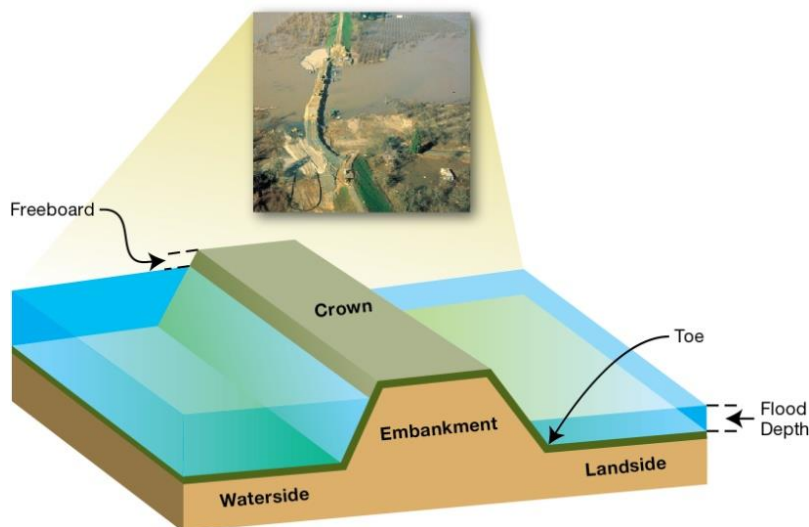
Dam failures are of particular concern because the failure of a large dam has the potential to cause more death and destruction than the failure of any other manmade structure. This is because of the destructive power of the flood wave that would be released by the sudden collapse of a large dam. Dams are innately hazardous structures. Failure or poor operation can result in the release of the reservoir contents—this can include water, mine wastes, or agricultural refuse—causing negative impacts upstream or downstream or at locations far from the dam. Negative impacts of primary concern are loss of human life, property damage, lifeline disruption, and environmental damage.

### LEVEE FAILURE

FEMA defines a levee as “a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water in order to reduce the risk from temporary flooding.” Levee systems consist of levees, floodwalls, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices. Levees often have “interior drainage” systems that work in conjunction with the levees to take water from the landward side to the water side. An interior drainage system may include culverts, canals, ditches, storm sewers, and/or pumps.

Levees and floodwalls are constructed from the earth, compacted soil or artificial materials, such as concrete or steel. To protect against erosion and scouring, earthen levees can be covered with grass and gravel or hard surfaces like stone, asphalt, or concrete. Levees and floodwalls are typically built parallel to a waterway, most often a river, in order to reduce the risk of flooding to the area behind it. Figure 4.5 shows the components of a typical levee.

**Figure 4.5 – Components of a Typical Levee**



Source: FEMA, What is a Levee Fact Sheet, August 2020

Levees provide strong flood protection, but they are not failsafe. Levees are designed to protect against a specific flood level and could be overtopped during severe weather events. Levees reduce, not eliminate, the risk to individuals and structures behind them. A levee system failure or overtopping can create severe flooding and high-water velocities. It is important to remember that no levee provides protection from

## SECTION 4: RISK ASSESSMENT

events for which it was not designed, and proper operation and maintenance are necessary to reduce the probability of failure.

For both dam and levee failure events, there is generally very little warning time. A failure may result from heavy rains and flash flooding and occur within hours of the first signs of breaching. The duration of the flood will vary but may last as long as a week.

*Warning Time: 4 – Less than 6 hours*

*Duration: 3 – Less than 1 week*

## LOCATION

### DAM FAILURE

The North Carolina Dam Inventory, maintained by North Carolina Department of Environmental Quality, provides a detailed inventory of all dams in the state. As of December 2023, there are 28 dams in the Pamlico Sound Region, of which 18 are rated low hazard and 10 are rated high hazard. Of all 28 dams, 21 are located in Beaufort County, 1 in Carteret County, 4 in Craven County, and 2 in Pamlico County. Figure 4.6 through Figure 4.9 show the location of all dams in the Region by county. Table 4.16 lists all dams with high hazard potential in the Region by county. Dams located in or near specific jurisdictions are shown in their respective jurisdictional annexes.

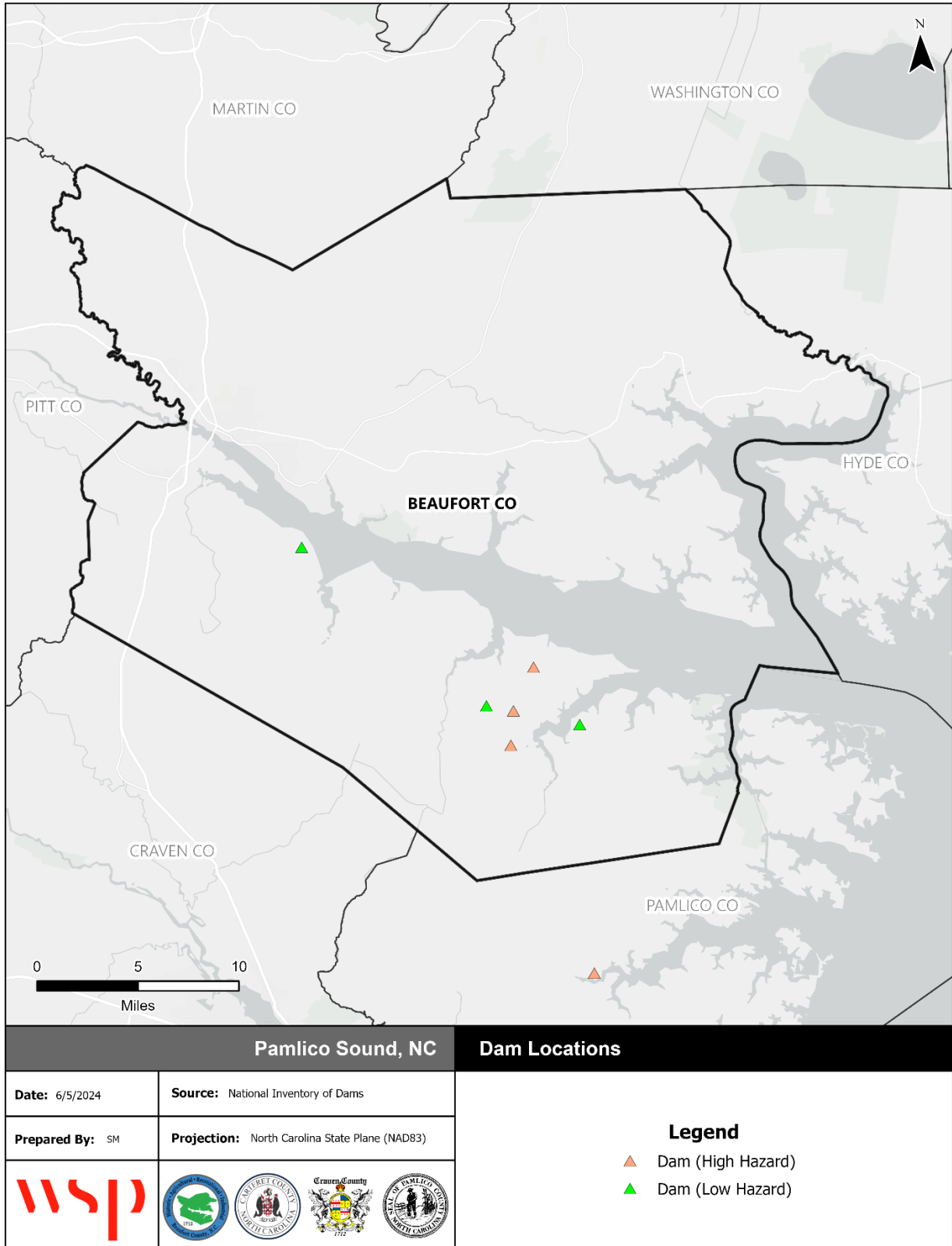
**Table 4.16 - High Hazard Dams in the Pamlico Sound Region**

| Dam Name                            | NID ID  | Condition as of Last Inspection | Max Capacity (Ac-Ft) | Nearest Downstream Location |
|-------------------------------------|---------|---------------------------------|----------------------|-----------------------------|
| <b>Beaufort County</b>              |         |                                 |                      |                             |
| PCS Phosphate R7 Blend Dike         | NC05642 | Fair                            | 40875                | Aurora                      |
| PCS Phosphate #1a Cooling Pond Dike | NC05885 | Fair                            |                      | Aurora                      |
| PCS Phosphate R-9 Blend Dike        | NC06154 | Fair                            |                      | Aurora                      |
| <b>Carteret County</b>              |         |                                 |                      |                             |
| Walker Millpond Dam                 | NC01106 | Fair                            | 806                  | Morehead City               |
| <b>Craven County</b>                |         |                                 |                      |                             |
| Carolina Commons Dam*               | NC05962 | Fair                            |                      | James City                  |
| <b>Pamlico County</b>               |         |                                 |                      |                             |
| Pamlico Regional Wastewater Dike    | NC05367 | Unsatisfactory                  | 6                    | Bayboro                     |

Source: North Carolina Dam Inventory

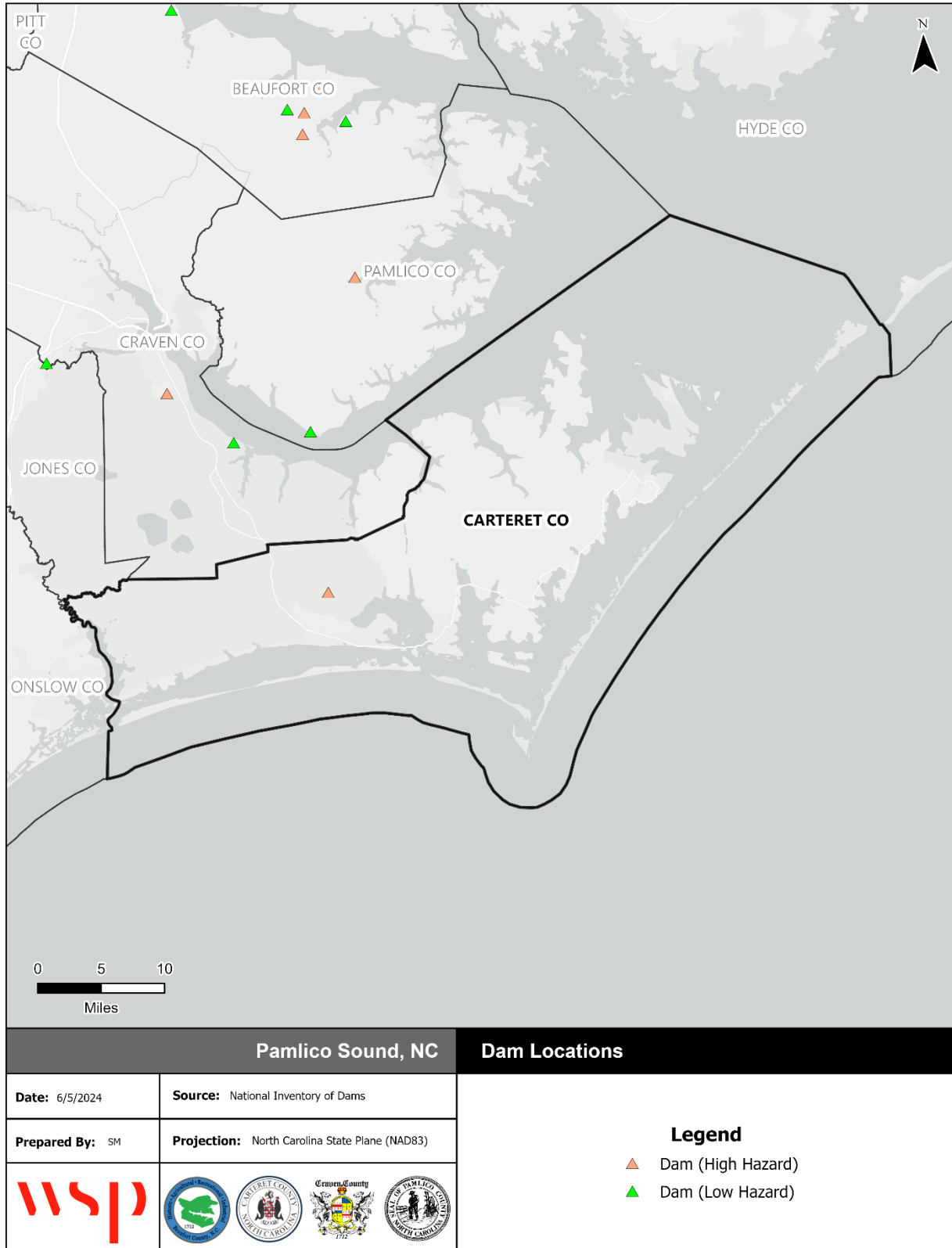
\*The Carolina Commons Dam is located within the jurisdictional limits of New Bern City.

Figure 4.6 - Dam Locations in Beaufort County



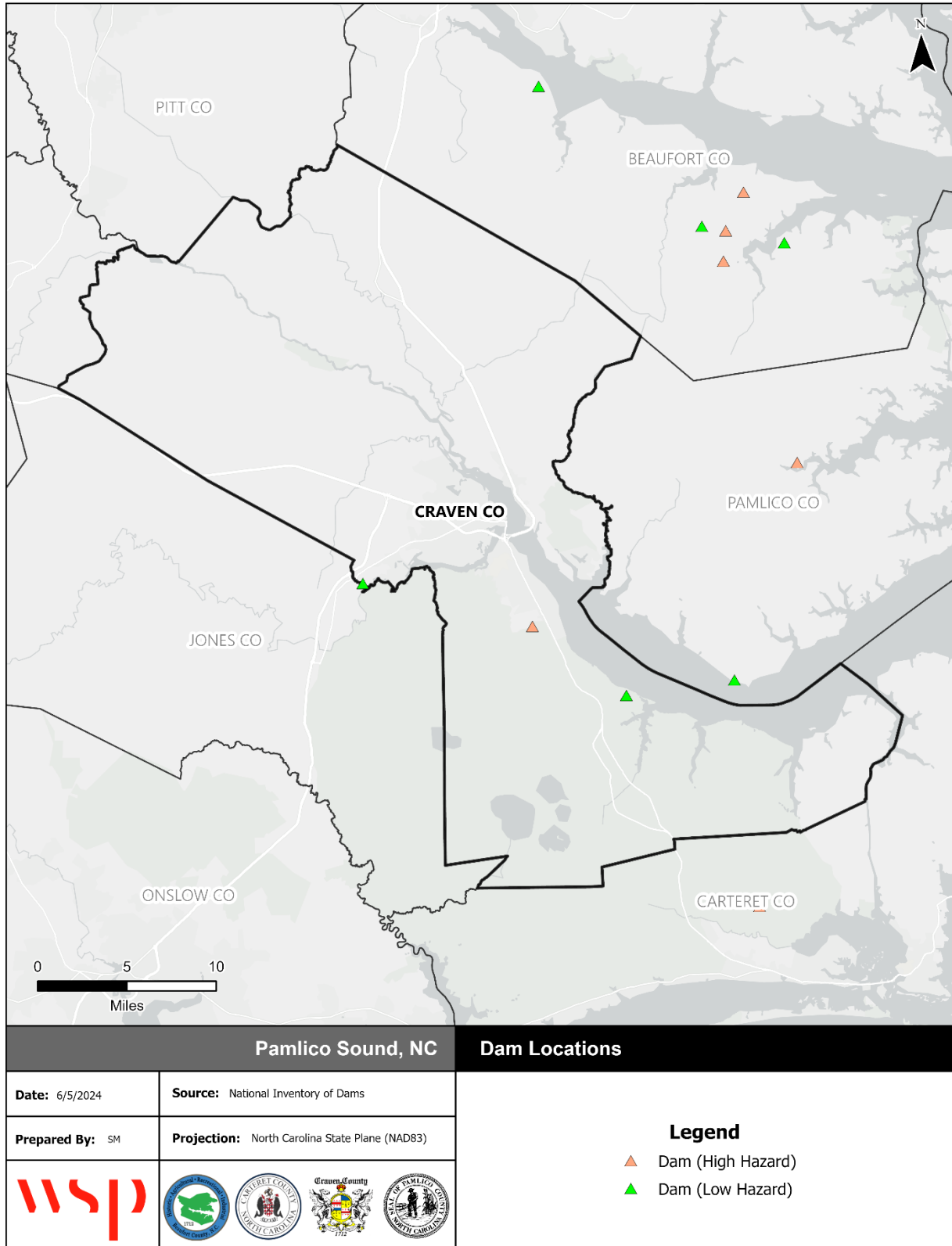
Source: North Carolina Dam Inventory, June 2024

Figure 4.7 - Dam Locations in Carteret County



Source: North Carolina Dam Inventory, June 2024

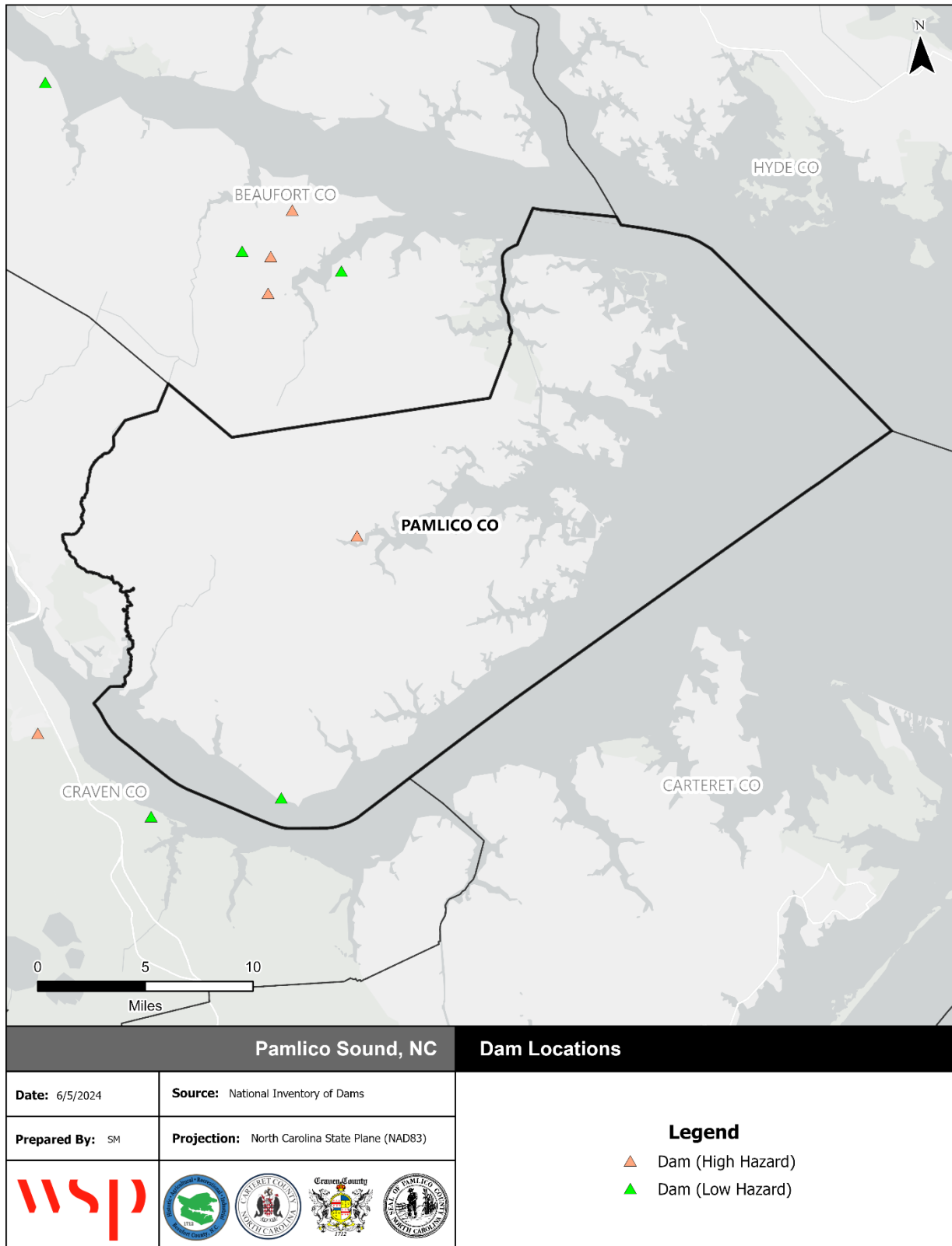
Figure 4.8 - Dam Locations in Craven County



Source: North Carolina Dam Inventory, June 2024



Figure 4.9 - Dam Locations in Pamlico County



Source: North Carolina Dam Inventory, June 2024

## SECTION 4: RISK ASSESSMENT

### LEVEE FAILURE

According to the US Army Corps of Engineers' (USACE) National Levee Database (NLD), there are three recognized levees in the Pamlico Sound Region. These levees are detailed in Table 4.17 and their locations are shown in Figure 4.10. All three levee segments are located in Beaufort County.

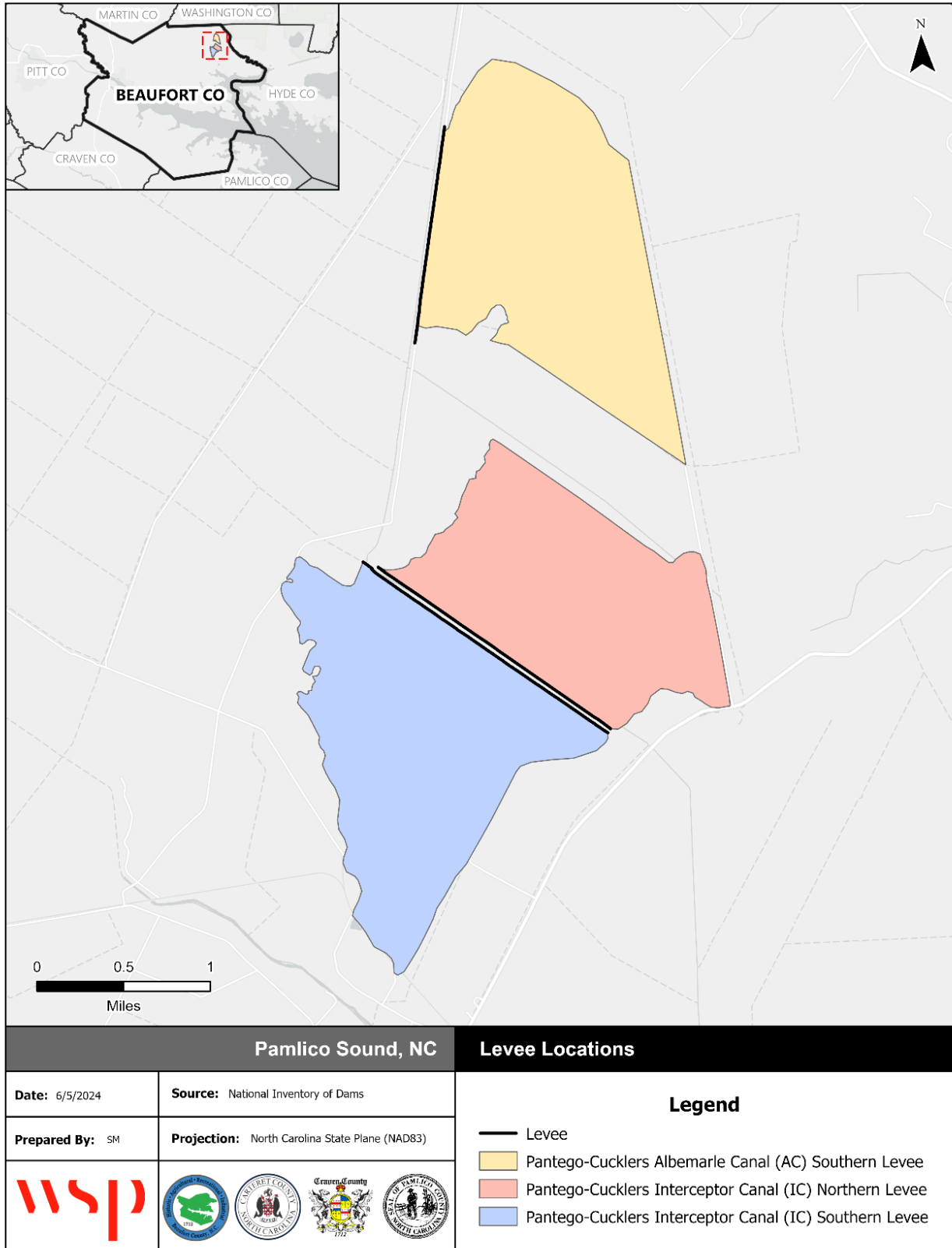
**Table 4.17 - Levees in the Pamlico Sound Region**

| Levee Name  | Year Constructed | Embankment Length (mi) | Levee Safety Action Classification | People at Risk | Structures at Risk | Property Value |
|---|------------------|------------------------|------------------------------------|----------------|--------------------|----------------|
| Pantego-Cuckler Albemarle Canal (AC) Southern Levee   | 1962             | 1.26                   | Low                                | 20             | 11                 | \$4.00M        |
| Pantego-Cuckler Interceptor Canal (IC) Northern Levee | 1962             | 1.63                   | Low                                | 15             | 11                 | \$2.00M        |
| Pantego-Cuckler Interceptor Canal (IC) Southern Levee | 1962             | 1.73                   | Low                                | 15             | 16                 | \$2.00M        |

Source: National Levee Database 2024

*Spatial Extent: 1 – Negligible*

Figure 4.10 - Levee Locations in the Pamlico Sound Region



Source: National Levee Database

## EXTENT

Each state has definitions and methods to determine the hazard potential of a dam. In North Carolina, dams are regulated by the state if they are 25 feet or more in height and impound 50 acre-feet or more. Dams and impoundments smaller than that may fall under state regulation if it is determined that failure of the dam could result in loss of human life or significant damage to property. The height of a dam is from the highest point on the crest of the dam to the lowest point on the downstream toe, and the storage capacity is the volume impounded at the elevation of the highest point on the crest of the dam.

Dam Safety Program engineers determine the "hazard potential" of a dam, meaning the probable damage that would occur if the structure failed, in terms of loss of human life and economic loss or environmental damage. Dams are assigned one of three classes based on the nature of their hazard potential:

- Class A (Low Hazard) includes dams located where failure may damage uninhabited low value non-residential buildings, agricultural land, or low volume roads.
- Class B (Intermediate Hazard) includes dams located where failure may damage highways or secondary railroads, cause interruption of use or service of public utilities, cause minor damage to isolated homes, or cause minor damage to commercial and industrial buildings. Damage to these structures will be considered minor only when they are located in backwater areas not subjected to the direct path of the breach flood wave; and they will experience no more than 1.5 feet of flood rise due to breaching above the lowest ground elevation adjacent to the outside foundation walls or no more than 1.5 feet of flood rise due to breaching above the lowest floor elevation of the structure.
- Class C (High Hazard) includes dams located where failure will likely cause loss of life or serious damage to homes, industrial and commercial buildings, important public utilities, primary highways, or major railroads.

**Table 4.18 – Dam Hazard Classifications**

| Hazard Classification | Description  | Quantitative Guidelines                |
|-----------------------|--|--|
| <b>Low</b>            | Interruption of road service, low volume roads                                     | Less than 25 vehicles per day          |
|                       | Economic damage  | Less than \$30,000                     |
| <b>Intermediate</b>   | Damage to highways, interruption of service  | 25 to less than 250 vehicles per day   |
|                       | Economic damage  | \$30,000 to less than \$200,000        |
|                       | Loss of human life*  | Probable loss of 1 or more human lives |
| <b>High</b>           | Economic damage  | More than \$200,000                    |
|                       | *Probable loss of human life due to breached roadway or bridge on or below the dam | 250 or more vehicles per day           |

Source: NCDENR

Failure of a dam or levee would affect only a negligible area but could cause death and serious property damage within the affected area.

*Impact: 3 – Critical*

## HISTORICAL OCCURRENCES

The National Performance of Dams Program at Stanford University maintains a database of historical dam incidents. Per NPDP records, there are no known historical failures or near-failures at any dams in the Pamlico Sound Region.

## PROBABILITY OF FUTURE OCCURRENCE

Given the limited presence of levees and high hazard dams in the Region and the lack of any prior incidents, it can be concluded that dam or levee failure is unlikely. However, it is possible that with heavy

rain events becoming more frequent and intense, conditions conducive to failures may occur more frequently in the future.

*Probability: 1 – Unlikely*

### CLIMATE CHANGE

Studies have been conducted to investigate the impact of climate change scenarios on dam safety. The safety of dams for the future climate can be based on an evaluation of changes in design floods and the freeboard available to accommodate an increase in flood levels. The results from the studies indicate that the design floods with the corresponding outflow floods and flood water levels will increase in the future, and this increase will affect the safety of the dams in the future. Studies concluded that the total hydrological failure probability of a dam will increase in the future climate and that the extent and depth of flood waters will increase by the future dam break scenario. These changes would likely produce similar impacts on levees.

### VULNERABILITY ASSESSMENT

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#### METHODOLOGIES AND ASSUMPTIONS

Dam inundation areas were not available for the identified dams; therefore, a quantitative vulnerability assessment could not be completed. Vulnerability to dam failure discussed below is based on anecdotal evidence and theoretical understanding of potential risks. Levee failure risk is based on the risk assessment information provided by the USACE's NLD.

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#### PEOPLE

A person's immediate vulnerability to a dam failure is directly associated with the person's distance downstream of the dam as well as proximity to the stream carrying the floodwater from the failure. For dams that have an Emergency Action Plan (EAP), the vulnerability of loss of life for persons in their homes or on their property may be mitigated by following the EAP evacuation procedures; however, the displaced persons may still incur sheltering costs. For persons located on the river (e.g. for recreation) the vulnerability of loss of life is significant.

People are also vulnerable to the loss of the uses of the lake upstream of a dam following failure. Several uses are minor, such as aesthetics or recreational use. However, some lakes serve as drinking water supplies and their loss could disrupt the drinking water supply and present a public health problem.

The NLD estimates that 34 people are at risk to levee failure in the Pamlico Sound Region, all located in Beaufort County.

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#### PROPERTY

Vulnerability of the built environment includes damage to the dam or levee itself and any man-made feature located within the inundation area caused by the failure. Downstream of the dam, vulnerability includes potential damage to homes, personal property, commercial buildings and property, and government owned buildings and property; destruction of bridge or culvert crossings; weakening of bridge supports through scour; and damage or destruction of public or private infrastructure that cross the stream such as water and sewer lines, gas lines and power lines. Water dependent structures on the lake upstream of the dam, such as docks/piers, floating structures or water intake structures, may be damaged by the rapid reduction in water level during the failure.

Similarly, levee failures can result in inundation and damages to buildings, personal property, and infrastructure. If a levee fails or is overtopped, the resulting flooding may be severe, as the levee then acts

**SECTION 4: RISK ASSESSMENT**

as a barrier, preventing drainage of the flood waters. According to NLD, there are 27 buildings at risk in leveed areas, worth an estimated \$5.8 million.

**ENVIRONMENT**

Aquatic species within the lake will either be displaced or destroyed due to dam failure. The velocity of the flood wave will likely destroy riparian and instream vegetation and destroy wetland function. The flood wave will like cause erosion within and adjacent to the stream. Deposition of eroded deposits may choke instream habitat or disrupt riparian areas. Sediments within the lake bottom and any low oxygen water from within the lake will be dispersed, potentially causing fish kills or releasing heavy metals found in the lake sediment layers.

**CONSEQUENCE ANALYSIS**

Table 4.19 summarizes the potential negative consequences of dam and levee failure.

**Table 4.19 – Consequence Analysis – Dam and Levee Failure**

| Category  | Consequences   |
|---|--|
| Public  | Localized impact expected to be severe for inundation area and moderate to light for other adversely affected areas.   |
| Responders  | Localized impact expected to limit damage to personnel in the inundation area at the time of the incident.   |
| Continuity of Operations (including Continued Delivery of Services) | Damage to facilities/personnel in the area of the incident may require temporary relocation of some operations. Localized disruption of roads and/or utilities may postpone delivery of some services. Regulatory waivers may be needed locally. Fulfillment of some contracts may be difficult. Impact may reduce deliveries. |
| Property, Facilities and Infrastructure                             | Localized impact to facilities and infrastructure in the inundation area of the incident. Some severe damage possible.   |
| Environment   | Localized impact expected to be severe for inundation area and moderate to light for other adversely affected areas. Consequences include erosion, water quality degradation, wildlife displacement or destruction, and habitat destruction.   |
| Economic Condition of the Jurisdiction                              | Local economy and finances adversely affected, possibly for an extended period of time, depending on damage and length of investigation.   |
| Public Confidence in the Jurisdiction’s Governance                  | Localized impact expected to primarily adversely affect only the dam owner and local entities.   |

**HAZARD SUMMARY BY JURISDICTION**

The following table summarizes dam and levee failure hazard risk by jurisdiction. Warning time and duration are inherent to the hazard and remain constant across jurisdictions. Spatial extent of any dam failure will be negligible relative to the planning area. Jurisdictions with high hazard dams upstream or within their boundaries were assigned a probability rating of possible and an impact score of critical. Jurisdictions with no high hazard dams were assigned a probability rating of unlikely and an impact rating of limited.

| Jurisdiction    | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|-----------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Beaufort County | 2           | 3      | 1              | 4            | 3        | 2.4   | M        |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction              | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|---------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| City of Washington        | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Aurora            | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Bath              | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Belhaven          | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Chocowinity       | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Pantego           | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Washington Park   | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Carteret County           | 2           | 3      | 1              | 4            | 3        | 2.4   | M        |
| Town of Atlantic Beach    | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Beaufort          | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Bogue             | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Cape Carteret     | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Cedar Point       | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Emerald Isle      | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Indian Beach      | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Morehead City     | 2           | 3      | 1              | 4            | 3        | 2.4   | M        |
| Town of Newport           | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Peletier          | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Pine Knoll Shores | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Craven County             | 2           | 3      | 1              | 4            | 3        | 2.4   | M        |
| City of Havelock          | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| City of New Bern          | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Bridgeton         | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Cove City         | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Dover             | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of River Bend        | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Trent Woods       | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Vanceboro         | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Pamlico County            | 2           | 3      | 1              | 4            | 3        | 2.4   | M        |
| Town of Alliance          | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Arapahoe          | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Bayboro           | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Grantsboro        | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Mesic             | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Minnesott Beach   | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Oriental          | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Stonewall         | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |
| Town of Vandemere         | 1           | 2      | 1              | 4            | 3        | 1.8   | L        |

## 4.5.2 DROUGHT

### HAZARD BACKGROUND

Drought is a condition of climatic dryness that is severe enough to reduce soil moisture and water below the minimum necessary for sustaining plant, animal, and human life systems. Influencing factors include temperature patterns, precipitation patterns, agricultural and domestic water-supply needs, and growth. Lack of annual precipitation and poor water conservation practices can result in drought conditions.

Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Most natural disasters, such as floods or wildland fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts occur slowly, over a multi-year period, and can take years before the consequences are realized. It is often not obvious or easy to quantify when a drought begins and ends. Droughts can be a short-term event over several months or a long-term event that lasts for years or even decades.

Drought is a complex issue involving many factors—it occurs when a normal amount of moisture is not available to satisfy an area’s usual water-consuming activities. Drought can often be defined regionally based on its effects and common drought types are detailed below:

- **Meteorological drought** is usually defined by a period of below average water supply.
- **Agricultural drought** occurs when there is an inadequate water supply to meet the needs of the State’s crops and other agricultural operations such as livestock.
- **Hydrological drought** is defined as deficiencies in surface and subsurface water supplies. It is generally measured as streamflow, snowpack, and as lake, reservoir, and groundwater levels.
- **Socioeconomic drought** occurs when a drought impacts health, well-being, and quality of life or when a drought starts to have an adverse economic impact on a region.

Drought impacts are wide-reaching and may be economic, environmental, and/or societal. The most significant impacts associated with drought in the Pamlico Sound Region are those related to water intensive activities such as agriculture, wildland fire protection, municipal usage, commerce, tourism, recreation, and wildlife preservation. Drought conditions can also cause soil to compact, increasing an area’s susceptibility to flooding, and reduce vegetation cover, which exposes soil to wind and erosion. A reduction to electric power generation and water quality deterioration are also potential problems.

The U.S. Drought Monitor provides a summary of drought conditions across the United States and Puerto Rico. Often described as a blend of art and science, the Drought Monitor map is updated weekly by combining a variety of data-based drought indices and indicators and local expert input into a single composite drought indicator.

The **Palmer Drought Severity Index (PDSI)** devised in 1965, was the first drought indicator to assess moisture status comprehensively. It uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered most effective for unirrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief. It is more complex than the Standardized Precipitation Index (SPI) and the Drought Monitor.

The **Standardized Precipitation Index (SPI)** is a way of measuring drought that is different from the Palmer Drought Severity Index (PDSI). Like the PDSI, this index is negative for drought, and positive for wet conditions. But the SPI is a probability index that considers only precipitation, while Palmer’s indices are water balance indices that consider water supply (precipitation), demand (evapotranspiration) and loss (runoff).

Describe local conditions pertaining to this hazard. Include descriptions of geographic boundaries, recognized districts, localized areas of concern, etc.



The State of North Carolina has a Drought Assessment and Response Plan as an Annex to its Emergency Operations Plan. This plan provides the framework to coordinate statewide response to a drought incident.

*Warning Time: 1 – More than 24 hours*

*Duration: 4 – More than one week*

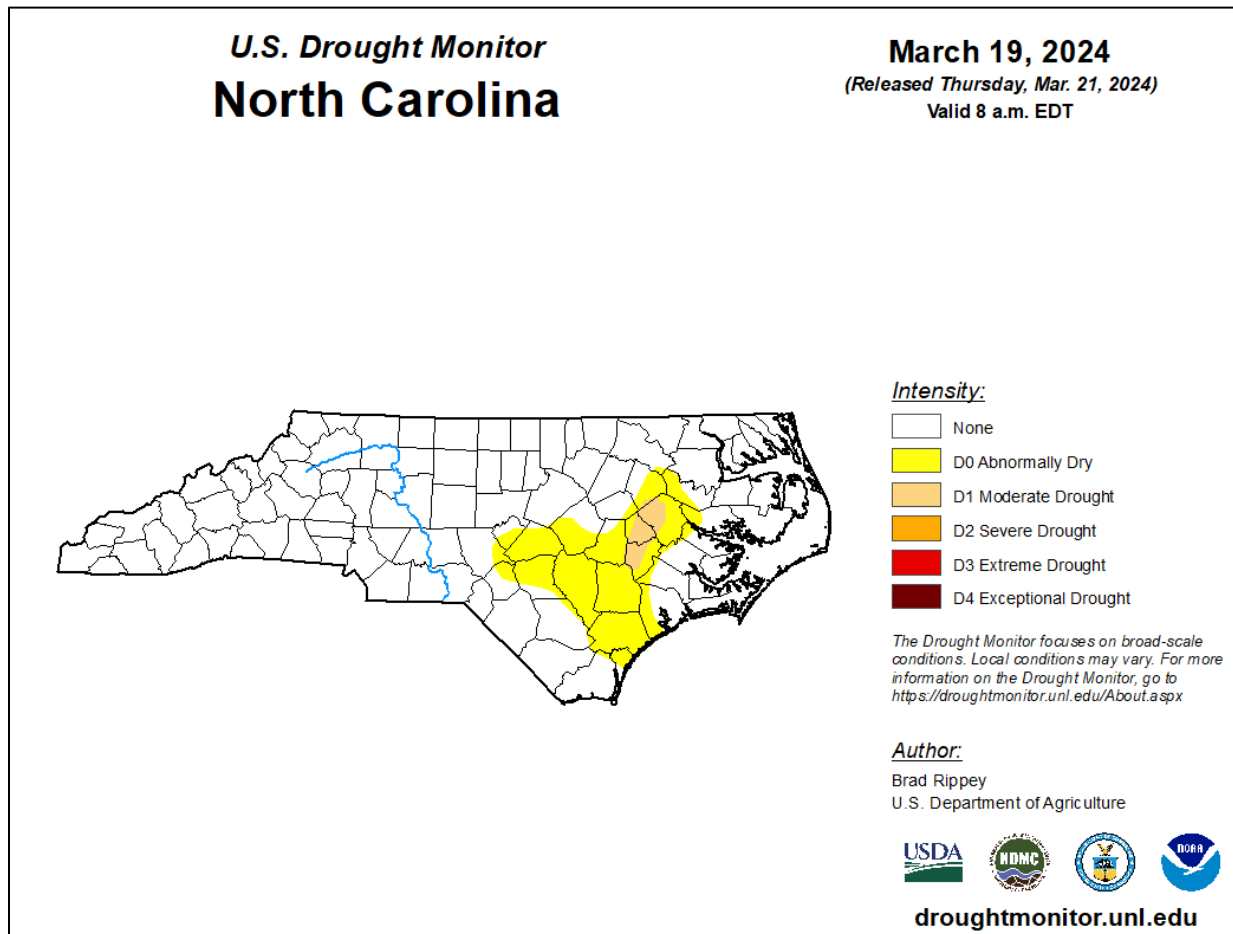
**LOCATION**

Drought poses a regional threat that can encompass an entire planning area, and in certain instances, even an entire state. The National Weather Service views drought and extreme heat as a phenomenon affecting broad forecast “zones”, making it uncommon to pinpoint locations within planning areas that are more vulnerable to these hazards than others. Historically, the Eastern United States has experienced fewer significant long-term droughts compared to the Central and Western regions of the county.

The figure below illustrates the U.S. Drought Monitor’s drought ratings for North Carolina as of March 19, 2024, indicating that as of that date, the Pamlico Sound Region is experiencing none to abnormally dry areas in parts of the Region.

*Spatial Extent: 4 – Large*

**Figure 4.11 – U.S. Drought Monitor for Week of March 19, 2024**



Source: U.S. Drought Monitor

**EXTENT**

The most significant impacts with drought in the Pamlico Sound Region are those related to water intensive activities such as agriculture, wildfire protection, municipal usage, commerce, tourism, recreation, and wildlife preservation. Drought conditions can cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding.

Drought extent can be defined in terms of intensity, using the U.S. Drought Monitor scale. The Drought Monitor Scale measures drought episodes with input from the Palmer Drought Severity Index, the Standardized Precipitation Index, the Keetch-Byram Drought Index, soil moisture indicators, and other inputs as well as information on how drought is affecting people. Figure 4.12 details the classifications used by the U.S. Drought Monitor. A category of D2 (severe) or higher on the U.S. Drought Monitor Scale can typically result in crop or pasture losses, water shortages, and the need to institute water restrictions.

**Figure 4.12 – U.S. Drought Monitor Classifications**

| Category | Description         | Possible Impacts  | Ranges                               |                                       |                                      |  |  |
|----------|---------------------|---|--------------------------------------|---------------------------------------|--------------------------------------|--|--|
|          |                     |   | Palmer Drought Severity Index (PDSI) | CPC Soil Moisture Model (Percentiles) | USGS Weekly Streamflow (Percentiles) | Standardized Precipitation Index (SPI) | Objective Drought Indicator Blends (Percentiles) |
| D0       | Abnormally Dry      | <ul style="list-style-type: none"> <li>Going into drought:                             <ul style="list-style-type: none"> <li>short-term dryness slowing planting, growth of crops or pastures</li> </ul> </li> <li>Coming out of drought:                             <ul style="list-style-type: none"> <li>some lingering water deficits</li> <li>pastures or crops not fully recovered</li> </ul> </li> </ul> | -1.0 to -1.9                         | 21 to 30                              | 21 to 30                             | -0.5 to -0.7                           | 21 to 30   |
| D1       | Moderate Drought    | <ul style="list-style-type: none"> <li>Some damage to crops, pastures</li> <li>Streams, reservoirs, or wells low, some water shortages developing or imminent</li> <li>Voluntary water-use restrictions requested</li> </ul>  | -2.0 to -2.9                         | 11 to 20                              | 11 to 20                             | -0.8 to -1.2                           | 11 to 20   |
| D2       | Severe Drought      | <ul style="list-style-type: none"> <li>Crop or pasture losses likely</li> <li>Water shortages common</li> <li>Water restrictions imposed</li> </ul>   | -3.0 to -3.9                         | 6 to 10                               | 6 to 10                              | -1.3 to -1.5                           | 6 to 10  |
| D3       | Extreme Drought     | <ul style="list-style-type: none"> <li>Major crop/pasture losses</li> <li>Widespread water shortages or restrictions</li> </ul>   | -4.0 to -4.9                         | 3 to 5                                | 3 to 5                               | -1.6 to -1.9                           | 3 to 5   |
| D4       | Exceptional Drought | <ul style="list-style-type: none"> <li>Exceptional and widespread crop/pasture losses</li> <li>Shortages of water in reservoirs, streams, and wells creating water emergencies</li> </ul>   | -5.0 or less                         | 0 to 2                                | 0 to 2                               | -2.0 or less                           | 0 to 2   |

Source: US Drought Monitor

Pamlico Sound Region faced its most severe drought in the last two decades between March 2007 and May 2008. During this period, all four counties endured 51 consecutive weeks of drought conditions, with Carteret and Pamlico Counties experiencing severe drought and Beaufort and Craven Counties facing extreme drought.

*Impact: 1 – Minor*

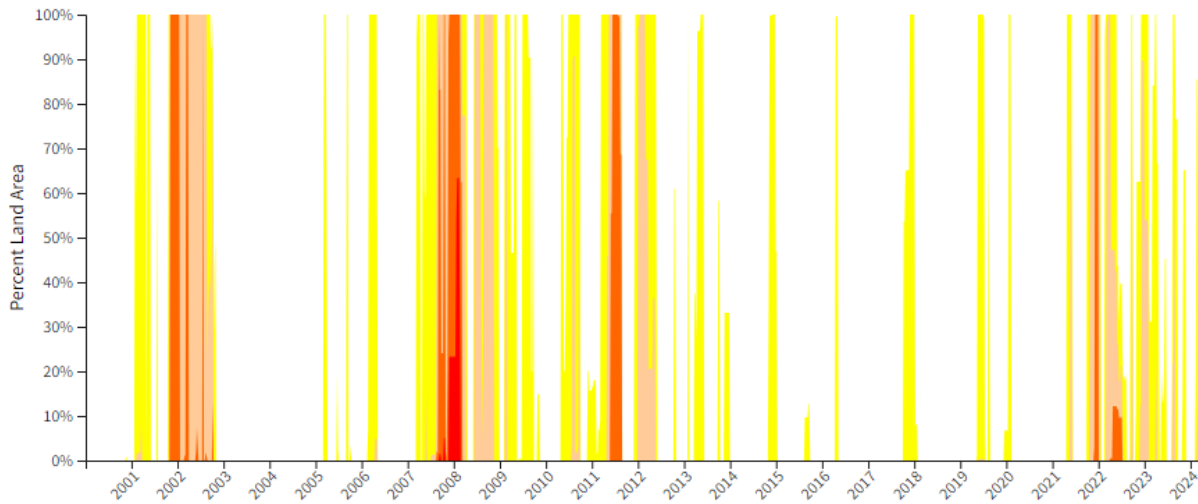
**HISTORICAL OCCURRENCES**

Figure 4.13 through Figure 4.16 show historical periods where each county was considered in some level of drought condition. The key color in Figure 4.12 indicates the intensity of the drought.

**BEAUFORT COUNTY**

Between 2000 and 2024, Beaufort County was in some level of drought 37.9% of the time. The County recorded nearly 17 weeks in “extreme drought”.

**Figure 4.13 - US Drought Monitor Historical Trends - Beaufort County 2000-2024**



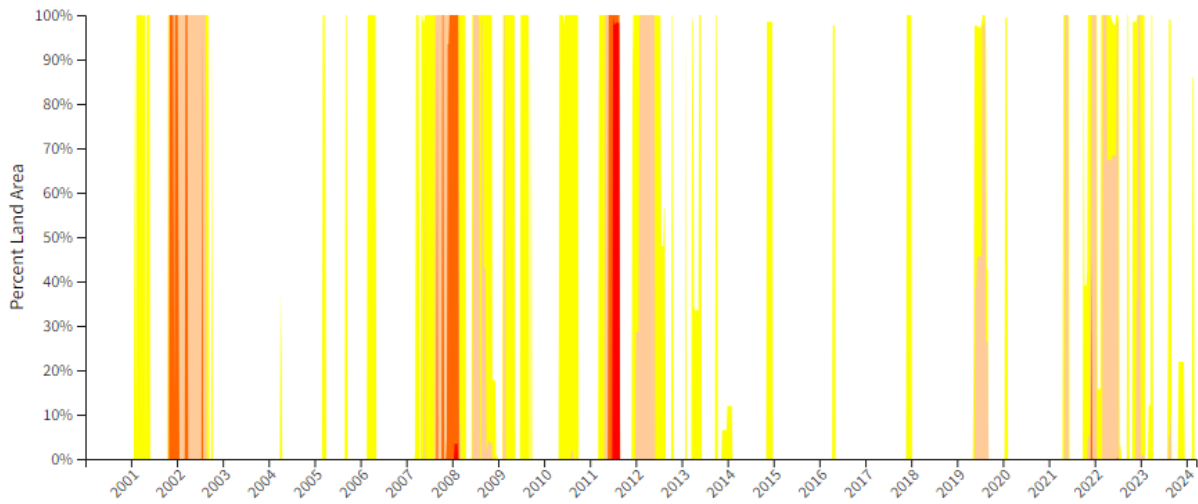
Source: U.S. Drought Monitor

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**CARTERET COUNTY**

Between 2000 and 2024, Carteret County was in some level of drought 33.8% of the time. The County recorded nearly 12 weeks in “extreme drought”.

**Figure 4.14 - US Drought Monitor Historical Trends - Carteret County 2000-2024**



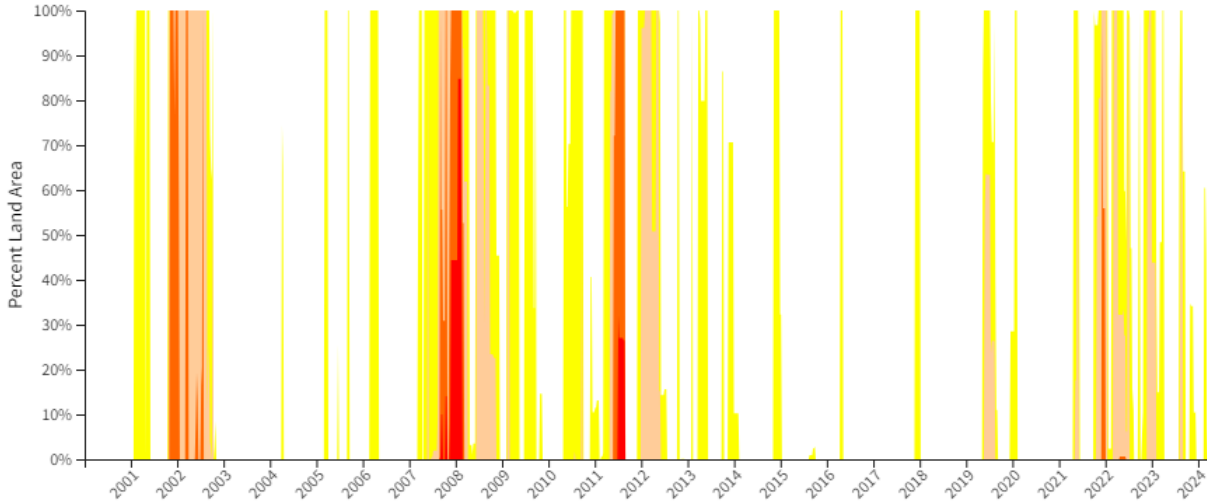
Source: U.S. Drought Monitor

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**CRAVEN COUNTY**

Between 2000 and 2024, Craven County was in some level of drought 38.21% of the time. The County recorded 27 weeks in “extreme” drought during this timeframe.

**Figure 4.15 - US Drought Monitor Historical Trends - Craven County 2000-2024**

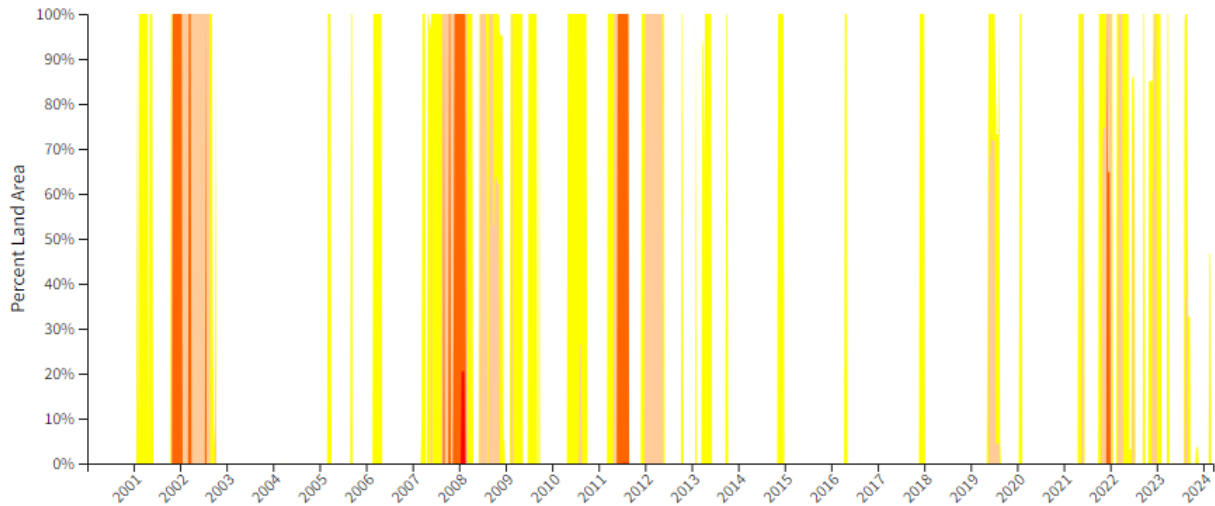


Source: U.S. Drought Monitor

**PAMLICO COUNTY**

Between 2000 and 2024, Pamlico County was in some level of drought 31.1% of the time. The County recorded 12 weeks in “extreme” drought.

**Figure 4.16 - US Drought Monitor Historical Trends - Pamlico County 2000-2024**



Source: U.S. Drought Monitor

The National Drought Mitigation Center (NDMC), located at the University of Nebraska in Lincoln, provides a clearinghouse for information on the effects of drought, based on reports from media, observers, impact records, and other sources.

According to the NDMC’s Drought Impact Reporter, during the 10-year period from January 2013 through March 2024, there was a total of 33 impacts to the Region. Table 4.20 summarizes the impacts

reported by category and the years impacts were reported for each category. Note that the Drought Impact Reporter assigns multiple categories to each impact.

**Table 4.20 – Drought Impacts Reported for Pamlico Sound Region Counties, Jan. 2014 - Mar. 2024**

| Category                        | Impacts | Years Reported               |
|---------------------------------|---------|------------------------------|
| Agriculture                     | 18      | 2019, 2016, 2015, 2014       |
| Business & Industry             | 1       | 2018                         |
| Fire                            | 10      | 2021, 2019                   |
| Plants & Wildlife               | 13      | 2018, 2017, 2016, 2015, 2014 |
| Relief, Response & Restrictions | 12      | 2021, 2020, 2019             |
| Society & Public Health         | 1       | 2014                         |
| Tourism & Recreation            | 1       | 2018                         |
| Water Supply & Quality          | 5       | 2020, 2018, 2017, 2016, 2015 |

Source: Drought Impact Reporter, <http://droughtreporter.unl.edu>

### PROBABILITY OF FUTURE OCCURRENCE

U.S. Drought Monitor records drought intensity weekly throughout the country. The North Carolina Department of Environmental Quality (NCDEQ) Division of Water Resources maintains records of Drought Monitor data for the state as far back as January 2000. The Region spent an average of 445 weeks in some level of drought condition. Table 4.21 presents the number of weeks that each county in the Pamlico Sound Region spent in drought conditions ranging from abnormally dry (D0) to extreme drought (D3) from 2000 to 2024.

**Table 4.21 – Historical weeks in Drought by County, 2000-2024**

| County   | Weeks in Any Drought | Percent of Time Drought |
|----------|----------------------|-------------------------|
| Beaufort | 480                  | 37.9%                   |
| Carteret | 427                  | 33.8%                   |
| Craven   | 483                  | 38.2%                   |
| Pamlico  | 392                  | 31.0%                   |

Source: US Drought Monitor

*Probability: 3 – Likely*

### CLIMATE CHANGE

The United States Geological Survey (USGS) reports that climate change has already altered the natural pattern of droughts across the country. Climate change has made droughts longer, more frequent, and more severe. With heavy precipitation events becoming more common but total rainfall remaining relatively steady, its anticipated that the average number of dry days will likely rise. As temperatures are projected to continue rising, evaporation rates are expected to increase, resulting in decreased soil moisture levels. These combined factors indicate a probable increase in both intensity and duration of droughts in the Southeast.

The Fifth National Climate Assessment reiterates these projections and presents additional patterns in the Southeast that exacerbate climate risk and impacts, including population growth, high proportion of the population with health issues or underlying health conditions, and a large, climate-dependent agricultural sector.<sup>1</sup>

<sup>1</sup> <https://nca2023.globalchange.gov/chapter/22/>

## VULNERABILITY ASSESSMENT

### METHODOLOGIES AND ASSUMPTIONS

Vulnerability to drought in the Pamlico Sound Region is determined by historical drought occurrences within the planning area and broad apprehensions regarding potential drought impacts. Agricultural vulnerability was estimated using data from the US Department of Agriculture Risk Management Agency and a review of past claims related to drought.

### PEOPLE

Drought is often accompanied by prolonged periods of extreme heat, negative health impacts such as dehydration can also occur, where children and elderly are most susceptible. Drought can also contribute to health issues by compromising water quality due to decreased water levels. Additionally, when coupled with extreme heat, droughts can lead to an increase in heat-related illnesses such as heat-stroke, potentially resulting in loss of life.

The historical and potential impacts of drought on populations include agricultural sector job loss, secondary economic losses to local businesses and public recreational resources, increased cost to local and state government for large-scale water acquisitions and delivery, water rationing, and water wells running dry for individuals and families.

### PROPERTY

Droughts can disrupt soil cycles, leading to soil shrinking and swelling, potentially causing cracks in foundations and damaging infrastructure. It can also profoundly impact landscapes, posing financial burdens on property owners. Drought is unlikely to cause damages to the built environment. However, in areas with shrinking and expansive soils, drought may lead to structural damages.

Drought may cause severe property loss for agricultural industry in terms of crop and livestock losses. The USDA's Risk Management Agency (RMA) maintains a database of all paid crop insurance claims. Between 2007-2023, the sum of claims paid for crop damage as a result of drought in the Pamlico Sound Region was \$57,600,356 or an average of \$3,388,256 in losses per year. Table 4.22 through Table 4.25 summarize the crop losses due to drought reported in the RMA system by county.

**Table 4.22 – Crop Losses Resulting from Drought, Beaufort County, 2007-2023**

| Year | Determined Acres | Indemnity Amount |
|------|------------------|------------------|
| 2007 | 16,085.08        | \$2,223,329.00   |
| 2008 | 46,472.70        | \$8,341,607.00   |
| 2009 | 1,796.05         | \$180,435.00     |
| 2010 | 19,975.13        | \$2,455,019.00   |
| 2011 | 60,206.47        | \$16,639,325.00  |
| 2012 | 928.74           | \$49,998.00      |
| 2014 | 16.00            | \$537.00         |
| 2015 | 2,440.90         | \$366,595.93     |
| 2016 | 186.83           | \$19,560.80      |
| 2017 | 814.34           | \$75,883.00      |
| 2019 | 19,292.02        | \$2,547,700.43   |
| 2020 | 2,681.95         | \$284,914.50     |
| 2022 | 13,591.45        | \$2,630,205.12   |
| 2023 | 14,070.41        | \$2,243,485.00   |

**SECTION 4: RISK ASSESSMENT**

| <b>Year</b>  | <b>Determined Acres</b> | <b>Indemnity Amount</b> |
|--------------|-------------------------|-------------------------|
| <b>Total</b> | <b>148,922.25</b>       | <b>\$30,352,289.73</b>  |

Source: USDA Risk Management Agency

**Table 4.23 – Crop Losses Resulting from Drought, Carteret County, 2007-2023**

| <b>Year</b>  | <b>Determined Acres</b> | <b>Indemnity Amount</b> |
|--------------|-------------------------|-------------------------|
| 2007         | 2,498.90                | \$105,756.00            |
| 2008         | 6,133.44                | \$871,361.00            |
| 2009         | 824.97                  | \$97,609.00             |
| 2010         | 5,778.25                | \$498,181.00            |
| 2011         | 4,081.22                | \$1,761,233.00          |
| 2012         | 12.77                   | \$2,476.00              |
| 2015         | 844.74                  | \$91,755.50             |
| 2017         | 262.58                  | \$28,110.75             |
| 2019         | 3,705.39                | \$589,452.05            |
| 2020         | 5,628.95                | \$621,012.00            |
| 2022         | 2,187.07                | \$338,743.30            |
| 2023         | 6,932.73                | \$711,223.75            |
| <b>Total</b> | <b>38,891.03</b>        | <b>\$5,716,913.35</b>   |

Source: USDA Risk Management Agency

**Table 4.24 – Crop Losses Resulting from Drought, Craven County, 2007-2023**

| <b>Year</b>  | <b>Determined Acres</b> | <b>Indemnity Amount</b> |
|--------------|-------------------------|-------------------------|
| 2007         | 12,584.83               | \$1,355,027.00          |
| 2008         | 14,427.81               | \$2,735,837.00          |
| 2009         | 2,490.20                | \$332,621.00            |
| 2010         | 10,704.85               | \$1,359,443.00          |
| 2011         | 12,185.40               | \$2,898,439.00          |
| 2012         | 481.27                  | \$54,439.00             |
| 2013         | 138.11                  | \$14,707.00             |
| 2014         | 347.70                  | \$47,402.00             |
| 2015         | 4,759.00                | \$595,145.64            |
| 2016         | 1,193.44                | \$395,114.80            |
| 2017         | 1,116.69                | \$88,045.25             |
| 2018         | 254.8                   | \$35,155.00             |
| 2019         | 14298.17                | \$2,311,430.17          |
| 2020         | 2051.81                 | \$215,887.30            |
| 2022         | 10674.47                | \$3,303,715.00          |
| 2023         | 7712.52                 | \$1,984,723.75          |
| <b>Total</b> | <b>95,421.07</b>        | <b>\$17,727,131.91</b>  |

Source: USDA Risk Management Agency

**Table 4.25 – Crop Losses Resulting from Drought, Pamlico County, 2007-2023**

| <b>Year</b> | <b>Determined Acres</b> | <b>Indemnity Amount</b> |
|-------------|-------------------------|-------------------------|
| 2007        | 1,262.14                | \$173,240.00            |
| 2008        | 1,803.56                | \$398,296.00            |
| 2009        | 1,635.05                | \$283,415.00            |
| 2010        | 1,362.61                | \$193,177.00            |
| 2011        | 6,914.71                | \$1,698,610.00          |
| 2012        | 56.70                   | \$10,301.00             |

**SECTION 4: RISK ASSESSMENT**

| <b>Year</b>  | <b>Determined Acres</b> | <b>Indemnity Amount</b> |
|--------------|-------------------------|-------------------------|
| 2014         | 640.40                  | \$72,968.00             |
| 2015         | 794.42                  | \$108,368.00            |
| 2017         | 18.46                   | \$18,094.40             |
| 2019         | 3,210.33                | \$340,506.85            |
| 2020         | 894                     | \$1,594.50              |
| 2022         | 2,134.45                | \$295,100.81            |
| 2023         | 1,304.45                | \$210,350.40            |
| <b>Total</b> | <b>22,031.28</b>        | <b>\$3,804,021.96</b>   |

Source: USDA Risk Management Agency

**ENVIRONMENT**

Environmental losses from drought are associated with damage to plants, animals, wildfire, and air and water quality, forest and range fires, landscape degradation, biodiversity loss, and soil erosion. While some impacts are transient, resolving once the drought subsides, others endure or may become irreversible. For instance, wildlife habitats may suffer from the loss of wetlands, lakes, and vegetation, yet many species can eventually rebound. Landscape degradation and heightened soil erosion may lead to lasting declines in biological productivity. Despite the challenges in quantifying environmental losses, heightened public awareness and concern for environmental well-being have prompted public officials to allocate greater attention and resources to mitigate these effects. Moreover, if climate change forecasts of prolonged drought followed by intense rainfall events hold true, the risk of flash flooding also escalates under such conditions.

Specific to the Pamlico Sound Region, the National Drought Mitigation Center listed impacts in the Region including water conservation, increased fire risk, and wildlife and agriculture life cycle impacts occurring.

**CONSEQUENCE ANALYSIS**

Table 4.26 summarizes the potential negative consequences of drought.

**Table 4.26 – Consequence Analysis – Drought**

| <b>Category</b>   | <b>Consequences</b>   |
|---|---|
| Public  | The public can be impacted through health effects due to economic losses, conflicts arising from water shortages, decreased incomes, limited recreational opportunities, increased occurrences of heat stroke and even fatalities.  |
| Responders  | Responders are likely to be significantly impacted from drought. However, the exceptional drought conditions might affect the availability of water for immediate response to wildfires.  |
| Continuity of Operations (including Continued Delivery of Services) | The continuity of operations would experience minimal disruption from drought, given the ample warning time available to implement plans for maintaining operational continuity.  |
| Property, Facilities and Infrastructure                             | Drought has the capacity to impact water supply across residential, commercial, institutional, industrial, and government-owned areas, potentially leading to reduced levels in wells and reservoirs. As a result, utilities may find it necessary to raise rates to cope with the decreased availability of water. |



**SECTION 4: RISK ASSESSMENT**

| Category   | Consequences  |
|--|---|
| Environment  | Environmental impacts include strain on local plant and wildlife; increased probability of erosion and wildfire.  |
| Economic Condition of the Jurisdiction             | Farmers could encounter crop losses or heightened expenses related to livestock. Additionally, business reliant on agriculture may suffer secondary effects. The severity of drought could extend its impact to local enterprises in landscaping, recreation, and tourism, as well as public utilities. |
| Public Confidence in the Jurisdiction’s Governance | In cases of prolonged drought without relief, local, or state governments frequently need to implement water restrictions, potentially affecting public confidence.   |

**HAZARD SUMMARY BY JURISDICTION**

The following table summarizes drought hazard risk by jurisdiction. Warning time, duration and spatial extent are inherent to the hazard and remain constant across jurisdictions. The majority of damages that result from drought are to crops and other agriculture-related activities as well as water-dependent recreation industries. The magnitude of the impacts is typically greater in unincorporated areas; impacts are likely higher in Beaufort County, which has also experienced the most crop losses due to drought. In developed areas, the magnitude of drought is less severe, with lawns and local gardens affected and potential impacts on local water supplies during severe, prolonged drought.

| Jurisdiction              | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|---------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Beaufort County           | 3           | 2      | 4              | 1            | 4        | 2.8   | M        |
| City of Washington        | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Aurora            | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Bath              | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Belhaven          | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Chocowinity       | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Pantego           | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Washington Park   | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Carteret County           | 3           | 2      | 4              | 1            | 4        | 2.8   | M        |
| Town of Atlantic Beach    | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Beaufort          | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Bogue             | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Cape Carteret     | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Cedar Point       | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Emerald Isle      | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Indian Beach      | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Morehead City     | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Newport           | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Peletier          | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Pine Knoll Shores | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Craven County             | 3           | 2      | 4              | 1            | 4        | 2.8   | M        |
| City of Havelock          | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| City of New Bern          | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Bridgeton         | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |
| Town of Cove City         | 3           | 1      | 4              | 1            | 4        | 2.5   | M        |

**SECTION 4: RISK ASSESSMENT**

| <b>Jurisdiction</b>     | <b>Probability</b> | <b>Impact</b> | <b>Spatial Extent</b> | <b>Warning Time</b> | <b>Duration</b> | <b>Score</b> | <b>Priority</b> |
|-------------------------|--------------------|---------------|-----------------------|---------------------|-----------------|--------------|-----------------|
| Town of Dover           | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of River Bend      | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Trent Woods     | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Vanceboro       | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Pamlico County          | 3                  | 2             | 4                     | 1                   | 4               | 2.8          | M               |
| Town of Alliance        | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Arapahoe        | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Bayboro         | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Grantsboro      | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Mesic           | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Minnesott Beach | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Oriental        | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Stonewall       | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |
| Town of Vandemere       | 3                  | 1             | 4                     | 1                   | 4               | 2.5          | M               |

### 4.5.3 EARTHQUAKE

#### HAZARD BACKGROUND

An earthquake is the vibration of the earth's surface following a release of energy in the earth's crust. This energy can be generated by a volcanic eruption or by the sudden dislocation of the crust, which is the cause of most destructive earthquakes. The crust may first bend and then, when the stress exceeds the strength of the rocks, break and snap to a new position. In the process of breaking, vibrations called "seismic waves" are generated. These waves travel outward from the source of the earthquake at varying speeds.

Earthquakes can last from a few seconds to over five minutes; they may also occur as a series of tremors over several days. The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Casualties generally result from falling objects and debris. Disruption of communications, electrical power supplies and gas, sewer, and water lines should be expected. Earthquakes may trigger fires, dam failures, landslides, uneven ground settling, flooding, and releases of hazardous material, resulting in damage to homes, buildings, power and telephone infrastructure, roads, tunnels, and railways, further compounding their disastrous effects.

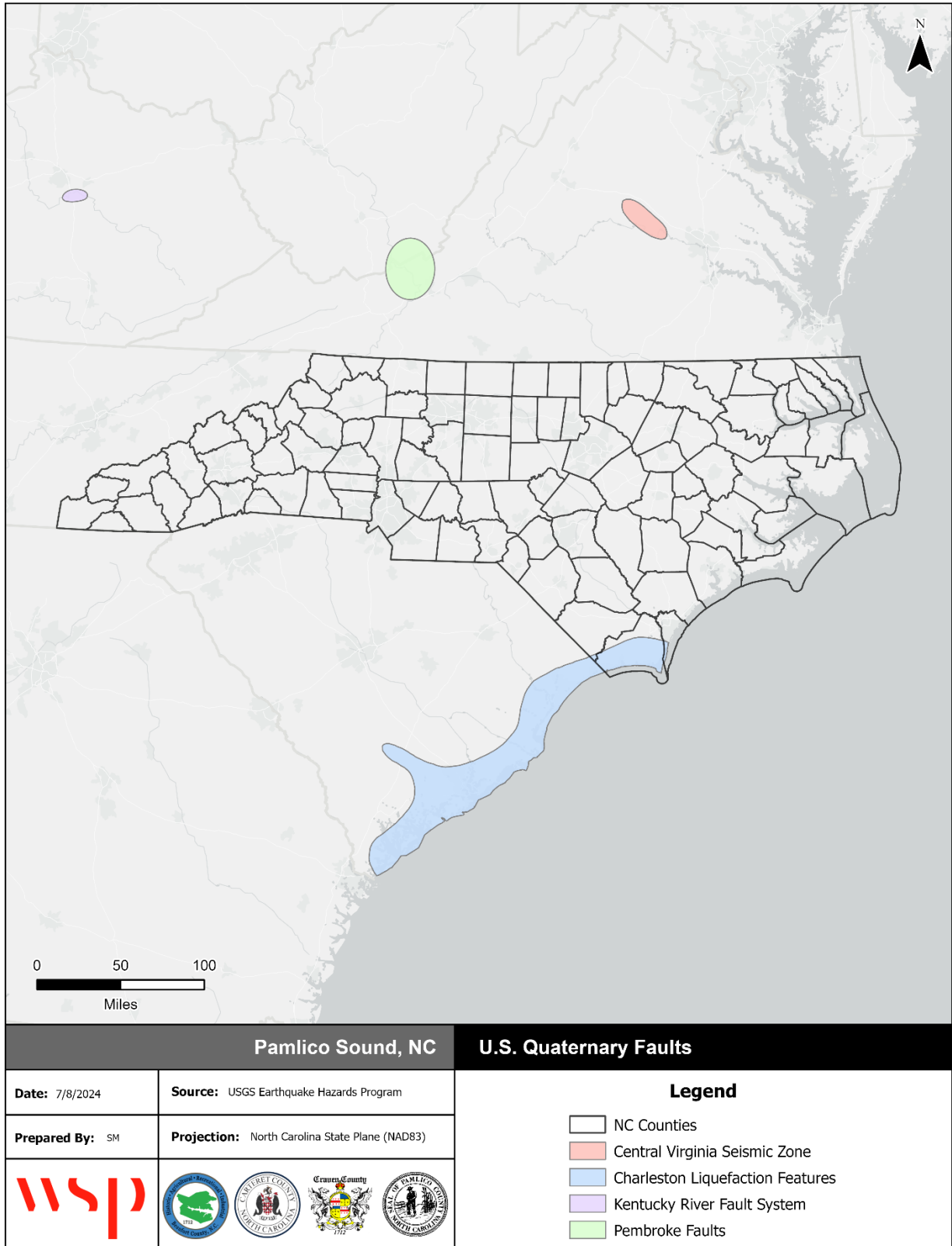
*Warning Time: 4 – Less than 6 hours*

*Duration: 1 – Less than 6 hours*

#### LOCATION

Figure 4.17 reflects the Quaternary faults that present an earthquake hazard for the Pamlico Sound Region based on data from the USGS Earthquake Hazards Program.

Figure 4.17 - U.S. Quaternary Faults



Source: USGS Earthquake Hazards Program

All of North Carolina is subject to earthquakes to varying degrees, with the western and southern region most vulnerable to a damaging earthquake. The state is affected by both the Charleston Fault in South Carolina and New Madrid Fault in Tennessee. Both of these faults have generated earthquakes measuring greater than 8.0 on the Richter Scale during the last 200 years. In addition, there are several smaller fault lines in eastern Tennessee and throughout North Carolina that could produce less severe shaking.

*Spatial Extent: 4 – Large*

**EXTENT**

Earthquakes are typically classified in one of two ways: by the amount of energy released, measured as magnitude; or by the impact on people and structures, measure by intensity. Magnitude is measured using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude. A detailed description of the Richter Scale is given in Table 4.27. Although the Richter scale is usually used by the news media when reporting the intensity of earthquakes and is the scale most familiar to the public, the scale currently used by the scientific community in the United States is called the Modified Mercalli Intensity (MMI) scale. The MMI scale is an arbitrary ranking based on observed effects.

Table 4.28 shows descriptions for levels of earthquake intensity on the MMI scale. Seismic shaking is typically the greatest cause of losses to structures during earthquakes.

*Impact: 1 – Minor*

**Table 4.27 – Richter Scale**

| <b>Magnitude</b>      | <b>Effects</b>   |
|-----------------------|--|
| <b>Less than 3.5</b>  | Generally not felt, but recorded.  |
| <b>3.5 – 5.4</b>      | Often felt, but rarely causes damage.  |
| <b>5.4 – 6.0</b>      | At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions. |
| <b>6.1 – 6.9</b>      | Can be destructive in areas up to 100 kilometers across where people live.   |
| <b>7.0 – 7.9</b>      | Major earthquake. Can cause serious damage over larger areas.  |
| <b>8.0 or greater</b> | Great earthquake. Can cause serious damage in areas several hundred kilometers across.                                       |

Source: 2023 North Carolina State Hazard Mitigation Plan

**Table 4.28 – Modified Mercalli Intensity (MMI) Scale**

| <b>MMI</b> | <b>Shaking</b> | <b>Description/Damage</b>   |
|------------|----------------|---|
| I          | Not felt       | Not felt except by a very few under especially favorable conditions.  |
| II         | Weak           | Felt by a few persons at rest, especially on upper floors of buildings.   |
| III        | Weak           | Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated. |
| IV         | Light          | Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.              |
| V          | Moderate       | Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.   |
| VI         | Strong         | Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.   |

## SECTION 4: RISK ASSESSMENT

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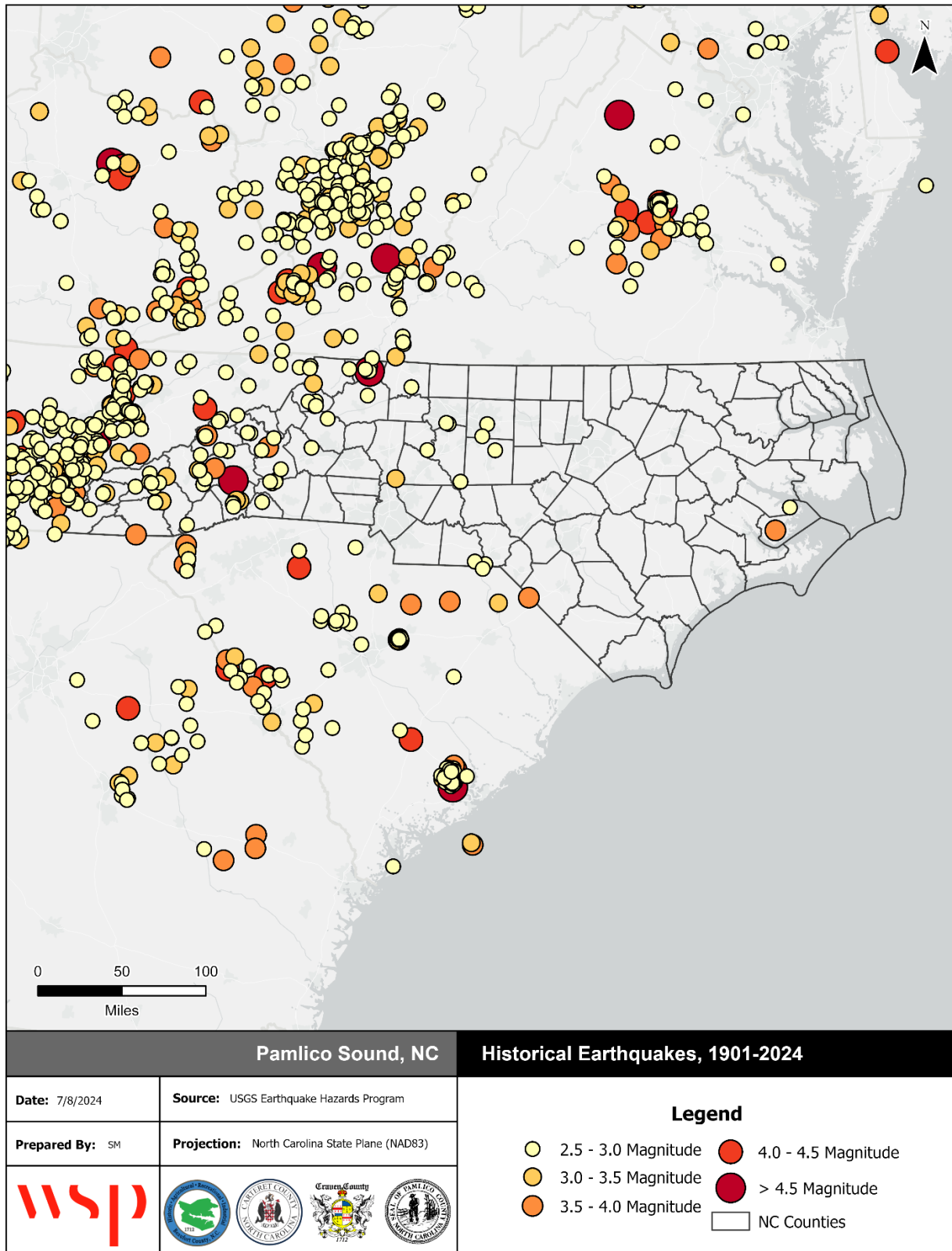
| MMI  | Shaking     | Description/Damage   |
|------|-------------|--|
| VII  | Very strong | Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.  |
| VIII | Severe      | Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. |
| IX   | Violent     | Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.   |
| X    | Extreme     | Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.   |

Source: USGS Earthquake Hazards Program

### HISTORICAL OCCURRENCES

The USGS Earthquake Hazards Program maintains a database of all historical earthquakes of a magnitude 2.5 and greater. Figure 4.18 illustrates historical earthquakes by magnitude in relation to North Carolina and the Quaternary Faults identified by USGS. This includes events from 1973 to 2024. Based on USGS records, there have been two earthquakes with epicenters in the Pamlico Sound Region during this period.

Figure 4.18 - Historical Earthquakes by Magnitude, 1973-2024



Source: USGS Earthquakes Hazard Program

The above map documents all earthquakes that have occurred within North Carolina; however, given the long distances across which earthquake impacts can be felt, these events do not encompass all earthquakes that have affected North Carolina.

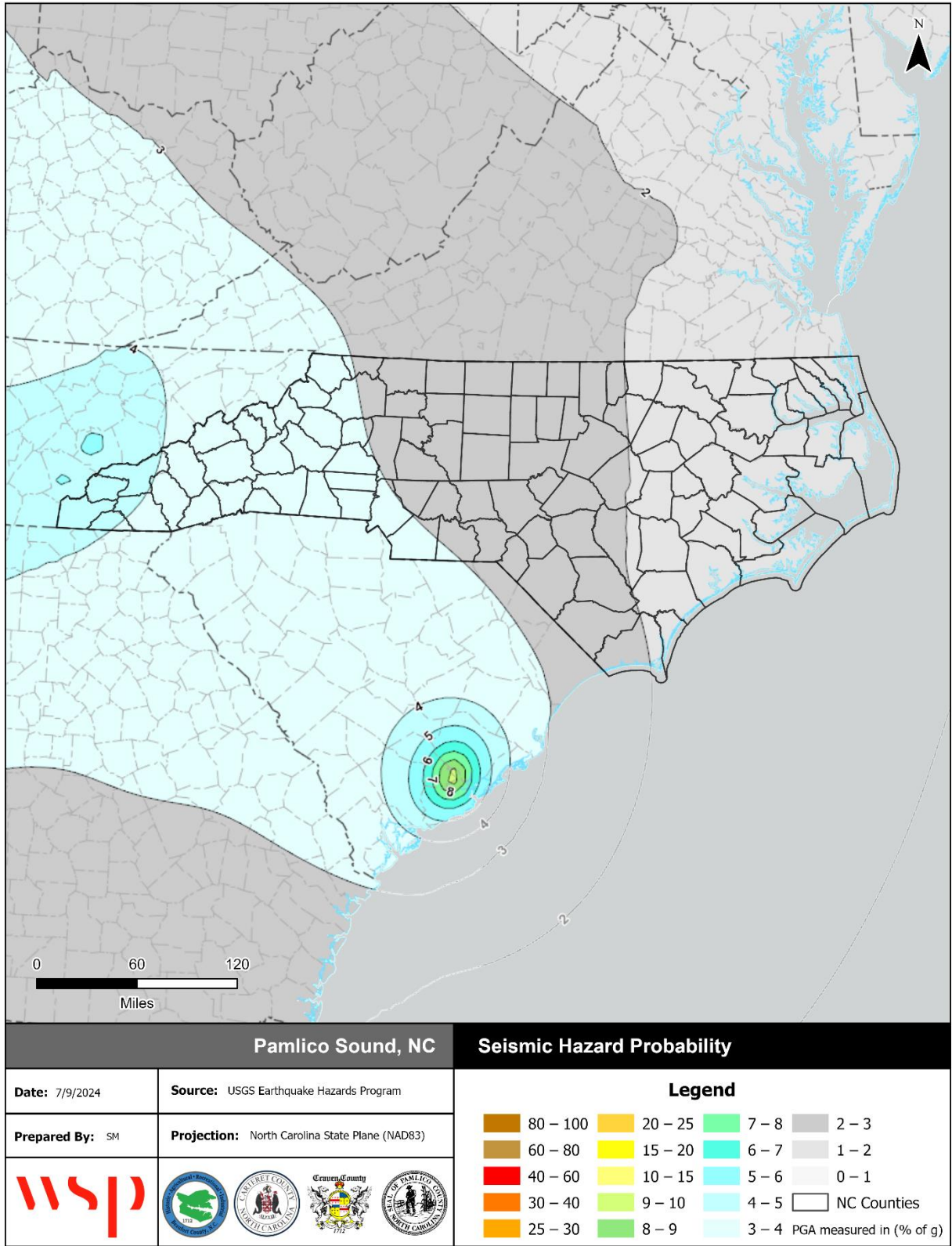
### PROBABILITY OF FUTURE OCCURRENCE

Based on historical occurrence, the Pamlico Sound Region has low chance of an earthquake occurring in any given year. Future probability for the Region is unlikely.

Figure 4.19 reflects the seismic hazard for Pamlico Sound Region based on the national USGS map of peak acceleration with two percent probability of exceedance in 50 years. Ground motion refers to the displacement of Earth's surface caused by earthquakes or explosions. This movement results from waves generated by abrupt fault slippage or sudden pressure from explosive sources, traveling through the Earth and along its surface. Ground motion can be intensified when surface waves interact with unconsolidated materials, bouncing off or refracting against solid bedrock. In USGS earthquake hazard maps, the likelihood of ground motion is illustrated through contour values, indicating the earthquake ground motions (at specific frequencies) expected to be exceeded within a given probability over a 50-year period.



Figure 4.19 - Seismic Hazard Information for North Carolina



Source: USGS Earthquake Hazards Program

**SECTION 4: RISK ASSESSMENT**

Based on this data, it can be reasonably assumed that an earthquake event affecting the Region is unlikely.

*Probability: 1 – Unlikely*

**CLIMATE CHANGE**

Studies have yet to provide quantification of this relationship, so recent earthquakes should not be directly attributed to climate change. Although still inconclusive, preliminary findings suggest that more severe earthquakes and tsunamis could eventually be recognized as additional adverse consequences of climate change.

**VULNERABILITY ASSESSMENT**

*METHODOLOGIES AND ASSUMPTIONS*

Population and property at risk to earthquakes was estimated using data from the NCEM IRISK database, which was compiled in NCEM’s Risk Management Tool.

*PEOPLE*

Earthquake occurrences within the counties of the Pamlico Sound Region are typically associated with mild ground shaking, minimizing the likelihood of injuries or fatalities. The primary safety concern in such situations typically revolves around objects falling, presenting greatest risk to safety.

Table 4.29 and Table 4.30 detail the population estimated to be at risk from a 250-year earthquake and a 500-year earthquake, respectively, according to the NCEM IRISK database.

**Table 4.29 - Estimated Population Impacted by 250-Year Earthquake**

| Jurisdiction                   | Total Population | Total Population at Risk |           | All Elderly Population | Elderly Population at Risk |           | All Children Population | Children at Risk |           |
|--------------------------------|------------------|--------------------------|-----------|------------------------|----------------------------|-----------|-------------------------|------------------|-----------|
|                                |                  | Number                   | Percent   |                        | Number                     | Percent   |                         | Number           | Percent   |
| <b>Beaufort</b>                |                  |                          |           |                        |                            |           |                         |                  |           |
| Unincorporated Beaufort County | 33,905           | 2                        | 0%        | 8,207                  | 0                          | 0%        | 1,523                   | 0                | 0%        |
| City of Washington             | 11,124           | 9                        | 0%        | 2,514                  | 2                          | 0%        | 684                     | 1                | 0%        |
| Town of Aurora                 | 104              | 0                        | 0%        | 27                     | 0                          | 0%        | 4                       | 0                | 0%        |
| Town of Bath                   | 242              | 0                        | 0%        | 69                     | 0                          | 0%        | 13                      | 0                | 0%        |
| Town of Belhaven               | 441              | 0                        | 0%        | 129                    | 0                          | 0%        | 15                      | 0                | 0%        |
| Town of Chocowinity            | 116              | 1                        | 1%        | 25                     | 0                          | 0%        | 5                       | 0                | 0%        |
| Town of Pantego                | 12               | 0                        | 0%        | 2                      | 0                          | 0%        | 1                       | 0                | 0%        |
| Town of Washington Park        | 168              | 0                        | 0%        | 41                     | 0                          | 0%        | 9                       | 0                | 0%        |
| <b>Subtotal Beaufort</b>       | <b>46,112</b>    | <b>12</b>                | <b>0%</b> | <b>11014</b>           | <b>2</b>                   | <b>0%</b> | <b>2254</b>             | <b>1</b>         | <b>0%</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                   | Total Population | Total Population at Risk |           | All Elderly Population | Elderly Population at Risk |           | All Children Population | Children at Risk |           |
|--------------------------------|------------------|--------------------------|-----------|------------------------|----------------------------|-----------|-------------------------|------------------|-----------|
|                                |                  | Number                   | Percent   |                        | Number                     | Percent   |                         | Number           | Percent   |
| <b>Carteret</b>                |                  |                          |           |                        |                            |           |                         |                  |           |
| Unincorporated Carteret County | 34,687           | 0                        | 0%        | 8,258                  | 0                          | 0%        | 1,409                   | 0                | 0%        |
| Town of Atlantic Beach         | 856              | 0                        | 0%        | 349                    | 0                          | 0%        | 6                       | 0                | 0%        |
| Town of Beaufort               | 3,815            | 0                        | 0%        | 1,094                  | 0                          | 0%        | 141                     | 0                | 0%        |
| Town of Bogue                  | 795              | 0                        | 0%        | 140                    | 0                          | 0%        | 42                      | 0                | 0%        |
| Town of Cape Carteret          | 1,647            | 0                        | 0%        | 385                    | 0                          | 0%        | 85                      | 0                | 0%        |
| Town of Cedar Point            | 2,174            | 0                        | 0%        | 516                    | 0                          | 0%        | 112                     | 0                | 0%        |
| Town of Emerald Isle           | 3,275            | 0                        | 0%        | 1,005                  | 0                          | 0%        | 116                     | 0                | 0%        |
| Town of Indian Beach           | 340              | 0                        | 0%        | 140                    | 0                          | 0%        | 8                       | 0                | 0%        |
| Town of Morehead City          | 19,390           | 2                        | 0%        | 4,680                  | 1                          | 0%        | 979                     | 0                | 0%        |
| Town of Newport                | 9,170            | 0                        | 0%        | 1,730                  | 0                          | 0%        | 303                     | 0                | 0%        |
| Town of Peletier               | 617              | 0                        | 0%        | 113                    | 0                          | 0%        | 21                      | 0                | 0%        |
| Town of Pine Knoll Shores      | 1,373            | 0                        | 0%        | 566                    | 0                          | 0%        | 32                      | 0                | 0%        |
| <b>Subtotal Carteret</b>       | <b>78,139</b>    | <b>2</b>                 | <b>0%</b> | <b>18976</b>           | <b>1</b>                   | <b>0%</b> | <b>3254</b>             | <b>0</b>         | <b>0%</b> |
| <b>Craven</b>                  |                  |                          |           |                        |                            |           |                         |                  |           |
| Unincorporated Craven County   | 64,150           | 60                       | 0%        | 12,919                 | 12                         | 0%        | 3,779                   | 4                | 0%        |
| City of Havelock               | 8,226            | 0                        | 0%        | 425                    | 0                          | 0%        | 775                     | 0                | 0%        |
| City of New Bern               | 26,554           | 9                        | 0%        | 5,735                  | 2                          | 0%        | 1,705                   | 1                | 0%        |
| Town of Bridgeton              | 147              | 0                        | 0%        | 28                     | 0                          | 0%        | 11                      | 0                | 0%        |
| Town of Cove City              | 21               | 0                        | 0%        | 5                      | 0                          | 0%        | 3                       | 0                | 0%        |
| Town of Dover                  | 31               | 4                        | 13%       | 8                      | 1                          | 13%       | 4                       | 0                | 0%        |
| Town of River Bend             | 1,852            | 0                        | 0%        | 616                    | 0                          | 0%        | 34                      | 0                | 0%        |
| Town of Trent Woods            | 4,633            | 0                        | 0%        | 1,425                  | 0                          | 0%        | 153                     | 0                | 0%        |
| Town of Vanceboro              | 78               | 0                        | 0%        | 19                     | 0                          | 0%        | 3                       | 0                | 0%        |
| <b>Subtotal Craven</b>         | <b>105,692</b>   | <b>73</b>                | <b>0%</b> | <b>21180</b>           | <b>15</b>                  | <b>0%</b> | <b>6467</b>             | <b>5</b>         | <b>0%</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | Total Population | Total Population at Risk |           | All Elderly Population | Elderly Population at Risk |           | All Children Population | Children at Risk |           |
|-------------------------------|------------------|--------------------------|-----------|------------------------|----------------------------|-----------|-------------------------|------------------|-----------|
|                               |                  | Number                   | Percent   |                        | Number                     | Percent   |                         | Number           | Percent   |
| <b>Pamlico</b>                |                  |                          |           |                        |                            |           |                         |                  |           |
| Unincorporated Pamlico County | 11,911           | 0                        | 0%        | 3,592                  | 0                          | 0%        | 331                     | 0                | 0%        |
| Town of Alliance              | 159              | 0                        | 0%        | 37                     | 0                          | 0%        | 8                       | 0                | 0%        |
| Town of Arapahoe              | 118              | 0                        | 0%        | 37                     | 0                          | 0%        | 5                       | 0                | 0%        |
| Town of Bayboro               | 144              | 0                        | 0%        | 34                     | 0                          | 0%        | 7                       | 0                | 0%        |
| Town of Grantsboro            | 198              | 0                        | 0%        | 44                     | 0                          | 0%        | 7                       | 0                | 0%        |
| Town of Mesic                 | 17               | 0                        | 0%        | 5                      | 0                          | 0%        | 0                       | 0                | 0%        |
| Town of Minnesott Beach       | 128              | 0                        | 0%        | 40                     | 0                          | 0%        | 4                       | 0                | 0%        |
| Town of Oriental              | 295              | 0                        | 0%        | 116                    | 0                          | 0%        | 12                      | 0                | 0%        |
| Town of Stonewall             | 73               | 0                        | 0%        | 32                     | 0                          | 0%        | 2                       | 0                | 0%        |
| Town of Vandemere             | 24               | 0                        | 0%        | 8                      | 0                          | 0%        | 0                       | 0                | 0%        |
| <b>Subtotal Pamlico</b>       | <b>13,067</b>    | <b>0</b>                 | <b>0%</b> | <b>3945</b>            | <b>0</b>                   | <b>0%</b> | <b>376</b>              | <b>0</b>         | <b>0%</b> |
| <b>Region Total</b>           | <b>243,010</b>   | <b>87</b>                | <b>0%</b> | <b>55115</b>           | <b>18</b>                  | <b>0%</b> | <b>12351</b>            | <b>6</b>         | <b>0%</b> |

Source: NCEM Risk Management Tool

**Table 4.30 - Estimated Population Impacted by 500-Year Earthquake**

| Jurisdiction                   | Total Population | Total Population at Risk |         | All Elderly Population | Elderly Population at Risk |         | All Children Population | Children at Risk |         |
|--------------------------------|------------------|--------------------------|---------|------------------------|----------------------------|---------|-------------------------|------------------|---------|
|                                |                  | Number                   | Percent |                        | Number                     | Percent |                         | Number           | Percent |
| <b>Beaufort</b>                |                  |                          |         |                        |                            |         |                         |                  |         |
| Unincorporated Beaufort County | 33,905           | 31,960                   | 94%     | 8,207                  | 7,736                      | 94%     | 1,523                   | 1,436            | 94%     |
| City of Washington             | 11,124           | 11,056                   | 99%     | 2,514                  | 2,499                      | 99%     | 684                     | 680              | 99%     |
| Town of Aurora                 | 104              | 100                      | 96%     | 27                     | 26                         | 96%     | 4                       | 4                | 100%    |
| Town of Bath                   | 242              | 239                      | 99%     | 69                     | 68                         | 99%     | 13                      | 13               | 100%    |
| Town of Belhaven               | 441              | 236                      | 54%     | 129                    | 69                         | 53%     | 15                      | 8                | 53%     |
| Town of Chocowinity            | 116              | 116                      | 100%    | 25                     | 25                         | 100%    | 5                       | 5                | 100%    |
| Town of Pantego                | 12               | 11                       | 92%     | 2                      | 2                          | 100%    | 1                       | 1                | 100%    |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                   | Total Population | Total Population at Risk |            | All Elderly Population | Elderly Population at Risk |            | All Children Population | Children at Risk |            |
|--------------------------------|------------------|--------------------------|------------|------------------------|----------------------------|------------|-------------------------|------------------|------------|
|                                |                  | Number                   | Percent    |                        | Number                     | Percent    |                         | Number           | Percent    |
| Town of Washington Park        | 168              | 166                      | 99%        | 41                     | 41                         | 100%       | 9                       | 9                | 100%       |
| <b>Subtotal Beaufort</b>       | <b>46,112</b>    | <b>43,884</b>            | <b>95%</b> | <b>11014</b>           | <b>10466</b>               | <b>95%</b> | <b>2254</b>             | <b>2156</b>      | <b>96%</b> |
| <b>Carteret</b>                |                  |                          |            |                        |                            |            |                         |                  |            |
| Unincorporated Carteret County | 34,687           | 14,183                   | 41%        | 8,258                  | 3,377                      | 41%        | 1,409                   | 576              | 41%        |
| Town of Atlantic Beach         | 856              | 709                      | 83%        | 349                    | 289                        | 83%        | 6                       | 5                | 83%        |
| Town of Beaufort               | 3,815            | 2,689                    | 70%        | 1,094                  | 771                        | 70%        | 141                     | 99               | 70%        |
| Town of Bogue                  | 795              | 474                      | 60%        | 140                    | 84                         | 60%        | 42                      | 25               | 60%        |
| Town of Cape Carteret          | 1,647            | 934                      | 57%        | 385                    | 218                        | 57%        | 85                      | 48               | 56%        |
| Town of Cedar Point            | 2,174            | 1,598                    | 74%        | 516                    | 379                        | 73%        | 112                     | 82               | 73%        |
| Town of Emerald Isle           | 3,275            | 2,622                    | 80%        | 1,005                  | 805                        | 80%        | 116                     | 93               | 80%        |
| Town of Indian Beach           | 340              | 272                      | 80%        | 140                    | 112                        | 80%        | 8                       | 6                | 75%        |
| Town of Morehead City          | 19,390           | 14,253                   | 74%        | 4,680                  | 3,440                      | 74%        | 979                     | 720              | 74%        |
| Town of Newport                | 9,170            | 6,927                    | 76%        | 1,730                  | 1,307                      | 76%        | 303                     | 229              | 76%        |
| Town of Peletier               | 617              | 338                      | 55%        | 113                    | 62                         | 55%        | 21                      | 12               | 57%        |
| Town of Pine Knoll Shores      | 1,373            | 1,071                    | 78%        | 566                    | 442                        | 78%        | 32                      | 25               | 78%        |
| <b>Subtotal Carteret</b>       | <b>78,139</b>    | <b>46,070</b>            | <b>59%</b> | <b>18976</b>           | <b>11286</b>               | <b>59%</b> | <b>3254</b>             | <b>1920</b>      | <b>59%</b> |
| <b>Craven</b>                  |                  |                          |            |                        |                            |            |                         |                  |            |
| Unincorporated Craven County   | 64,150           | 63,698                   | 99%        | 12,919                 | 12,828                     | 99%        | 3,779                   | 3,752            | 99%        |
| City of Havelock               | 8,226            | 8,147                    | 99%        | 425                    | 421                        | 99%        | 775                     | 768              | 99%        |
| City of New Bern               | 26,554           | 26,312                   | 99%        | 5,735                  | 5,683                      | 99%        | 1,705                   | 1,689            | 99%        |
| Town of Bridgeton              | 147              | 144                      | 98%        | 28                     | 27                         | 96%        | 11                      | 11               | 100%       |
| Town of Cove City              | 21               | 21                       | 100%       | 5                      | 5                          | 100%       | 3                       | 3                | 100%       |
| Town of Dover                  | 31               | 31                       | 100%       | 8                      | 8                          | 100%       | 4                       | 4                | 100%       |
| Town of River Bend             | 1,852            | 1,842                    | 99%        | 616                    | 613                        | 100%       | 34                      | 34               | 100%       |
| Town of Trent Woods            | 4,633            | 4,616                    | 100%       | 1,425                  | 1,420                      | 100%       | 153                     | 152              | 99%        |
| Town of Vanceboro              | 78               | 78                       | 100%       | 19                     | 19                         | 100%       | 3                       | 3                | 100%       |
| <b>Subtotal Craven</b>         | <b>105,692</b>   | <b>104,889</b>           | <b>99%</b> | <b>21180</b>           | <b>21024</b>               | <b>99%</b> | <b>6467</b>             | <b>6416</b>      | <b>99%</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | Total Population | Total Population at Risk |            | All Elderly Population | Elderly Population at Risk |            | All Children Population | Children at Risk |            |
|-------------------------------|------------------|--------------------------|------------|------------------------|----------------------------|------------|-------------------------|------------------|------------|
|                               |                  | Number                   | Percent    |                        | Number                     | Percent    |                         | Number           | Percent    |
| <b>Pamlico</b>                |                  |                          |            |                        |                            |            |                         |                  |            |
| Unincorporated Pamlico County | 11,911           | 11,311                   | 95%        | 3,592                  | 3,411                      | 95%        | 331                     | 314              | 95%        |
| Town of Alliance              | 159              | 159                      | 100%       | 37                     | 37                         | 100%       | 8                       | 8                | 100%       |
| Town of Arapahoe              | 118              | 118                      | 100%       | 37                     | 37                         | 100%       | 5                       | 5                | 100%       |
| Town of Bayboro               | 144              | 144                      | 100%       | 34                     | 34                         | 100%       | 7                       | 7                | 100%       |
| Town of Grantsboro            | 198              | 198                      | 100%       | 44                     | 44                         | 100%       | 7                       | 7                | 100%       |
| Town of Mesic                 | 17               | 17                       | 100%       | 5                      | 5                          | 100%       | 0                       | 0                | 0%         |
| Town of Minnesott Beach       | 128              | 128                      | 100%       | 40                     | 40                         | 100%       | 4                       | 4                | 100%       |
| Town of Oriental              | 295              | 295                      | 100%       | 116                    | 116                        | 100%       | 12                      | 12               | 100%       |
| Town of Stonewall             | 73               | 73                       | 100%       | 32                     | 32                         | 100%       | 2                       | 2                | 100%       |
| Town of Vandemere             | 24               | 24                       | 100%       | 8                      | 8                          | 100%       | 0                       | 0                | 0%         |
| <b>Subtotal Pamlico</b>       | <b>13,067</b>    | <b>12,467</b>            | <b>95%</b> | <b>3945</b>            | <b>3764</b>                | <b>95%</b> | <b>376</b>              | <b>359</b>       | <b>95%</b> |
| <b>Region Total</b>           | <b>243,010</b>   | <b>207,310</b>           | <b>85%</b> | <b>55115</b>           | <b>46540</b>               | <b>84%</b> | <b>12351</b>            | <b>10851</b>     | <b>88%</b> |

Source: NCEM Risk Management Tool

**PROPERTY**

During a severe earthquake event, buildings face the risk of damage from both the shaking itself and the ground beneath them, a phenomenon known as subsidence. In extreme cases, structures may even sink into the ground due to soil liquefaction. Structures built across fault lines are particularly vulnerable to serious damage caused by ground displacement during earthquakes.

Beyond structural damage, earthquakes can also lead to secondary hazards affecting infrastructure. Damages to dams or levees, for example, could result in failures and subsequent flooding. Additionally, fires may ignite from broken gas or power lines, posing a significant threat, particularly if damages water lines impair firefighting efforts.

There have been no records of the Pamlico Sound Region being impacted by an earthquake with more than a low intensity, so damage to the built environment is unlikely.

Table 4.31 through Table 4.32 detail the estimated buildings impacted from varying magnitudes of earthquake events.

**SECTION 4: RISK ASSESSMENT**

**Table 4.31 – Estimated Buildings Impacted by 250-Year Earthquake Event**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                   | Commercial Buildings at Risk |            |                   | Public Buildings at Risk |            |                   | Total Buildings at Risk |            |                   |
|--------------------------------|---------------|-------------------------------|------------|-------------------|------------------------------|------------|-------------------|--------------------------|------------|-------------------|-------------------------|------------|-------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages | Num                          | % of Total | Estimated Damages | Num                      | % of Total | Estimated Damages | Num                     | % of Total | Estimated Damages |
| <b>Beaufort</b>                |               |                               |            |                   |                              |            |                   |                          |            |                   |                         |            |                   |
| Unincorporated Beaufort County | 20,577        | 1                             | 0%         | \$18              | 163                          | 1%         | \$2,103           | 9                        | 0%         | \$157             | 173                     | 1%         | \$2,279           |
| City of Washington             | 5,790         | 4                             | 0%         | \$515             | 77                           | 1%         | \$1,833           | 2                        | 0%         | \$14              | 83                      | 1%         | \$2,362           |
| Town of Aurora                 | 579           | 0                             | 0%         | \$0               | 2                            | 0%         | \$15              | 0                        | 0%         | \$0               | 2                       | 0%         | \$15              |
| Town of Bath                   | 561           | 0                             | 0%         | \$0               | 8                            | 1%         | \$40              | 0                        | 0%         | \$0               | 8                       | 1%         | \$40              |
| Town of Belhaven               | 1,087         | 0                             | 0%         | \$0               | 4                            | 0%         | \$22              | 0                        | 0%         | \$0               | 4                       | 0%         | \$22              |
| Town of Chocowinity            | 398           | 2                             | 1%         | \$767             | 5                            | 1%         | \$148             | 1                        | 0%         | \$7               | 8                       | 2%         | \$921             |
| Town of Pantego                | 132           | 0                             | 0%         | \$0               | 1                            | 1%         | \$0               | 0                        | 0%         | \$0               | 1                       | 1%         | \$0               |
| Town of Washington Park        | 232           | 0                             | 0%         | \$0               | 1                            | 0%         | \$1               | 0                        | 0%         | \$0               | 1                       | 0%         | \$1               |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>7</b>                      | <b>0%</b>  | <b>\$1,300</b>    | <b>261</b>                   | <b>1%</b>  | <b>\$4,162</b>    | <b>12</b>                | <b>0%</b>  | <b>\$178</b>      | <b>280</b>              | <b>1%</b>  | <b>\$5,640</b>    |
| <b>Carteret</b>                |               |                               |            |                   |                              |            |                   |                          |            |                   |                         |            |                   |
| Unincorporated Carteret County | 29,284        | 0                             | 0%         | \$0               | 46                           | 0%         | \$216             | 3                        | 0%         | \$5               | 49                      | 0%         | \$220             |
| Town of Atlantic Beach         | 4,141         | 0                             | 0%         | \$0               | 0                            | 0%         | \$0               | 0                        | 0%         | \$0               | 0                       | 0%         | \$0               |
| Town of Beaufort               | 4,605         | 0                             | 0%         | \$0               | 3                            | 0%         | \$9               | 0                        | 0%         | \$0               | 3                       | 0%         | \$9               |
| Town of Bogue                  | 642           | 0                             | 0%         | \$0               | 3                            | 0%         | \$8               | 4                        | 1%         | \$31              | 7                       | 1%         | \$39              |
| Town of Cape Carteret          | 1,763         | 0                             | 0%         | \$0               | 11                           | 1%         | \$22              | 0                        | 0%         | \$0               | 11                      | 1%         | \$22              |
| Town of Cedar Point            | 1,915         | 0                             | 0%         | \$0               | 14                           | 1%         | \$83              | 0                        | 0%         | \$0               | 14                      | 1%         | \$83              |
| Town of Emerald Isle           | 7,154         | 0                             | 0%         | \$0               | 27                           | 0%         | \$72              | 1                        | 0%         | \$9               | 28                      | 0%         | \$81              |
| Town of Indian Beach           | 1,138         | 0                             | 0%         | \$0               | 0                            | 0%         | \$0               | 0                        | 0%         | \$0               | 0                       | 0%         | \$0               |
| Town of Morehead City          | 10,811        | 0                             | 0%         | \$0               | 24                           | 0%         | \$150             | 1                        | 0%         | \$1               | 25                      | 0%         | \$150             |
| Town of Newport                | 5,441         | 0                             | 0%         | \$0               | 31                           | 1%         | \$73              | 0                        | 0%         | \$0               | 31                      | 1%         | \$73              |
| Town of Peletier               | 943           | 0                             | 0%         | \$0               | 13                           | 1%         | \$73              | 0                        | 0%         | \$0               | 13                      | 1%         | \$73              |
| Town of Pine Knoll Shores      | 2,253         | 0                             | 0%         | \$0               | 1                            | 0%         | \$6               | 0                        | 0%         | \$0               | 1                       | 0%         | \$6               |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>0</b>                      | <b>0%</b>  | <b>\$0</b>        | <b>173</b>                   | <b>0%</b>  | <b>\$712</b>      | <b>9</b>                 | <b>0%</b>  | <b>\$46</b>       | <b>182</b>              | <b>0%</b>  | <b>\$756</b>      |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                   | Commercial Buildings at Risk |            |                   | Public Buildings at Risk |            |                   | Total Buildings at Risk |            |                   |
|-------------------------------|----------------|-------------------------------|------------|-------------------|------------------------------|------------|-------------------|--------------------------|------------|-------------------|-------------------------|------------|-------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages | Num                          | % of Total | Estimated Damages | Num                      | % of Total | Estimated Damages | Num                     | % of Total | Estimated Damages |
| <b>Craven</b>                 |                |                               |            |                   |                              |            |                   |                          |            |                   |                         |            |                   |
| Unincorporated Craven County  | 24,876         | 21                            | 0%         | \$2               | 150                          | 1%         | \$3,033           | 28                       | 0%         | \$555             | 199                     | 1%         | \$3,590           |
| City of Havelock              | 5,417          | 0                             | 0%         | \$0               | 8                            | 0%         | \$110             | 0                        | 0%         | \$0               | 8                       | 0%         | \$110             |
| City of New Bern              | 13,049         | 2                             | 0%         | \$39              | 83                           | 1%         | \$4,020           | 31                       | 0%         | \$781             | 116                     | 1%         | \$4,839           |
| Town of Bridgeton             | 326            | 0                             | 0%         | \$0               | 5                            | 2%         | \$248             | 1                        | 0%         | \$6               | 6                       | 2%         | \$254             |
| Town of Cove City             | 294            | 0                             | 0%         | \$0               | 8                            | 3%         | \$13              | 0                        | 0%         | \$0               | 8                       | 3%         | \$13              |
| Town of Dover                 | 299            | 33                            | 11%        | \$2               | 1                            | 0%         | \$3               | 3                        | 1%         | \$86              | 37                      | 12%        | \$91              |
| Town of River Bend            | 1,553          | 0                             | 0%         | \$0               | 0                            | 0%         | \$0               | 0                        | 0%         | \$0               | 0                       | 0%         | \$0               |
| Town of Trent Woods           | 1,918          | 0                             | 0%         | \$0               | 2                            | 0%         | \$28              | 1                        | 0%         | \$31              | 3                       | 0%         | \$58              |
| Town of Vanceboro             | 522            | 0                             | 0%         | \$0               | 4                            | 1%         | \$93              | 2                        | 0%         | \$36              | 6                       | 1%         | \$130             |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>56</b>                     | <b>0%</b>  | <b>\$43</b>       | <b>261</b>                   | <b>1%</b>  | <b>\$7,548</b>    | <b>66</b>                | <b>0%</b>  | <b>\$1,495</b>    | <b>383</b>              | <b>1%</b>  | <b>\$9,085</b>    |
| <b>Pamlico</b>                |                |                               |            |                   |                              |            |                   |                          |            |                   |                         |            |                   |
| Unincorporated Pamlico County | 6,428          | 0                             | 0%         | \$0               | 15                           | 0%         | \$55              | 1                        | 0%         | \$3               | 16                      | 0%         | \$57              |
| Town of Alliance              | 577            | 0                             | 0%         | \$0               | 0                            | 0%         | \$0               | 0                        | 0%         | \$0               | 0                       | 0%         | \$0               |
| Town of Arapahoe              | 430            | 0                             | 0%         | \$0               | 1                            | 0%         | \$3               | 0                        | 0%         | \$0               | 1                       | 0%         | \$3               |
| Town of Bayboro               | 515            | 0                             | 0%         | \$0               | 2                            | 0%         | \$6               | 0                        | 0%         | \$0               | 2                       | 0%         | \$6               |
| Town of Grantsboro            | 584            | 0                             | 0%         | \$0               | 0                            | 0%         | \$0               | 0                        | 0%         | \$0               | 0                       | 0%         | \$0               |
| Town of Mesic                 | 186            | 0                             | 0%         | \$0               | 1                            | 1%         | \$5               | 0                        | 0%         | \$0               | 1                       | 1%         | \$5               |
| Town of Minnesott Beach       | 403            | 0                             | 0%         | \$0               | 2                            | 0%         | \$1               | 0                        | 0%         | \$0               | 2                       | 0%         | \$1               |
| Town of Oriental              | 1,378          | 0                             | 0%         | \$0               | 1                            | 0%         | \$2               | 0                        | 0%         | \$0               | 1                       | 0%         | \$2               |
| Town of Stonewall             | 227            | 0                             | 0%         | \$0               | 0                            | 0%         | \$0               | 0                        | 0%         | \$0               | 0                       | 0%         | \$0               |
| Town of Vandemere             | 192            | 0                             | 0%         | \$0               | 1                            | 1%         | \$6               | 0                        | 0%         | \$0               | 1                       | 1%         | \$6               |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>0</b>                      | <b>0%</b>  | <b>\$0</b>        | <b>23</b>                    | <b>0%</b>  | <b>\$78</b>       | <b>1</b>                 | <b>0%</b>  | <b>\$3</b>        | <b>24</b>               | <b>0%</b>  | <b>\$80</b>       |
| <b>Region Total</b>           | <b>158,620</b> | <b>63</b>                     | <b>0%</b>  | <b>\$1,343</b>    | <b>718</b>                   | <b>0%</b>  | <b>\$12,500</b>   | <b>88</b>                | <b>0%</b>  | <b>\$1,722</b>    | <b>869</b>              | <b>1%</b>  | <b>\$15,561</b>   |

Source: NCEM Risk Management Tool



**SECTION 4: RISK ASSESSMENT**

**Table 4.32 – Estimated Buildings Impacted by 500-Year Earthquake Event**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                   | Commercial Buildings at Risk |            |                   | Public Buildings at Risk |            |                   | Total Buildings at Risk |            |                   |
|--------------------------------|---------------|-------------------------------|------------|-------------------|------------------------------|------------|-------------------|--------------------------|------------|-------------------|-------------------------|------------|-------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages | Num                          | % of Total | Estimated Damages | Num                      | % of Total | Estimated Damages | Num                     | % of Total | Estimated Damages |
| <b>Beaufort</b>                |               |                               |            |                   |                              |            |                   |                          |            |                   |                         |            |                   |
| Unincorporated Beaufort County | 20,577        | 17,127                        | 83%        | \$152,617         | 2,003                        | 10%        | \$165,213         | 349                      | 2%         | \$85,747          | 19,479                  | 95%        | \$403,577         |
| City of Washington             | 5,790         | 4,833                         | 83%        | \$89,637          | 708                          | 12%        | \$229,632         | 197                      | 3%         | \$66,506          | 5,738                   | 99%        | \$385,775         |
| Town of Aurora                 | 579           | 440                           | 76%        | \$5,547           | 85                           | 15%        | \$6,017           | 33                       | 6%         | \$3,919           | 558                     | 96%        | \$15,483          |
| Town of Bath                   | 561           | 471                           | 84%        | \$4,023           | 51                           | 9%         | \$5,025           | 31                       | 6%         | \$4,033           | 553                     | 99%        | \$13,082          |
| Town of Belhaven               | 1,087         | 511                           | 47%        | \$4,228           | 94                           | 9%         | \$8,119           | 16                       | 1%         | \$2,010           | 621                     | 57%        | \$14,357          |
| Town of Chocowinity            | 398           | 330                           | 83%        | \$21,075          | 36                           | 9%         | \$9,473           | 28                       | 7%         | \$5,622           | 394                     | 99%        | \$36,170          |
| Town of Pantego                | 132           | 108                           | 82%        | \$227             | 11                           | 8%         | \$1,056           | 7                        | 5%         | \$592             | 126                     | 95%        | \$1,875           |
| Town of Washington Park        | 232           | 216                           | 93%        | \$3,422           | 13                           | 6%         | \$852             | 0                        | 0%         | \$0               | 229                     | 99%        | \$4,274           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,036</b>                 | <b>82%</b> | <b>\$280,776</b>  | <b>3,001</b>                 | <b>10%</b> | <b>\$425,387</b>  | <b>661</b>               | <b>2%</b>  | <b>\$168,429</b>  | <b>27,698</b>           | <b>94%</b> | <b>\$874,593</b>  |
| <b>Carteret</b>                |               |                               |            |                   |                              |            |                   |                          |            |                   |                         |            |                   |
| Unincorporated Carteret County | 29,284        | 11,036                        | 38%        | \$93,477          | 1,026                        | 4%         | \$67,184          | 214                      | 1%         | \$38,539          | 12,276                  | 42%        | \$199,200         |
| Town of Atlantic Beach         | 4,141         | 3,240                         | 78%        | \$30,853          | 153                          | 4%         | \$12,362          | 9                        | 0%         | \$614             | 3,402                   | 82%        | \$43,829          |
| Town of Beaufort               | 4,605         | 2,909                         | 63%        | \$24,175          | 283                          | 6%         | \$37,552          | 78                       | 2%         | \$17,896          | 3,270                   | 71%        | \$79,623          |
| Town of Bogue                  | 642           | 324                           | 50%        | \$4,494           | 31                           | 5%         | \$2,248           | 8                        | 1%         | \$2,448           | 363                     | 57%        | \$9,190           |
| Town of Cape Carteret          | 1,763         | 872                           | 49%        | \$14,596          | 91                           | 5%         | \$12,473          | 26                       | 1%         | \$3,619           | 989                     | 56%        | \$30,688          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66%        | \$21,877          | 101                          | 5%         | \$13,881          | 10                       | 1%         | \$3,505           | 1,367                   | 71%        | \$39,263          |
| Town of Emerald Isle           | 7,154         | 5,524                         | 77%        | \$134,647         | 159                          | 2%         | \$18,524          | 19                       | 0%         | \$4,980           | 5,702                   | 80%        | \$158,150         |
| Town of Indian Beach           | 1,138         | 864                           | 76%        | \$19,758          | 24                           | 2%         | \$2,088           | 7                        | 1%         | \$735             | 895                     | 79%        | \$22,580          |
| Town of Morehead City          | 10,811        | 6,745                         | 62%        | \$74,545          | 841                          | 8%         | \$105,747         | 214                      | 2%         | \$66,204          | 7,800                   | 72%        | \$246,497         |
| Town of Newport                | 5,441         | 3,636                         | 67%        | \$30,481          | 347                          | 6%         | \$28,735          | 97                       | 2%         | \$16,081          | 4,080                   | 75%        | \$75,297          |
| Town of Peletier               | 943           | 469                           | 50%        | \$6,393           | 52                           | 6%         | \$9,256           | 8                        | 1%         | \$1,575           | 529                     | 56%        | \$17,224          |
| Town of Pine Knoll Shores      | 2,253         | 1,644                         | 73%        | \$37,224          | 80                           | 4%         | \$8,249           | 29                       | 1%         | \$4,726           | 1,753                   | 78%        | \$50,200          |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>38,519</b>                 | <b>55%</b> | <b>\$492,520</b>  | <b>3,188</b>                 | <b>5%</b>  | <b>\$318,299</b>  | <b>719</b>               | <b>1%</b>  | <b>\$160,922</b>  | <b>42,426</b>           | <b>61%</b> | <b>\$971,741</b>  |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                    | Commercial Buildings at Risk |            |                    | Public Buildings at Risk |            |                   | Total Buildings at Risk |            |                    |
|-------------------------------|----------------|-------------------------------|------------|--------------------|------------------------------|------------|--------------------|--------------------------|------------|-------------------|-------------------------|------------|--------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages  | Num                          | % of Total | Estimated Damages  | Num                      | % of Total | Estimated Damages | Num                     | % of Total | Estimated Damages  |
| <b>Craven</b>                 |                |                               |            |                    |                              |            |                    |                          |            |                   |                         |            |                    |
| Unincorporated Craven County  | 24,876         | 22,277                        | 90%        | \$234,387          | 2,040                        | 8%         | \$276,573          | 305                      | 1%         | \$120,320         | 24,622                  | 99%        | \$631,280          |
| City of Havelock              | 5,417          | 4,844                         | 89%        | \$43,462           | 367                          | 7%         | \$90,385           | 147                      | 3%         | \$188,798         | 5,358                   | 99%        | \$322,645          |
| City of New Bern              | 13,049         | 11,367                        | 87%        | \$158,019          | 1,240                        | 10%        | \$482,903          | 298                      | 2%         | \$198,804         | 12,905                  | 99%        | \$839,726          |
| Town of Bridgeton             | 326            | 235                           | 72%        | \$1,896            | 70                           | 21%        | \$9,902            | 10                       | 3%         | \$1,096           | 315                     | 97%        | \$12,894           |
| Town of Cove City             | 294            | 252                           | 86%        | \$2,863            | 29                           | 10%        | \$2,663            | 12                       | 4%         | \$5,763           | 293                     | 100%       | \$11,289           |
| Town of Dover                 | 299            | 276                           | 92%        | \$3,878            | 6                            | 2%         | \$1,091            | 17                       | 6%         | \$4,135           | 299                     | 100%       | \$9,105            |
| Town of River Bend            | 1,553          | 1,516                         | 98%        | \$19,036           | 25                           | 2%         | \$32,311           | 3                        | 0%         | \$913             | 1,544                   | 99%        | \$52,260           |
| Town of Trent Woods           | 1,918          | 1,868                         | 97%        | \$30,191           | 20                           | 1%         | \$6,511            | 21                       | 1%         | \$12,473          | 1,909                   | 100%       | \$49,175           |
| Town of Vanceboro             | 522            | 411                           | 79%        | \$6,029            | 76                           | 15%        | \$11,531           | 33                       | 6%         | \$7,768           | 520                     | 100%       | \$25,327           |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>43,046</b>                 | <b>89%</b> | <b>\$499,761</b>   | <b>3,873</b>                 | <b>8%</b>  | <b>\$913,870</b>   | <b>846</b>               | <b>2%</b>  | <b>\$540,070</b>  | <b>47,765</b>           | <b>99%</b> | <b>\$1,953,701</b> |
| <b>Pamlico</b>                |                |                               |            |                    |                              |            |                    |                          |            |                   |                         |            |                    |
| Unincorporated Pamlico County | 6,428          | 5,524                         | 86%        | \$24,955           | 503                          | 8%         | \$22,581           | 65                       | 1%         | \$7,252           | 6,092                   | 95%        | \$54,787           |
| Town of Alliance              | 577            | 484                           | 84%        | \$2,395            | 78                           | 14%        | \$6,357            | 14                       | 2%         | \$1,021           | 576                     | 100%       | \$9,772            |
| Town of Arapahoe              | 430            | 386                           | 90%        | \$2,074            | 26                           | 6%         | \$1,516            | 16                       | 4%         | \$3,674           | 428                     | 100%       | \$7,264            |
| Town of Bayboro               | 515            | 408                           | 79%        | \$1,994            | 74                           | 14%        | \$4,866            | 31                       | 6%         | \$18,040          | 513                     | 100%       | \$24,900           |
| Town of Grantsboro            | 584            | 527                           | 90%        | \$2,371            | 36                           | 6%         | \$3,213            | 17                       | 3%         | \$3,114           | 580                     | 99%        | \$8,698            |
| Town of Mesic                 | 186            | 170                           | 91%        | \$649              | 10                           | 5%         | \$207              | 5                        | 3%         | \$86              | 185                     | 99%        | \$943              |
| Town of Minnesott Beach       | 403            | 385                           | 96%        | \$3,428            | 14                           | 3%         | \$6,395            | 2                        | 0%         | \$168             | 401                     | 100%       | \$9,990            |
| Town of Oriental              | 1,378          | 1,255                         | 91%        | \$5,941            | 107                          | 8%         | \$4,730            | 14                       | 1%         | \$1,314           | 1,376                   | 100%       | \$11,985           |
| Town of Stonewall             | 227            | 199                           | 88%        | \$778              | 21                           | 9%         | \$913              | 6                        | 3%         | \$794             | 226                     | 100%       | \$2,486            |
| Town of Vandemere             | 192            | 168                           | 88%        | \$410              | 8                            | 4%         | \$628              | 14                       | 7%         | \$630             | 190                     | 99%        | \$1,668            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,506</b>                  | <b>87%</b> | <b>\$44,995</b>    | <b>877</b>                   | <b>8%</b>  | <b>\$51,406</b>    | <b>184</b>               | <b>2%</b>  | <b>\$36,093</b>   | <b>10,567</b>           | <b>97%</b> | <b>\$132,493</b>   |
| <b>Region Total</b>           | <b>158,620</b> | <b>115,107</b>                | <b>73%</b> | <b>\$1,318,052</b> | <b>10,939</b>                | <b>7%</b>  | <b>\$1,708,962</b> | <b>2,410</b>             | <b>2%</b>  | <b>\$905,514</b>  | <b>128,456</b>          | <b>81%</b> | <b>\$3,932,528</b> |

Source: NCEM Risk Management Tool

## SECTION 4: RISK ASSESSMENT

### ENVIRONMENT

An earthquake is unlikely to cause substantial impacts to the natural environment in the Region. While there's a possibility of damage to the built environment, such as ruptured gas lines affecting the surroundings, historical occurrences suggest that this type of damage is unlikely.

### CONSEQUENCE ANALYSIS

Table 4.33 summarizes the potential negative consequences of earthquake.

**Table 4.33 – Consequence Analysis – Earthquake**

| Category  | Consequences  |
|---|---|
| Public  | Severe impacts are anticipated for individuals who lack protection or are unable to seek shelter, while those who are adequately protected can expect moderate to light impacts.  |
| Responders  | Responders may be required to enter unstable structures or compromised infrastructure. Unprotected personnel are likely to face severe adverse impacts, while protected personnel can expect impacts ranging from moderate to light.  |
| Continuity of Operations (including Continued Delivery of Services) | Damage to facilities and personnel in the incident area may necessitate the relocation of operations and the execution of alternate lines of succession. Disruptions to communication lines and the destruction of facilities could significantly delay the delivery of services. |
| Property, Facilities and Infrastructure                             | Earthquakes may result in significant damages to facilities, infrastructure, people, and hazardous materials within the affected area.  |
| Environment   | The event could lead to substantial damage, resulting in the denial or postponement of access to certain areas. Remediation effort may be necessary.  |
| Economic Condition of the Jurisdiction                              | The local economy and financial stability are anticipated to suffer negative consequences, potentially persisting for an extended duration.   |
| Public Confidence in the Jurisdiction's Governance                  | Ability to respond and recover may be questioned and challenged if planning, response, and recovery are not timely and effective.   |

### HAZARD SUMMARY BY JURISDICTION

The following table summarizes earthquake hazard risk by jurisdiction. Earthquake risk is uniform across the entire region.

| Jurisdiction      | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|-------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| All jurisdictions | 1           | 1      | 4              | 4            | 1        | 1.9   | L        |

#### 4.5.4 EXCESSIVE HEAT

##### HAZARD BACKGROUND

Per information provided by Ready.gov, in most of the United States extreme heat is defined as a long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees. As temperatures rise, our bodies naturally cool down by sweating. In extreme heat, the body must work extra hard to maintain a normal temperature and sweating might not be enough to cool down. When this happens, a person's body temperature rises faster than it can cool itself. Additionally, when the humidity is high, as is common during extreme heat events in North Carolina, evaporative cooling through sweating becomes less effective. Heat-related illnesses occur when the body overheats from exposure to high temperatures and in severe cases can cause damage to the brain and other vital organs<sup>2</sup>. Heat-related illnesses can also arise from moderate to vigorous physical activity in hot situations.

Extreme heat often results in the highest annual number of deaths among all weather-related disasters. On average, the number of extreme heat days has been increasing each year, putting residents at a higher risk of heat-related illnesses. In 2023, more people in the United States died of heat-related illness than any year on record<sup>3</sup>. Per Ready.gov, older adults, children, and people with certain illnesses and chronic conditions are at greater risk from extreme heat; and humidity increases the feeling of heat.

The National Weather Service (NWS) uses the heat index, also known as apparent temperature, to determine when to issue health alerts. The heat index is a measure of how hot it really feels when the relative humidity is considered along with the actual air temperature. In most areas of the country, the NWS generally issues alerts “when the heat index is expected to exceed 105°F -110°F for at least two consecutive days,” but they also work with local partners to determine the most appropriate conditions for a specific geography<sup>4,5</sup>.

In North Carolina, the Department of Health and Human Services (DHHS) uses [regional temperature thresholds](#) to activate its [Heat Health Alert System](#). The regional thresholds recognize that an area’s typical climate conditions and relevant local factors, such as the proportion of the population engaged in outdoor work, can impact how heat affects the local population. DHHS sends heat alerts to county health departments and Heat Health Alert System subscribers when the daily maximum heat index is forecasted to meet or exceed the heat index threshold for their region. In the Pamlico Sound Region, that threshold ranges from 101-103°F, as shown in Figure 4.20.

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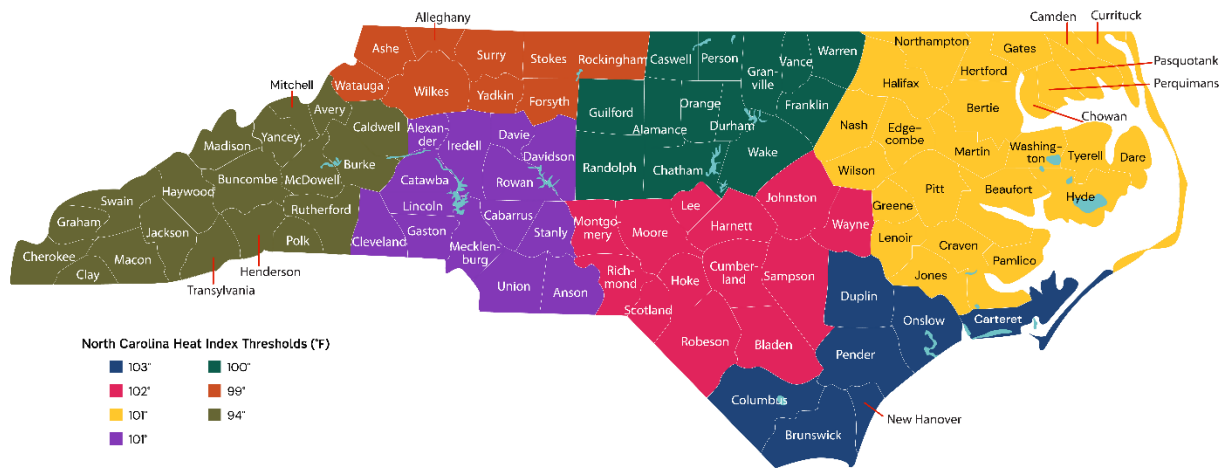
<sup>2</sup> [www.cdc.gov/disasters/extremeheat/heat\\_guide.html](https://www.cdc.gov/disasters/extremeheat/heat_guide.html).

<sup>3</sup> <https://apnews.com/article/record-heat-deadly-climate-change-humidity-south-11de21a526e1cbe7e306c47c2f12438d>

<sup>4</sup> <https://www.weather.gov/safety/heat-index>

<sup>5</sup> <https://www.weather.gov/safety/heat-ww>

**Figure 4.20 – North Carolina Heat Index Thresholds**



Source: [https://climate.ncsu.edu/heat\\_toolkit/thresholds/](https://climate.ncsu.edu/heat_toolkit/thresholds/)

The most dangerous place to be during an extreme heat incident is in a permanent home, with little or no air conditioning. Those at greatest risk for heat-related illness include people 65 years of age and older, young children, people with chronic health problems such as heart disease or asthma, people who are obese, people who are socially isolated, and people who are on certain medications, such as tranquilizers, antidepressants, sleeping pills, or drugs for Parkinson’s disease. However, even young and healthy individuals are susceptible if they participate in strenuous physical activities during hot weather or are not acclimated to hot weather. Table 4.34 lists typical symptoms and health impacts of exposure to extreme heat.

**Table 4.34 – Typical Health Impacts of Extreme Heat**

| Heat Index (HI) | Disorder   |
|-----------------|--|
| 80-90° F (HI)   | Fatigue possible with prolonged exposure and/or physical activity  |
| 90-103° F (HI)  | Heatstroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity            |
| 105-130° F (HI) | Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity |

Source: National Weather Service Heat Index Program, [www.weather.gov/ama/heatindex](http://www.weather.gov/ama/heatindex)

The National Weather Service has a system in place to initiate alert procedures (advisories or warnings) when the Heat Index is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. A common guideline for issuing excessive heat alerts is when the maximum daytime Heat Index is expected to equal or exceed 105 degrees Fahrenheit (°F) and the night time minimum Heat Index is 75°F or above for two or more consecutive days. A heat advisory is issued when temperatures reach 105°F and a warning is issued at 115°F.

Impacts of extreme heat are not only focused on human health, as prolonged heat exposure can have devastating impacts on infrastructure as well. Prolonged high heat exposure increases the risk of pavement deterioration, as well as railroad warping or buckling. High heat also puts a strain on energy systems and consumption, as air conditioners are run at a higher rate and for longer; extreme heat can also reduce transmission capacity over electric systems.

*Warning Time: 1 – More than 24 hours*

*Duration: 3 – Less than 1 week*

**LOCATION**

The entire planning area is susceptible to high temperatures and incidents of extreme heat.

*Spatial Extent: 4 – Large*

**EXTENT**

The extent of extreme heat can be defined by the maximum apparent temperature reached. Apparent temperature is a function of ambient air temperature and relative humidity and is reported as the heat index. The National Weather Service Forecast Office in Raleigh sets the following criteria for heat advisory and excessive heat warning:

- **Heat Advisory** – Heat Index of 105°F to 109°F for 3 hours or more. Can also be issued for lower values 100°F to 104°F for heat lasting several consecutive days
- **Excessive Heat Watch** – Potential for heat index values of 110°F or hotter within 24 to 48 hours. Also issued during prolonged heat waves when the heat index is near 110°F
- **Excessive Heat Warning** – Heat Index of 110°F or greater for any duration

*Impact: 3 – Critical*

**HISTORICAL OCCURRENCES**

According to the National Oceanic and Atmospheric Administration (NOAA), 2019 was North Carolina’s hottest year on record; that record stretches back 124 years to 1895.

NCEI does not record any incidents of heat or excessive heat for the Pamlico Sound Region counties. However, heat index records maintained by the North Carolina Climate Office indicate that the Region regularly experiences heat index temperatures above 100°F. Table 4.35 provide counts of heat index values by threshold recorded from 1999-2023 at the Beaufort Smith Field weather station (KMRH), respectively, used as indicators for the Pamlico Region overall as this is the only weather station maintained by the North Carolina Climate Office within the Region. Counts are provided as the number of hours in a given year where the heat index reached or exceeded 100°F.

**Table 4.35 – Historical Heat Index Counts, Beaufort Smith Field (KMRH), 1999-2023**

| Year | Heat Index Value |            |            |         | Total |
|------|------------------|------------|------------|---------|-------|
|      | 100-104 °F       | 105-109 °F | 110-114 °F | ≥115 °F |       |
| 1999 | 0                | 0          | 0          | 0       | 0     |
| 2000 | 0                | 0          | 0          | 0       | 0     |
| 2001 | 31               | 0          | 0          | 0       | 31    |
| 2002 | 60               | 31         | 4          | 0       | 95    |
| 2003 | 10               | 0          | 0          | 0       | 10    |
| 2004 | 46               | 8          | 0          | 0       | 54    |
| 2005 | 52               | 46         | 3          | 0       | 101   |
| 2006 | 49               | 10         | 0          | 0       | 59    |

**SECTION 4: RISK ASSESSMENT**

| Year           | Heat Index Value |            |           |          | Total       |
|----------------|------------------|------------|-----------|----------|-------------|
|                | 100-104°F        | 105-109°F  | 110-114°F | ≥115°F   |             |
| 2007           | 37               | 10         | 0         | 0        | 47          |
| 2008           | 5                | 0          | 0         | 0        | 5           |
| 2009           | 3                | 0          | 0         | 0        | 3           |
| 2010           | 45               | 0          | 0         | 0        | 45          |
| 2011           | 193              | 98         | 12        | 1        | 304         |
| 2012           | 94               | 20         | 1         | 7        | 122         |
| 2013           | 2                | 0          | 0         | 0        | 2           |
| 2014           | 21               | 0          | 0         | 0        | 21          |
| 2015           | 68               | 5          | 0         | 0        | 73          |
| 2016           | 113              | 7          | 0         | 0        | 120         |
| 2017           | 65               | 10         | 4         | 0        | 79          |
| 2018           | 19               | 0          | 0         | 0        | 19          |
| 2019           | 78               | 2          | 0         | 0        | 80          |
| 2020           | 123              | 19         | 1         | 0        | 143         |
| 2021           | 24               | 0          | 0         | 0        | 24          |
| 2022           | 65               | 7          | 0         | 0        | 72          |
| 2023           | 82               | 11         | 5         | 0        | 98          |
| <b>Sum</b>     | <b>1364</b>      | <b>298</b> | <b>30</b> | <b>8</b> | <b>1700</b> |
| <b>Average</b> | <b>52</b>        | <b>11</b>  | <b>1</b>  | <b>0</b> | <b>65</b>   |

Source: North Carolina Climate Office, Heat Index Climatology Tool

According to this data, the Region averages between 65 hours per year with heat index values above 100°F. The frequency and intensity of higher temperatures is greater in inland areas of the region compared to coastal locations.

**PROBABILITY OF FUTURE OCCURRENCE**

Data was gathered from the North Carolina State Climate Office’s Heat Index Climatology Tool using the Beaufort Smith Field weather station as approximations for the Pamlico Sound Region. Based on 25 years of available data, the Region averages 65 hours per year with heat index temperatures above 100°F. Heat index temperatures surpassed 100°F every year since 2001; this occurred for at least 2 hours a year at the Beaufort Smith Field station.

*Probability: 4 – Highly Likely*

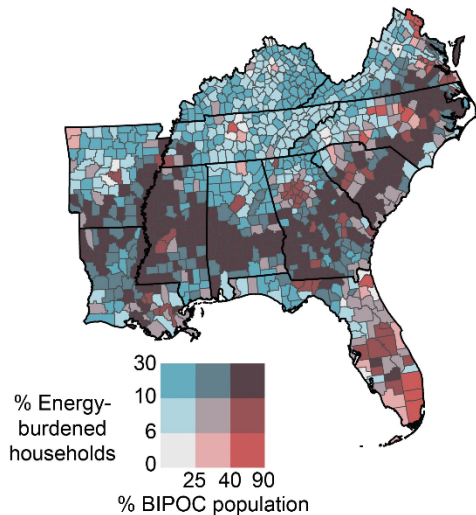
**CLIMATE CHANGE**

Research shows that average temperatures will continue to rise in the Southeast United States and globally, directly affecting the Pamlico Sound Region in North Carolina. Per the Fifth National Climate Assessment, “The number of extreme warm days (above 95°F) is expected to continue increasing with every increment of global warming” and that “heatwaves in the Southeast are happening more frequently and are occurring during a longer heat season, with some cities also showing increasing trends in their duration and intensity.” Additional heat stresses can be attributed to the urban heat island effect which can increase the temperature of those living in urban environments compared to rural areas. The number of days over 95°F in the Pamlico Sound Region is expected to increase by between 10 and 20 days annually, as shown in Figure 4.21.

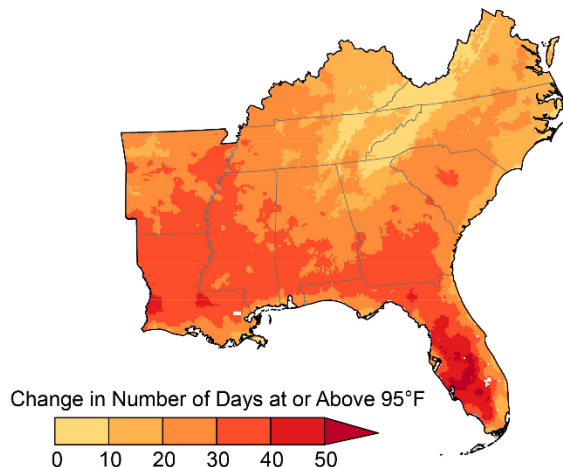
Figure 4.21 - Projected Change in Number of Days Over 95°F

Inequitable Heat Burden and Future Heat Exposure

a) Energy-burdened households overlap with communities of color



b) Projected change in extreme heat days, 2050 compared to 1991–2020



Source: USGCRP, 2023: Fifth National Climate Assessment

The Fifth National Climate Assessment also notes that warm nights (minimum temperatures at or above 70°F) in the southeast have increased the most compared to all other continental U.S. regions.

The State Climate Office of North Carolina’s County-specific climate projections, which are based on the Fifth National Climate Assessment are summarized in Table 4.36 and Table 4.37 below. This data indicates that extreme heat days in the region could more than quadruple, and days with nighttime temperatures above 70°F are expected to almost double.

Table 4.36 - Extreme Heat Projections, Days per Year with Maximum Temperatures Over 95°F

| County   | Historical | Best Case Scenario | Worst Case Scenario |
|----------|------------|--------------------|---------------------|
| Beaufort | 7          | 23                 | 33                  |
| Carteret | 3          | 11                 | 18                  |
| Craven   | 7          | 25                 | 37                  |
| Pamlico  | 5          | 19                 | 28                  |

Source: North Carolina Resilience Exchange Climate Projections and Observations

Table 4.37 - Extreme Heat Projections, Nights per Year with Minimum Temperatures Over 70°F

| County   | Historical | Best Case Scenario | Worst Case Scenario |
|----------|------------|--------------------|---------------------|
| Beaufort | 50         | 84                 | 97                  |
| Carteret | 69         | 99                 | 110                 |
| Craven   | 53         | 88                 | 100                 |
| Pamlico  | 57         | 90                 | 102                 |

Source: North Carolina Resilience Exchange Climate Projections and Observations



## VULNERABILITY ASSESSMENT

### METHODOLOGIES AND ASSUMPTIONS

No data is available to assess the vulnerability of people or property in the planning area to extreme heat.

### PEOPLE

Extreme heat can cause heat stroke and even loss of human life. The elderly and the very young are most at risk to the effects of heat. People who are isolated, people who work outdoors and/or do strenuous labor, people with chronic health problems such as heart disease or asthma, people who are obese, and people who are on certain medications, such as tranquilizers, antidepressants, sleeping pills, or drugs for Parkinson’s disease are also more vulnerable to extreme heat.

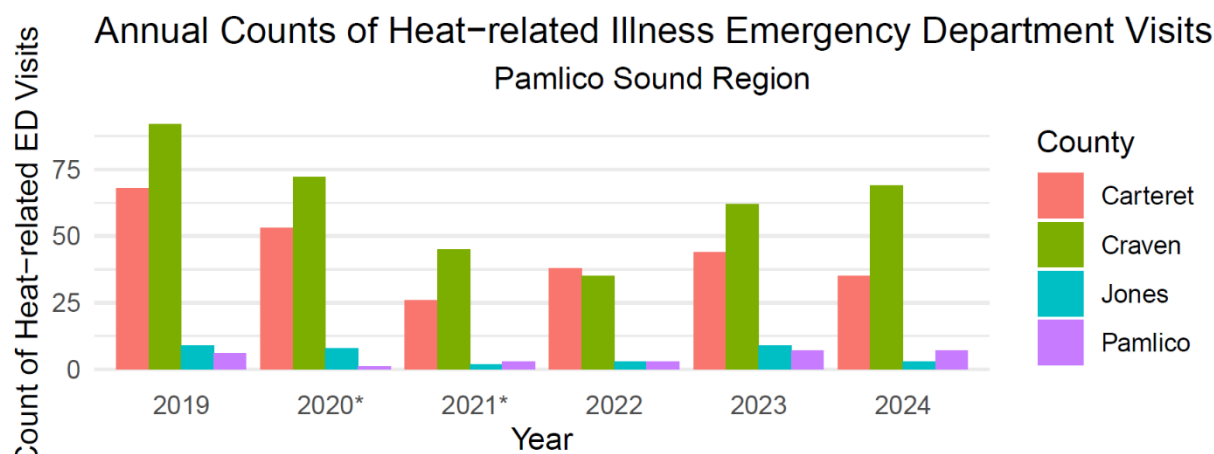
On average, 23 percent of the region’s population is age 65 or older. In the following communities, more than a third of the population is age 65 or older:

- Town of Atlantic Beach (41%)
- Town of Indian Beach (41%)
- Town of Pine Knoll Shores (41%)
- Town of River Bend (33%)
- Town of Oriental (39%)
- Town of Stonewall (44%)
- Town of Vandemere (33%)

Vulnerability to heat is particularly high in these communities, and extra efforts may be needed to ensure these local governments have heat wave response protocols, including places for residents to go during heat waves.

Figure 5.6 shows the annual count of emergency department visits for heat-related illness in Carteret, Craven, Jones, and Pamlico counties, using public health syndromic surveillance system data from NC DETECT.

**Figure 4.22 - Heat Related Illness Emergency Department Visits**



\*ED visits may be lower in 2020 and 2021 due to the COVID-19 pandemic

The annual count of emergency department visits for heat-related illness in Carteret County ranged from 26 visits in 2021 to 68 visits in 2019. The annual count of emergency department visits for heat-related

**SECTION 4: RISK ASSESSMENT**

illness in Craven County ranged from 35 in 2021 to 92 in 2019. The annual count of emergency department visits for heat related illness in Jones County ranged from 2 in 2021 to 9 in 2019. The annual count of emergency department visits for heat related illness in Pamlico County ranged from 1 in 2020 to 7 in 2023 and 2024.

**PROPERTY**

Extreme heat is unlikely to cause significant damages to the built environment. However, road surfaces can be damaged as asphalt softens, and concrete sections may buckle under expansion caused by heat. Train rails may also distort or buckle under the stress of head induced expansion. Power transmission lines may sag from expansion and if contact is made with vegetation the line may short out causing power outages. Additional power demand for cooling also increases power line temperature adding to heat impacts.

Extreme heat can also cause significant agricultural losses. Between 2007-2023, the sum of claims paid for crop damage due to heat in the Pamlico Sound Region was \$8,025,021, or an average of \$472,060 in losses every year. Losses were greatest in 2010. Table 4.38 through Table 4.41 summarize the crop losses due to drought in reported in the RMA system.

**Table 4.38 – Crop Losses Resulting from Heat, Beaufort County, 2007-2023**

| Year         | Determined Acres | Indemnity Amount      |
|--------------|------------------|-----------------------|
| 2008         | 867.10           | \$137,586.00          |
| 2009         | 138.02           | \$19,485.00           |
| 2010         | 13,960.44        | \$1,838,235.00        |
| 2011         | 2,065.35         | \$702,270.00          |
| 2012         | 952.77           | \$178,685.00          |
| 2015         | 154.85           | \$25,502.40           |
| 2016         | 485.68           | \$135,925.30          |
| 2017         | 8.42             | \$1,946.70            |
| 2018         | 189.86           | \$26,456.60           |
| 2019         | 5,520.80         | \$876,833.89          |
| 2020         | 631.61           | \$93,541.4            |
| 2022         | 558.92           | \$62,441.75           |
| <b>Total</b> | <b>25,533.82</b> | <b>\$4,098,909.04</b> |

Source: USDA Risk Management Agency

**Table 4.39 – Crop Losses Resulting from Heat, Carteret County, 2007-2023**

| Year         | Determined Acres | Indemnity Amount      |
|--------------|------------------|-----------------------|
| 2010         | 4,739.70         | \$820,053.00          |
| 2011         | 106.77           | \$14,302.00           |
| 2015         | 34.64            | \$2,127.20            |
| 2019         | 154.40           | \$29,230.20           |
| 2020         | 5,628.95         | \$621,012.00          |
| 2022         | 82.09            | \$23,429.50           |
| <b>Total</b> | <b>10,746.55</b> | <b>\$1,510,153.90</b> |

Source: USDA Risk Management Agency

**Table 4.40 – Crop Losses Resulting from Heat, Craven County, 2007-2023**

| Year         | Determined Acres | Indemnity Amount    |
|--------------|------------------|---------------------|
| 2010         | 266.25           | \$37,313.00         |
| 2011         | 1,057.53         | \$226,654.00        |
| 2012         | 221.74           | \$33,746.00         |
| 2015         | 319.94           | \$84,964.30         |
| 2016         | 382.96           | \$58,688.60         |
| 2017         | 482.45           | \$30,080.50         |
| 2018         | 240.9            | \$29,188.00         |
| 2019         | 1,893.01         | \$350,964.50        |
| 2020         | 69.2             | \$7,346.00          |
| 2022         | 238.62           | \$56,279.30         |
| 2023         | 102.56           | \$64,694.40         |
| <b>Total</b> | <b>5,275.16</b>  | <b>\$979,918.60</b> |

Source: USDA Risk Management Agency

**Table 4.41 – Crop Losses Resulting from Heat, Pamlico County, 2007-2023**

| Year         | Determined Acres | Indemnity Amount      |
|--------------|------------------|-----------------------|
| 2009         | 20.48            | \$12,561.00           |
| 2010         | 2,388.76         | \$961,384.00          |
| 2011         | 640.86           | \$387,622.00          |
| 2015         | 32.30            | \$3,324.00            |
| 2023         | 1,046.30         | \$71,149.20           |
| <b>Total</b> | <b>4,128.7</b>   | <b>\$1,436,040.20</b> |

Source: USDA Risk Management Agency

**ENVIRONMENT**

Wild animals are vulnerable to heat disorders similar to humans, including mortality. Vegetation growth can be stunted or plants may be killed if temperatures rise above their tolerance extremes.

**CONSEQUENCE ANALYSIS**

Table 4.42 summarizes the potential negative consequences of extreme heat.

**Table 4.42 – Consequence Analysis - Extreme Heat**

| Category  | Consequences   |
|---|--|
| Public  | Extreme heat may cause illness and/or death.   |
| Responders  | Consequences may be greater for responders if their work requires exertion and/or wearing heavy protective gear.       |
| Continuity of Operations (including Continued Delivery of Services) | Continuity of operations is not expected to be impacted by extreme heat because warning time for these events is long. |
| Property, Facilities, and Infrastructure                            | Minor impacts may occur, including possible damages to road surfaces and power lines.                                  |
| Environment   | Environmental impacts include strain on local plant and wildlife, including potential for illness or death.            |

**SECTION 4: RISK ASSESSMENT**

| Category   | Consequences   |
|--|--|
| Economic Condition of the Jurisdiction             | Farmers may face crop losses or increased livestock costs. |
| Public Confidence in the Jurisdiction’s Governance | Extreme heat is unlikely to impact public confidence.      |

**HAZARD SUMMARY BY JURISDICTION**

The following table summarizes extreme heat hazard risk by jurisdiction. Extreme heat risk does not vary significantly by jurisdiction; however, several communities were assigned higher impact ratings based on their exposure of vulnerable populations and agriculture. Agricultural vulnerability is highest in Beaufort County, and the Towns of Atlantic Beach, Indian Beach, Pine Knoll Shores, River Bend, Oriental, Stonewall, and Vandemere have the highest proportions of older residents who may be more vulnerable to heat.

| Jurisdiction              | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|---------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Beaufort County           | 4           | 3      | 4              | 1            | 3        | 3.3   | H        |
| City of Washington        | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Aurora            | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Bath              | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Belhaven          | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Chocowinity       | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Pantego           | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Washington Park   | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Carteret County           | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Atlantic Beach    | 4           | 3      | 4              | 1            | 3        | 3.3   | H        |
| Town of Beaufort          | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Bogue             | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Cape Carteret     | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Cedar Point       | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Emerald Isle      | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Indian Beach      | 4           | 3      | 4              | 1            | 3        | 3.3   | H        |
| Town of Morehead City     | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Newport           | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Peletier          | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Pine Knoll Shores | 4           | 3      | 4              | 1            | 3        | 3.3   | H        |
| Craven County             | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| City of Havelock          | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| City of New Bern          | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Bridgeton         | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Cove City         | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Dover             | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of River Bend        | 4           | 3      | 4              | 1            | 3        | 3.3   | H        |
| Town of Trent Woods       | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Vanceboro         | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Pamlico County            | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Alliance          | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |
| Town of Arapahoe          | 4           | 2      | 4              | 1            | 3        | 3.0   | H        |

**SECTION 4: RISK ASSESSMENT**

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| <b>Jurisdiction</b>     | <b>Probability</b> | <b>Impact</b> | <b>Spatial Extent</b> | <b>Warning Time</b> | <b>Duration</b> | <b>Score</b> | <b>Priority</b> |
|-------------------------|--------------------|---------------|-----------------------|---------------------|-----------------|--------------|-----------------|
| Town of Bayboro         | 4                  | 2             | 4                     | 1                   | 3               | 3.0          | H               |
| Town of Grantsboro      | 4                  | 2             | 4                     | 1                   | 3               | 3.0          | H               |
| Town of Mesic           | 4                  | 2             | 4                     | 1                   | 3               | 3.0          | H               |
| Town of Minnesott Beach | 4                  | 2             | 4                     | 1                   | 3               | 3.0          | H               |
| Town of Oriental        | 4                  | 3             | 4                     | 1                   | 3               | 3.3          | H               |
| Town of Stonewall       | 4                  | 3             | 4                     | 1                   | 3               | 3.3          | H               |
| Town of Vandemere       | 4                  | 3             | 4                     | 1                   | 3               | 3.3          | H               |

### 4.5.5 FLOODING

#### HAZARD BACKGROUND

Flooding is defined by the rising and overflowing of water onto normally dry land. As defined by FEMA, a flood is a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties. Flooding can result from an overflow of inland waters or an unusual accumulation or runoff of surface waters from any source.

Flooding is the most frequent and costly of all natural hazards in the United States and has caused more than 10,000 death(s) since 1900. Approximately 90 percent of presidentially declared disasters result from flood-related natural hazard events. As a whole, frequent, localized flooding problems that do not meet federal disaster declaration thresholds ultimately cause the majority of damages across the United States.

#### SOURCES AND TYPES OF FLOODING

The Pamlico Sound Region can experience riverine flooding, coastal flooding and storm surge, sea level rise, and localized stormwater flooding. Each of these types of flooding are described below, based on data from Flood Insurance Study (FIS) reports, Flood Insurance Rate Maps (FIRMs), NOAA, and the HMPC.

**Riverine Flooding:** During heavy rainfall events, the primary riverine flooding sources in the Pamlico Sound Region are as follows, per each county's effective Flood Insurance Study:

- **Beaufort County:** Acre Swamp, Aggie Run/Old Ford Swamp/Big Swamp, Bailey Creek, Bear Creek, Bounts Creek, Broad Creek/Beaverdam Swamp, Broad Creek Tributaries, Chapel Branch, Cherry Run and Tributaries, Chocowinity Creek and Tributaries, Cindy Edwards Branch, Cypress Run, Durham Creek and Tributary, Fork Swamp, Hall Swamp and its tributaries, Tributary A, Harvey Creek, Herring Run, Horse Branch and Tributary, Joe Branch, Latham Creek/Gum Swamp, Maple Branch and Tributary, Mitchell Branch, Morris Run, Patego Creek, Pineygrove Branch, Poundpole Swamp Branch, Pungo Swamp, Runyon Creek/Herring Run, Tankard Creek, Tranters Creek and White Branch.
- **Carteret County:** Deep Creek and Little Deep Creek.
- **Craven County:** Clubfoot Creek, East Prong Slocum Creek and Tributary, Jimmies Creek, Maple Cypress, Mauls Swamp, Mills Branch, Mills Branch Tributary, Morris Branch, Mosley Creek into Neuse River, Mosley Creek Tributary, Samuels Creek/Rocky Run, Scotts Creek, Snake Branch, Southwest Prong Slocum Creek, Swift Creek, Trent River Tributary, Tucker Creek, Village Creek, and Wilson Creek.
- **Pamlico County:** Greens Creek, Kershaw Creek, Morris Creek, North Prong Bay River, Smith Creek, South Prong Bay River, Thomas Creek, and Trent Creek.

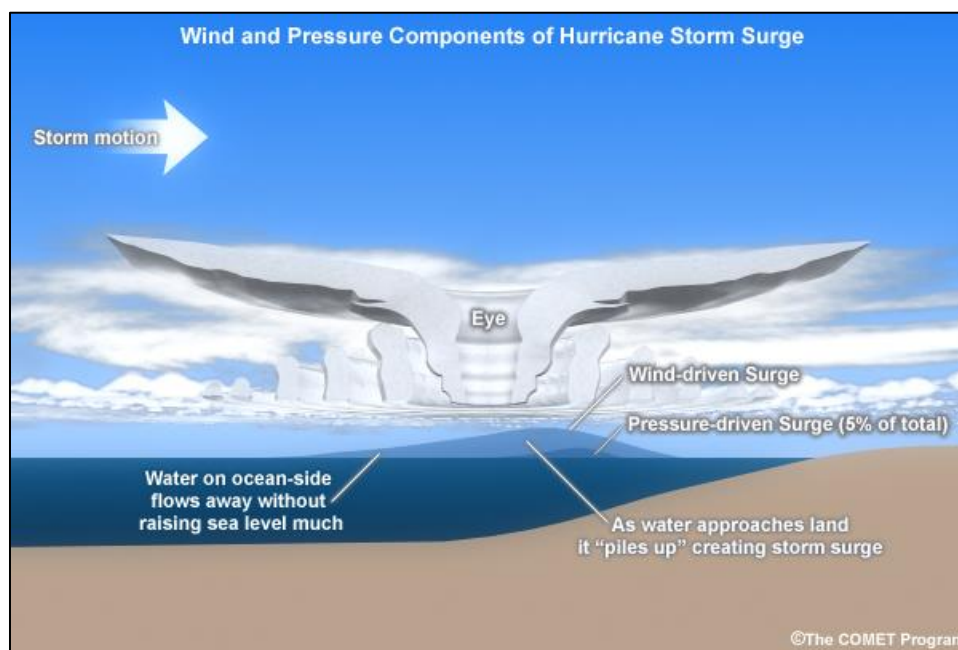
These rivers and their tributaries are susceptible to overflowing their banks during and following excessive precipitation events. Though less common, riverine flood events (such as the "1%-annual-chance flood") will cause significantly more damage and economic disruption for the area than incidences of localized stormwater flooding.

**Coastal Flooding:** All lands bordering the coast along the Atlantic Ocean and in low-lying coastal plains are susceptible to tidal effects and flooding. Coastal land such as sand bars, barrier islands and deltas provide a buffer zone to help protect human life and real property relative to the sea much as floodplains provide a buffer zone along rivers and other bodies of water. Coastal floods usually occur because of abnormally high tides, storm surge, wind-driven waves, and heavy rains associated with tropical storms and hurricanes.

Storm surge is water that is pushed toward the shore by the force of the winds swirling around the storm as shown in Figure 4.23. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the mean water level to heights impacting roads, homes and other critical infrastructure. In addition, wind driven waves are superimposed on the storm tide. This rise in water level can cause severe flooding in coastal areas, particularly when the storm tide coincides with the normal high tides.

The maximum potential storm surge for a location depends on several different factors. Storm surge is a very complex phenomenon because it is sensitive to the slightest changes in storm intensity, forward speed, size (radius of maximum winds-RMW), angle of approach to the coast, central pressure (minimal contribution in comparison to the wind), and the shape and characteristics of coastal features such as bays and estuaries. Other factors which can impact storm surge are the width and slope of the continental shelf and the depth of the ocean bottom. A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water close to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. Much of the North Carolina coast has a narrow continental shelf, with mile-deep waters generally only 20-30 miles off the coast.

**Figure 4.23 - Components of Hurricane Storm Surge**



Source: NOAA/The COMET Program

Wind-driven surge generated in the Atlantic Ocean and pushed into Pamlico Sound and other waters is the primary source of flooding in the Region. The areas susceptible to surge flooding are summarized from each county's FIS as follows:

- **Beaufort County:** Surge moves from Pamlico Sound further into Back Creek, Bailey Creek, Bath Creek, Jacks Creek and its tributaries, Pamlico River, Pantego Creek, Pungo River, Rowland Creek, Snode Creek and South Creek.
- **Carteret County:** Surge propagates into Bogue Inlet, Bogue Sound, Core Sound, Goose Bay, the Intracoastal Waterway, Pamlico Sound, Shackelford Slue, the Straits, and further into Adams Creek, the Neuse River, the Newport River, and the White Oak River.

- **Craven County:** Surge extends from Pamlico Sound into the Neuse River, Hancock Creek, Jack Smith Creek, Lawson Creek, Pamlico River, downstream portions of Rocky Run/Samuels Creek, Slocum Creek, Southwest Prong Slocum Creek, and the Trent River.
- **Pamlico County:** Surge moves from Pamlico Sound further into Bay River, Big Porpoise Bay, Jones Bay, Kershaw Creek, Middle Bay, Morris Creek, Pamlico River, Smith Creek, Thomas Creek, Trent Creek, Whittaker Creek, and Raccoon Creek.

Several of the waterbodies vulnerable to coastal flooding are also susceptible to riverine flooding, indicating the potential for compounding risk when hurricane and tropical storm events bring both coastal surge and heavy rainfall.

The Sea, Lake and Overland Surges from Hurricanes (SLOSH) model is a computerized numerical model developed by the National Weather Service to estimate storm surge heights resulting from historical, hypothetical, or predicted hurricanes by taking into account the atmospheric pressure, size, forward speed, and track data. These parameters are used to create a model of the wind field which drives the storm surge. The SLOSH model consists of a set of physics equations which are applied to a specific locale's shoreline, incorporating the unique bay and river configurations, water depths, bridges, roads, levees and other physical features. The model creates outputs for all different storm simulations from all points of the compass. Each direction has a MEOW (maximum envelope of water) for each category of storm (1-5), and all directions combined result in a MOMs (maximum of maximums) set of data. SLOSH model surge maps are meant to represent a worst case scenario of surge for each storm category.

NOAA SLOSH maps are provided under the Extent section below to illustrate potential storm surge inundation resulting from each category of hurricane.

**Localized Flooding:** Localized flooding consists of flash flooding and stormwater flooding caused by intense rainfall. All areas of the region are susceptible to localized flooding.

Flash flooding occurs when water levels rise at an extremely fast rate as a result of intense rainfall over a brief period, possibly from slow-moving intense storms and sometimes combined with saturated soil or impermeable surfaces. Flash flooding can happen in floodplains and in areas not associated with floodplains. Flash flood hazards caused by surface water runoff are most common in urbanized areas, where greater population density generally equates to more impervious surface (e.g., pavement and buildings) which increases the amount of surface water generated.

Flash flooding is a dangerous form of flooding which can reach full peak in only a few minutes. Rapid onset allows little or no time for protective measures. Flash flood waters move at very fast speeds and can move boulders, tear out trees, scour channels, destroy buildings, and obliterate bridges. Flash flooding can result in higher loss of life, both human and animal, than slower developing river and stream flooding.

Stormwater flooding is smaller scale flooding, separate from coastal or riverine flooding, that can occur anywhere in a community, including areas outside of the mapped floodplain. It can occur as the result of significant amounts of rainfall over a longer time frame. This flooding, sometimes called “nuisance flooding,” often occurs in low-lying areas after a heavy rain and can occur as a result of excessive runoff from increased impervious surface area, poor drainage, inadequate drainage infrastructure, clogged culverts, or obstructed drainageways, among other causes. Additionally, rain and surface runoff can cause stormwater systems to overflow. As rain falls for extended periods of time, the ground becomes saturated, and rain accumulates faster than the soils can absorb it.

In certain areas, aging storm sewer systems are not designed to carry the capacity currently needed to handle the increased storm runoff. Typically, the result is water backing into basements, which damages mechanical systems and can create serious public health and safety concerns.

Localized flooding may be caused by the following issues:



- **Inadequate Capacity** – An undersized/under capacity pipe system can cause water to back-up behind a structure which can lead to areas of ponded water and/or overtopping of banks.
- **Clogged Inlets** – Debris covering the asphalt apron and the top of grate at catch basin inlets may contribute to an inadequate flow of stormwater into the system. Debris within the basin itself may also reduce the efficiency of the system by reducing the carrying capacity.
- **Blocked Drainage Outfalls** – Debris blockage or structural damage at drainage outfalls may prevent the system from discharging runoff, leading to back-up of stormwater within the system.
- **Improper Grade** – Poorly graded asphalt around catch basin inlets may prevent stormwater from entering the catch basin as designed. Areas of settled asphalt may create low spots within the roadway that allow for areas of ponded water.

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### FLOODING AND FLOODPLAINS

A floodplain, as shown in Figure 4.24 and Figure 4.25 on the following page, is flat or nearly flat land adjacent to a stream, river, or body of water that experiences occasional or periodic flooding. In the case of riverine flooding, it includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe, which are areas covered by the flood, but which do not experience a strong current. Floodplains are made when floodwaters exceed the capacity of the main channel or escape the channel by eroding its banks. When this occurs, sediments (including rocks and debris) are deposited that gradually build up over time to create the floor of the floodplain. Floodplains generally contain unconsolidated sediments, often extending below the bed of the stream. In coastal floodplains, zones are distinguished by wave heights.

In its common usage, the floodplain most often refers to that area that is inundated by the “100-year flood,” which is the flood that has a 1% chance in any given year of being equaled or exceeded. The 500-year flood is the flood that has a 0.2 percent chance of being equaled or exceeded in any given year. The potential for flooding can change and increase through various land use changes and changes to land surface, which result in a change to the floodplain. A change in environment can create localized flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. These changes are most often created by human activity.

Floodplain boundaries are designated and routinely updated through cooperation between local governments, states, and FEMA. Flood Insurance Study (FIS) findings are shown on Flood Insurance Rate Maps (FIRMs) and describe various flood hazard zones based on flood height exceedance return periods. Flood hazard zone designations depend on local conditions and map issue dates, but all will show the 1%-annual-chance flood, or base flood, as well as some areas of the 0.2%-annual-chance flood.

The 1%-annual-chance flood, which is the minimum standard used by most federal and state agencies, is used by the NFIP as the standard for floodplain management and to determine the need for flood insurance. Participation in the NFIP requires adoption and enforcement of a local floodplain management ordinance which is intended to prevent unsafe development in the floodplain, thereby reducing future flood damages. Participation in the NFIP allows for the federal government to make flood insurance available within the community as a financial protection against flood losses. Since floods have an annual probability of occurrence, have a known magnitude, depth and velocity for each event, and in most cases, have a map indicating where they will likely occur, they are in many ways often the most predictable and manageable hazard.

*Warning Time: 3 – 6 to 12 hours*

*Duration: 3 – Less than 1 week*

Figure 4.24 – Characteristics of a Floodplain

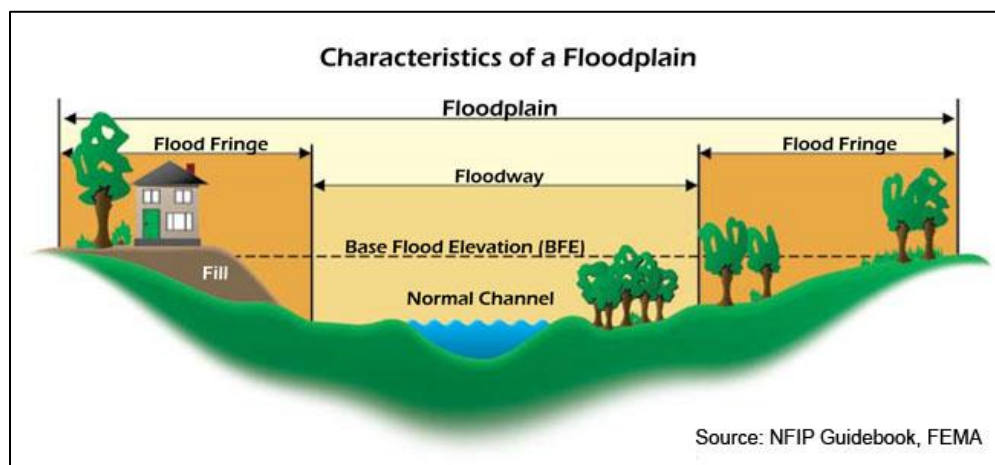
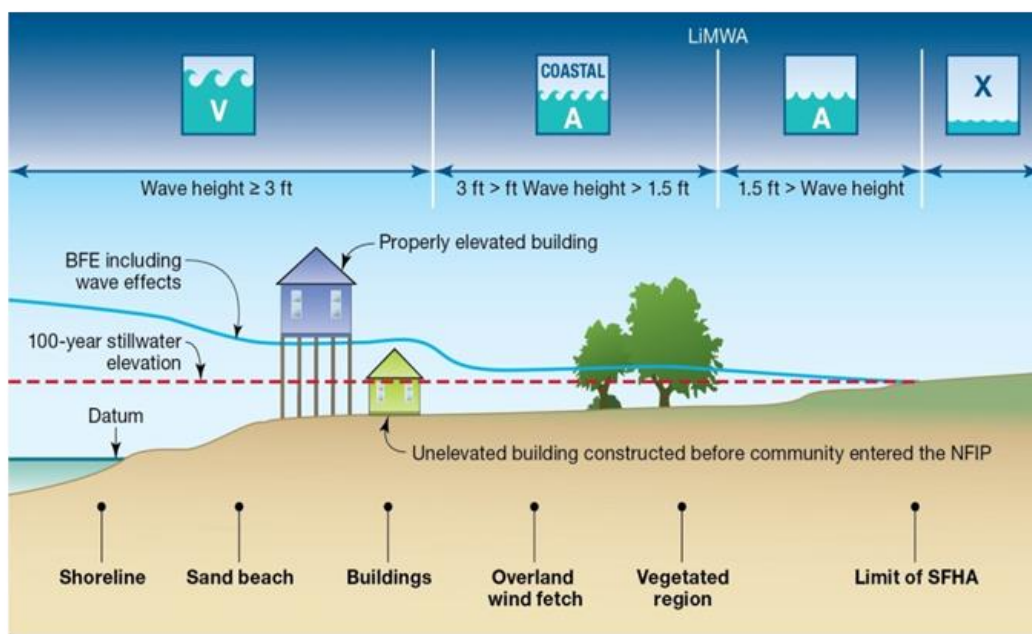


Figure 4.25 – Characteristics of a Coastal Floodplain



Source: FEMA

## LOCATION

Regulated floodplains are illustrated on FIRMs, which are the official maps for a community on which FEMA has delineated both the Special Flood Hazard Areas (SFHAs) and the risk premium zones applicable to the community. SFHAs represent the areas subject to inundation by the 1%-annual-chance flood event.

Flood prone areas were identified within the Pamlico Sound Region using the current effective Flood Insurance Studies and associated FIRMs, with the most recent updates and/or revisions dated June 19, 2020 for Beaufort County, Carteret County, and Pamlico County and June 15, 2022 for Craven County. Table 4.43 summarizes the flood insurance zones identified by the Digital FIRMs (DFIRMs) within the Region.

**Table 4.43 – Mapped Flood Insurance Zones within the Pamlico Sound Region**

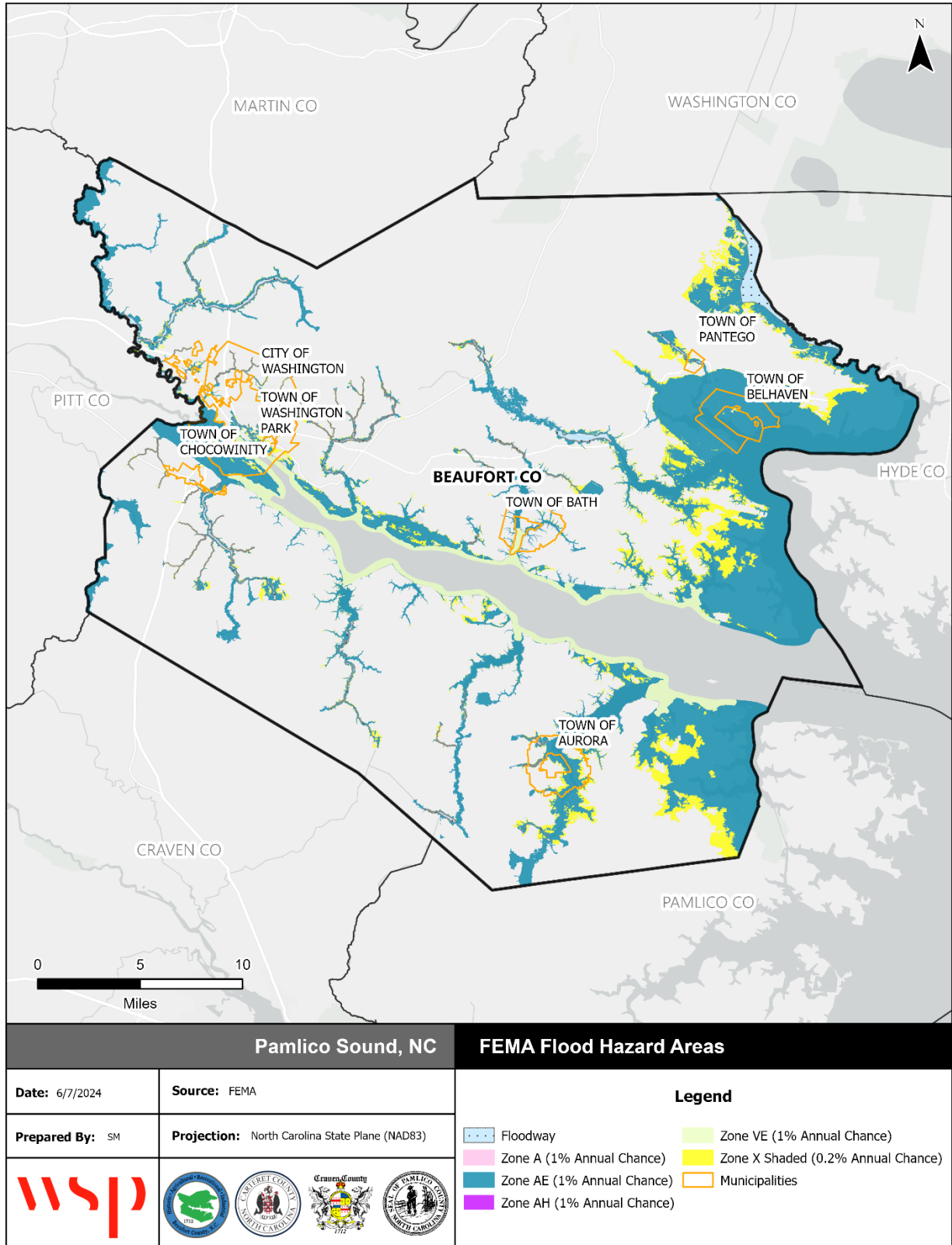
| Zone                                      | Description   |
|---|---|
| <b>A</b>                                  | Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.  |
| <b>AE</b>                                 | AE Zones, also within the 100-year flood limits, are defined with BFEs that reflect the combined influence of stillwater flood elevations and wave effects less than 3 feet. The AE Zone generally extends from the landward VE zone limit to the limits of the 100-year flood from coastal sources, or until it reaches the confluence with riverine flood sources. The AE Zones also depict the SFHA due to riverine flood sources, but instead of being subdivided into separate zones of differing BFEs with possible wave effects added, they represent the flood profile determined by hydrologic and hydraulic investigations and have no wave effects. The Coastal AE Zone is differentiated from the AE Zone by the Limit of Moderate Wave Action (LiMWA) and includes areas susceptible to wave action between 1.5 to 3 feet. |
| <b>AO</b>                                 | Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply.   |
| <b>VE</b>                                 | Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Whole-foot Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.   |
| <b>0.2% Annual Chance (Shaded Zone X)</b> | Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones. (Zone X (shaded) is used on new and revised maps in place of Zone B.)  |
| <b>Zone X (Unshaded)</b>                  | Minimal risk areas outside the 1-percent and .2-percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones. Zone X (unshaded) is used on new and revised maps in place of Zone C.   |

Source: FEMA

Figure 4.26 through Figure 4.29 reflect the effective mapped flood insurance zones for the Pamlico Sound Region by county.

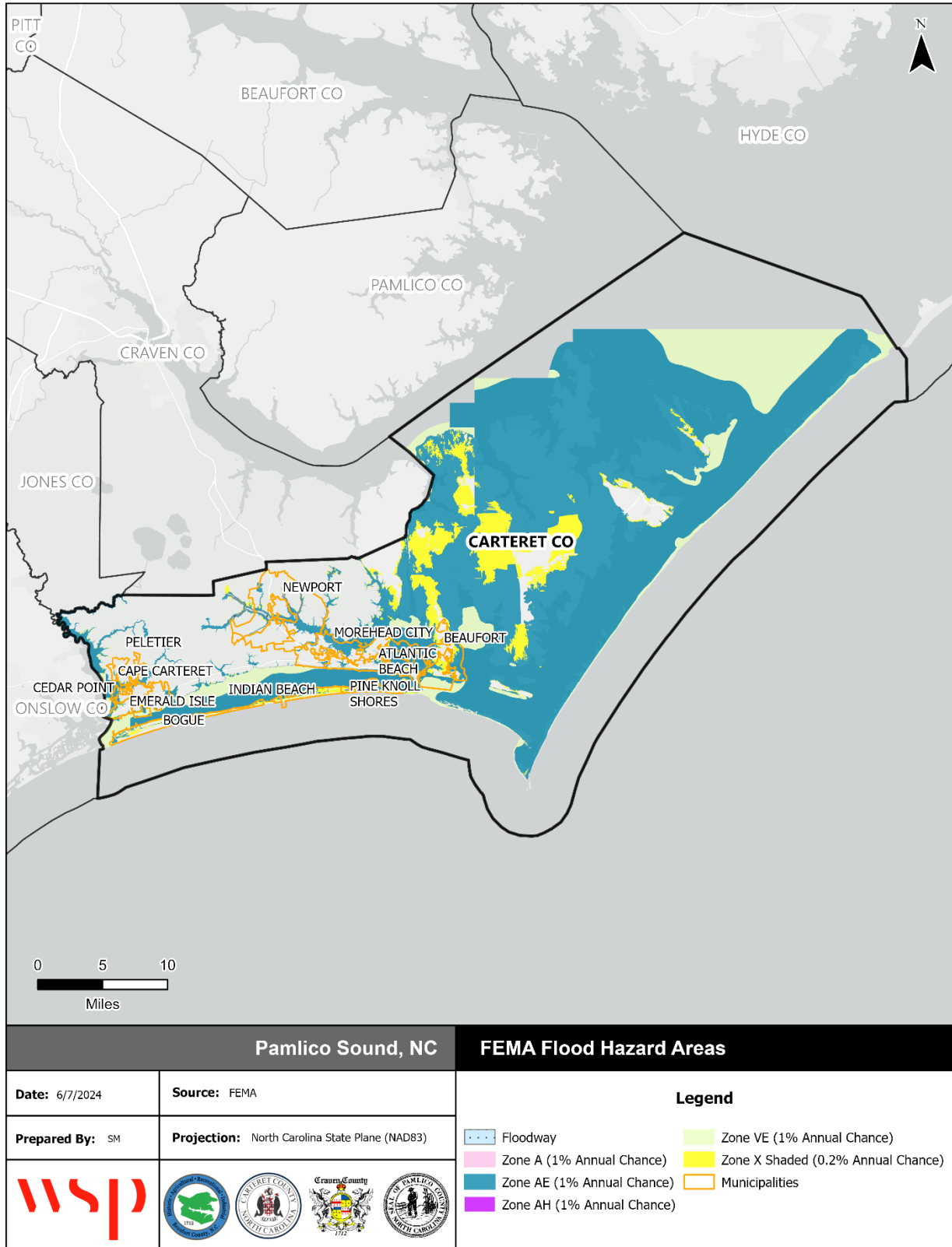
*Spatial Extent: 3 – Moderate*

Figure 4.26 - FEMA Flood Hazard Areas in Beaufort County



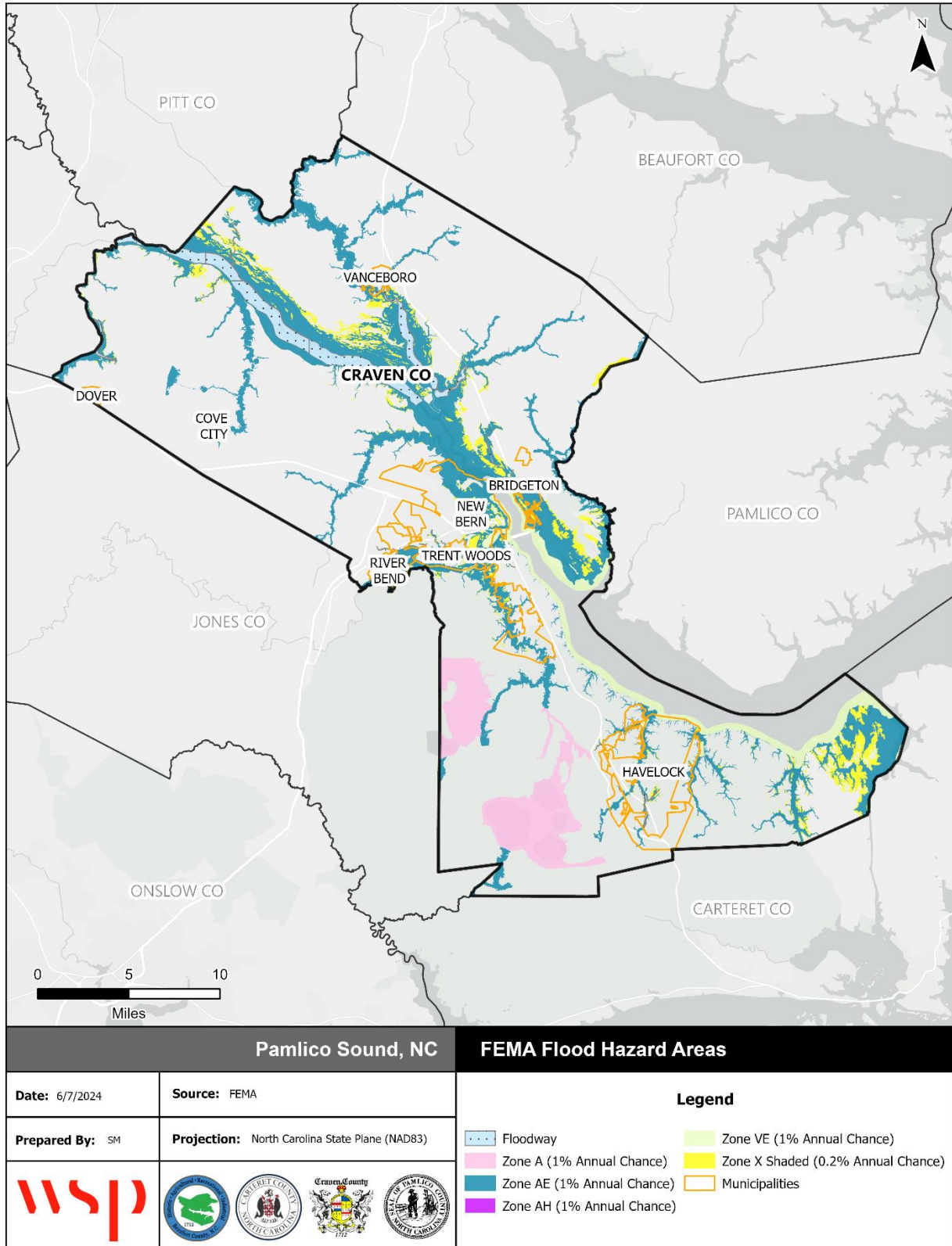
Source: FEMA Effective DFIRM retrieved from North Carolina Flood Risk Information System

Figure 4.27 – FEMA Flood Hazard Areas in Carteret County



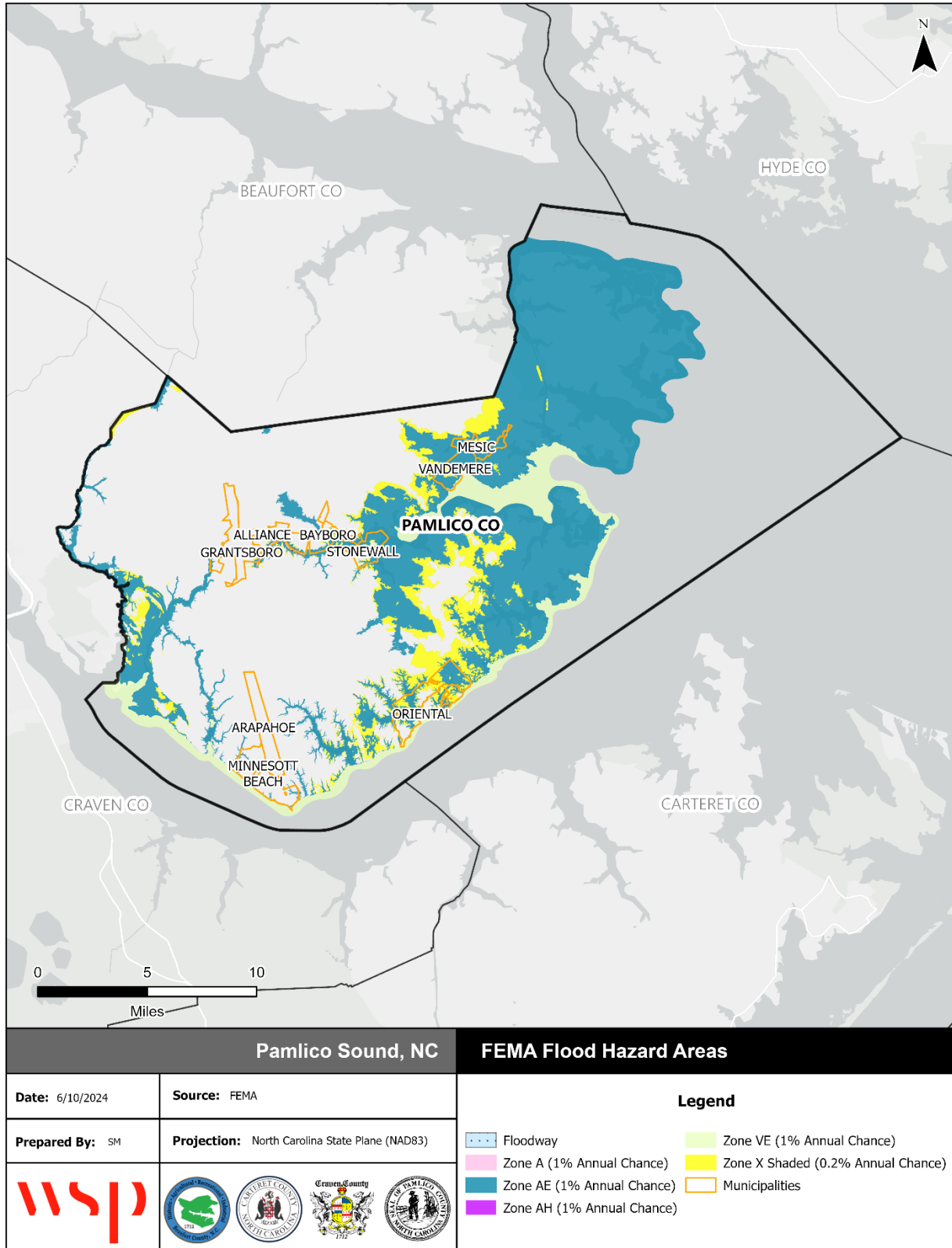
Source: FEMA Effective DFIRM retrieved from North Carolina Flood Risk Information System

Figure 4.28 - FEMA Flood Hazard Areas in Craven County



Source: FEMA Effective DFIRM retrieved from North Carolina Flood Risk Information System

Figure 4.29 – FEMA Flood Hazard Areas in Pamlico County



Source: FEMA Effective DFIRM retrieved from North Carolina Flood Risk Information System

## EXTENT

Flood extent can be defined by the amount of land in the floodplain and the potential magnitude of flooding as measured by flood height and velocity. FEMA Flood Insurance Studies define the probability of flooding by flood events of a magnitude which are expected to be equaled or exceeded once on the average during a specific time period, or recurrence interval.

Table 4.44 provides a summary by county of the Region's total area by flood zone on the current effective DFIRMs. Over 36 percent of the Region falls within the SFHA. Carteret County has the greatest proportion of total area in the SFHA, at over 62 percent, while Beaufort County has the smallest relative SFHA at just over 21 percent of the county's total area.

Figure 4.30 through Figure 4.33 show the depth of flooding estimated to occur from a 1% annual chance flood by county.

**Table 4.44 - Flood Zone Acreage in the Pamlico Sound Region by County**

| Flood Zone             | Acreage          | Percent of Total (%) |
|------------------------|------------------|----------------------|
| <b>Beaufort County</b> |                  |                      |
| Zone A                 | 0.0              | 0.0                  |
| Zone AE                | 120,926.5        | 19.8                 |
| Zone AO                | 16.1             | 0.0                  |
| Zone VE                | 12,900.5         | 2.1                  |
| Zone X (500-year)      | 20,591.9         | 3.4                  |
| Zone X Unshaded        | 415,881.2        | 67.9                 |
| Open Water             | 41,911.1         | 6.8                  |
| <b>Subtotal</b>        | <b>612,227.3</b> | <b>100.0</b>         |
| <b>Carteret County</b> |                  |                      |
| Zone A                 | 0.0              | 0.0                  |
| Zone AE                | 358,353.0        | 53.1                 |
| Zone AO                | 1,165.5          | 0.2                  |
| Zone VE                | 63,537.2         | 9.4                  |
| Zone X (500-year)      | 37,058.9         | 5.5                  |
| Zone X Unshaded        | 117,388.5        | 17.4                 |
| Open Water             | 97,738.6         | 14.5                 |
| <b>Subtotal</b>        | <b>675,241.7</b> | <b>100.0</b>         |
| <b>Craven County</b>   |                  |                      |
| Zone A                 | 19,340.1         | 3.9                  |
| Zone AE                | 83,921.0         | 17.0                 |
| Zone AO                | 1.3              | 0.0                  |
| Zone VE                | 10,923.6         | 2.2                  |
| Zone X (500-year)      | 14,699.1         | 3.0                  |
| Zone X Unshaded        | 345,753.2        | 69.9                 |
| Open Water             | 19,976.4         | 4.0                  |
| <b>Subtotal</b>        | <b>494,614.8</b> | <b>100.0</b>         |



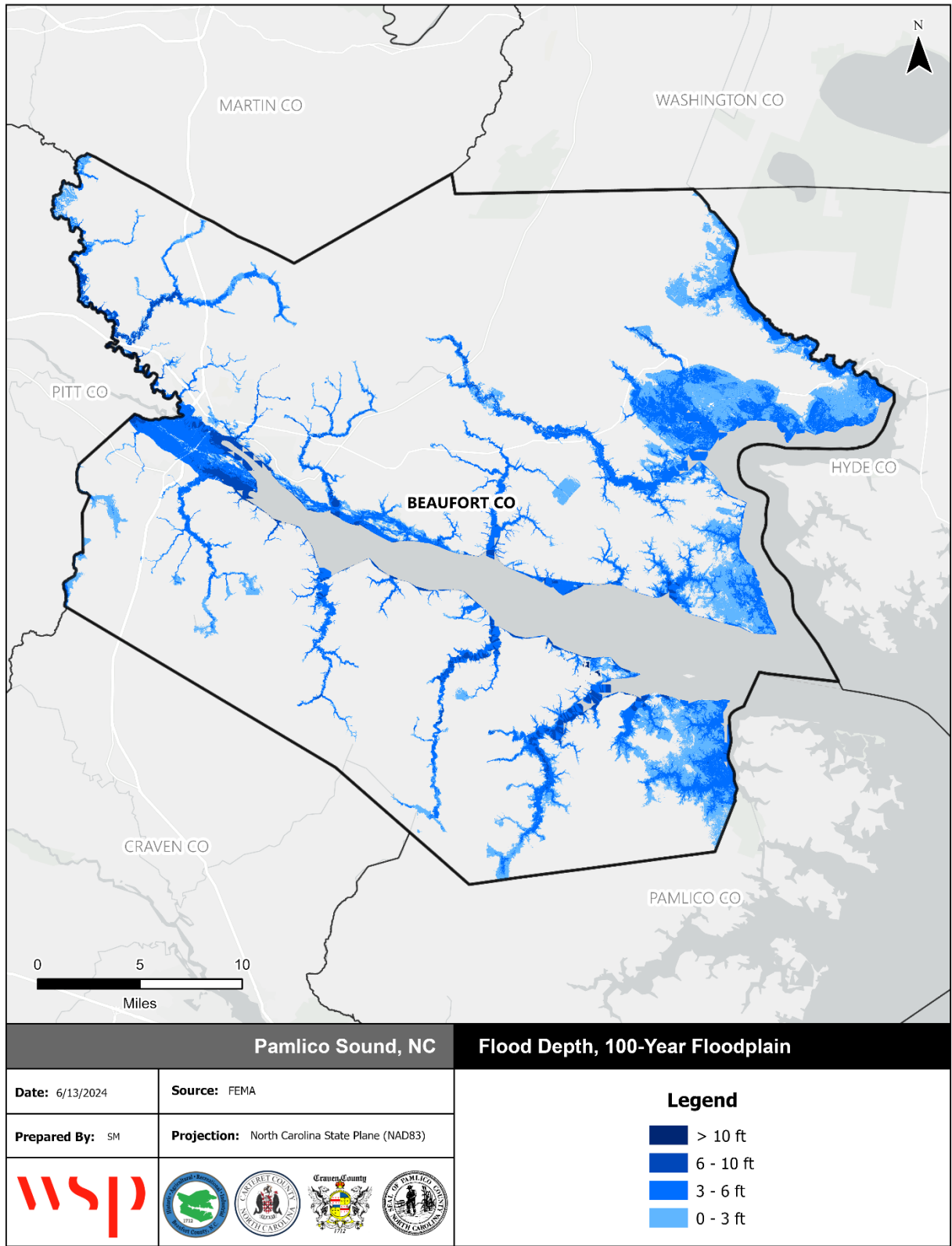
**SECTION 4: RISK ASSESSMENT**

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| <b>Flood Zone</b>           | <b>Acreage</b>     | <b>Percent of Total (%)</b> |
|-----------------------------|--------------------|-----------------------------|
| <b>Pamlico County</b>       |                    |                             |
| Zone A                      | 0.0                | 0.0                         |
| Zone AE                     | 98,916.7           | 27.6                        |
| Zone AO                     | 30.2               | 0.0                         |
| Zone VE                     | 14,187.4           | 4.0                         |
| Zone X (500-year)           | 16,234.9           | 4.5                         |
| Zone X Unshaded             | 121,118.0          | 33.7                        |
| Open Water                  | 108,391.8          | 30.2                        |
| <b>Subtotal</b>             | <b>358,879.0</b>   | <b>100.0</b>                |
| <b>Pamlico Sound Region</b> |                    |                             |
| Zone A                      | 19,340.1           | 0.9                         |
| Zone AE                     | 662,117.2          | 30.9                        |
| Zone AO                     | 1,213.2            | 0.1                         |
| Zone VE                     | 101,548.7          | 4.7                         |
| Zone X (500-year)           | 88,584.8           | 4.1                         |
| Zone X Unshaded             | 1,000,140.8        | 46.7                        |
| Open Water                  | 268,017.9          | 12.5                        |
| <b>Total</b>                | <b>2,140,962.8</b> | <b>100.0</b>                |

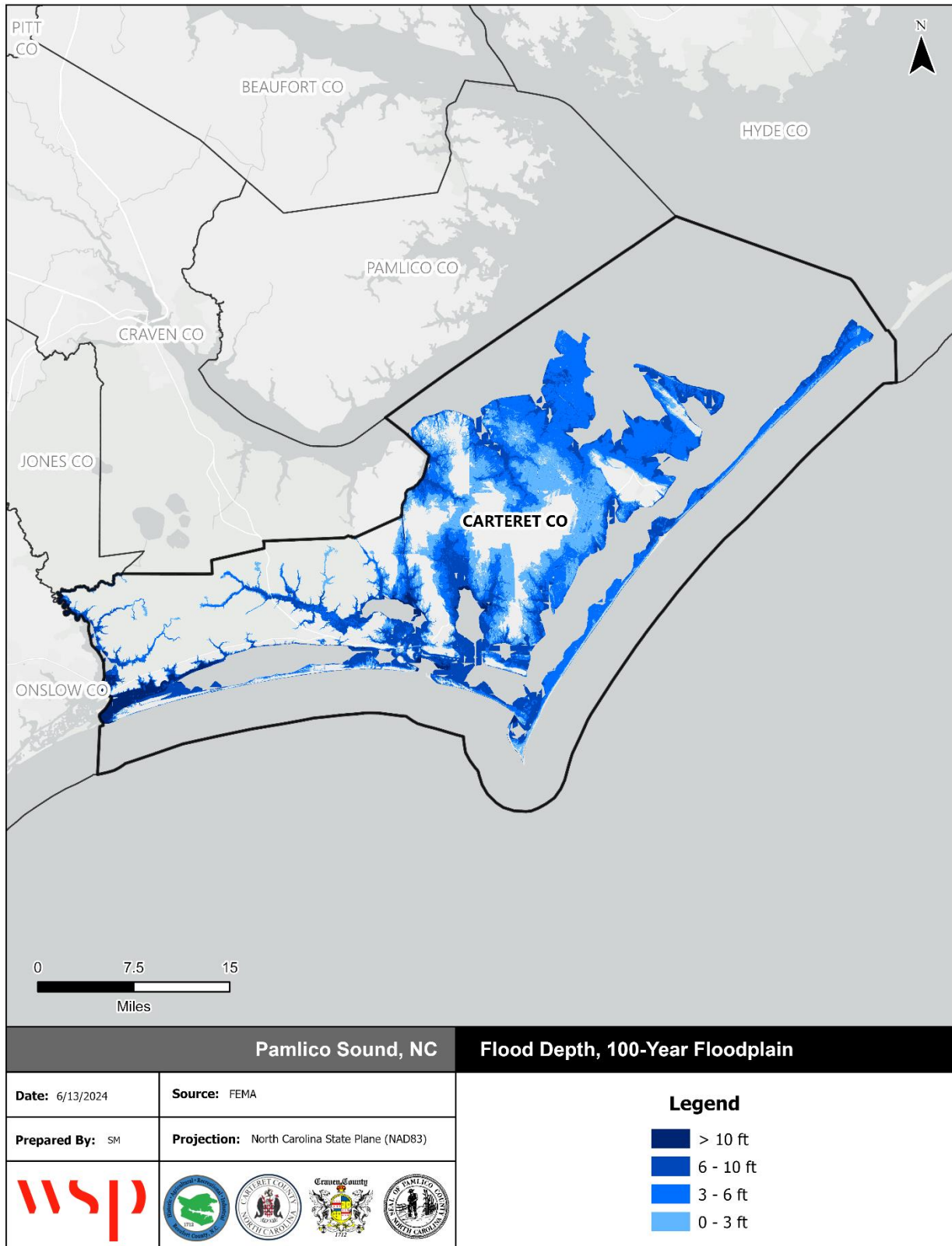
Source: FEMA Effective DFIRMs

Figure 4.30 - Flood Depth, 100-Year Floodplain, Beaufort County



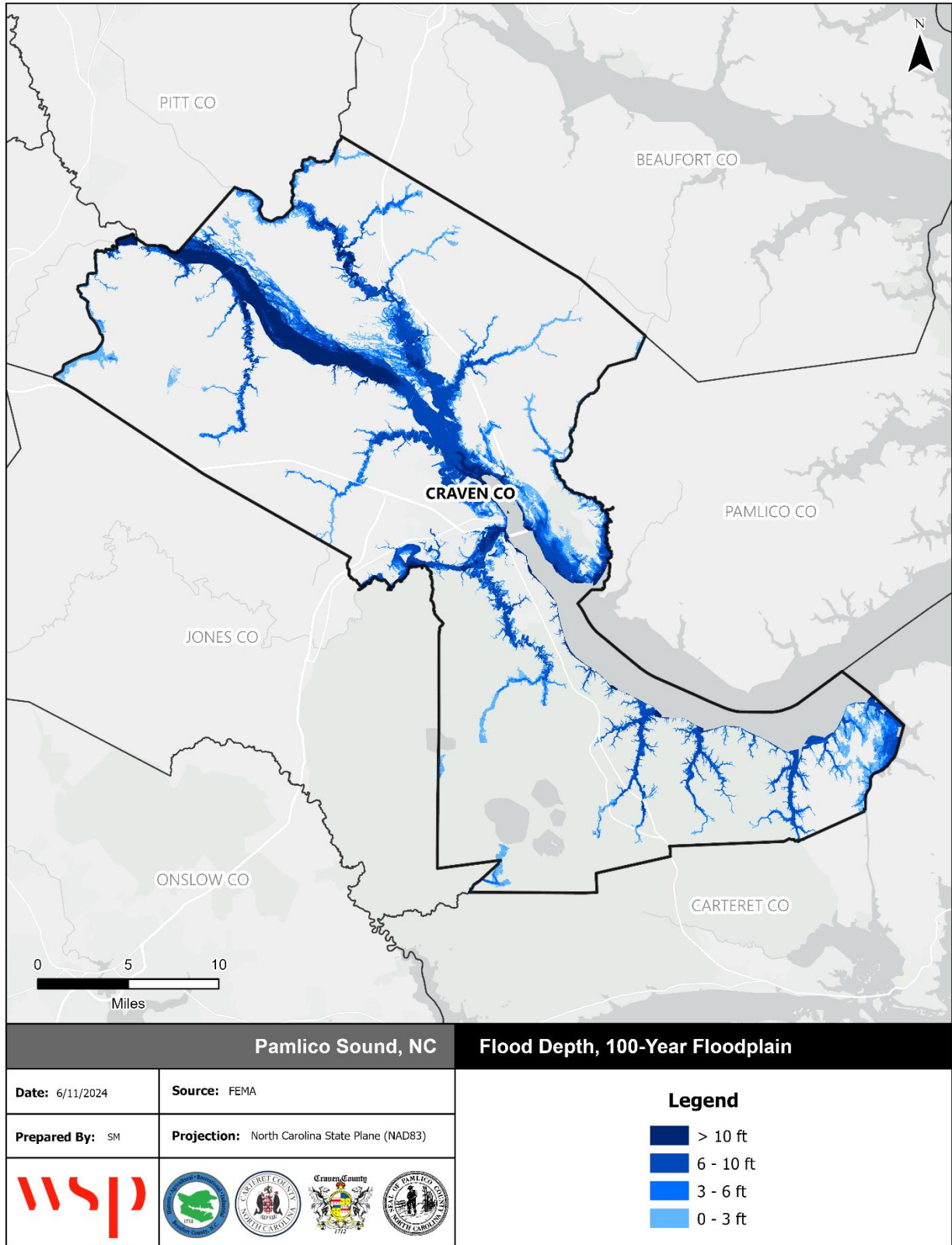
Source: FEMA Effective DFIRM

Figure 4.31 - Flood Depth, 100-Year Floodplain, Carteret County



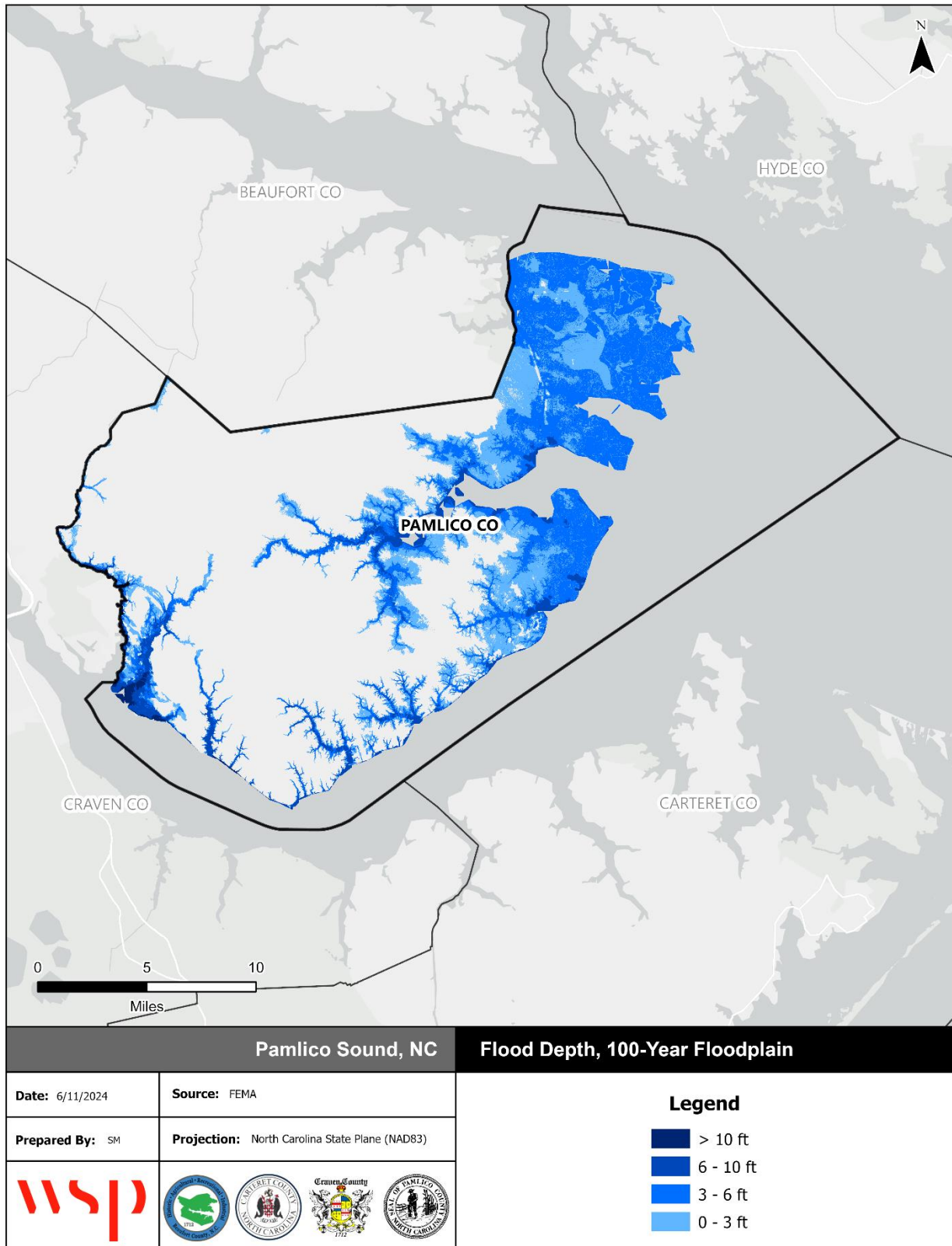
Source: FEMA Effective DFIRM

Figure 4.32 - Flood Depth, 100-Year Floodplain, Craven County



Source: FEMA Effective DFIRM

Figure 4.33 - Flood Depth, 100-Year Floodplain, Pamlico County



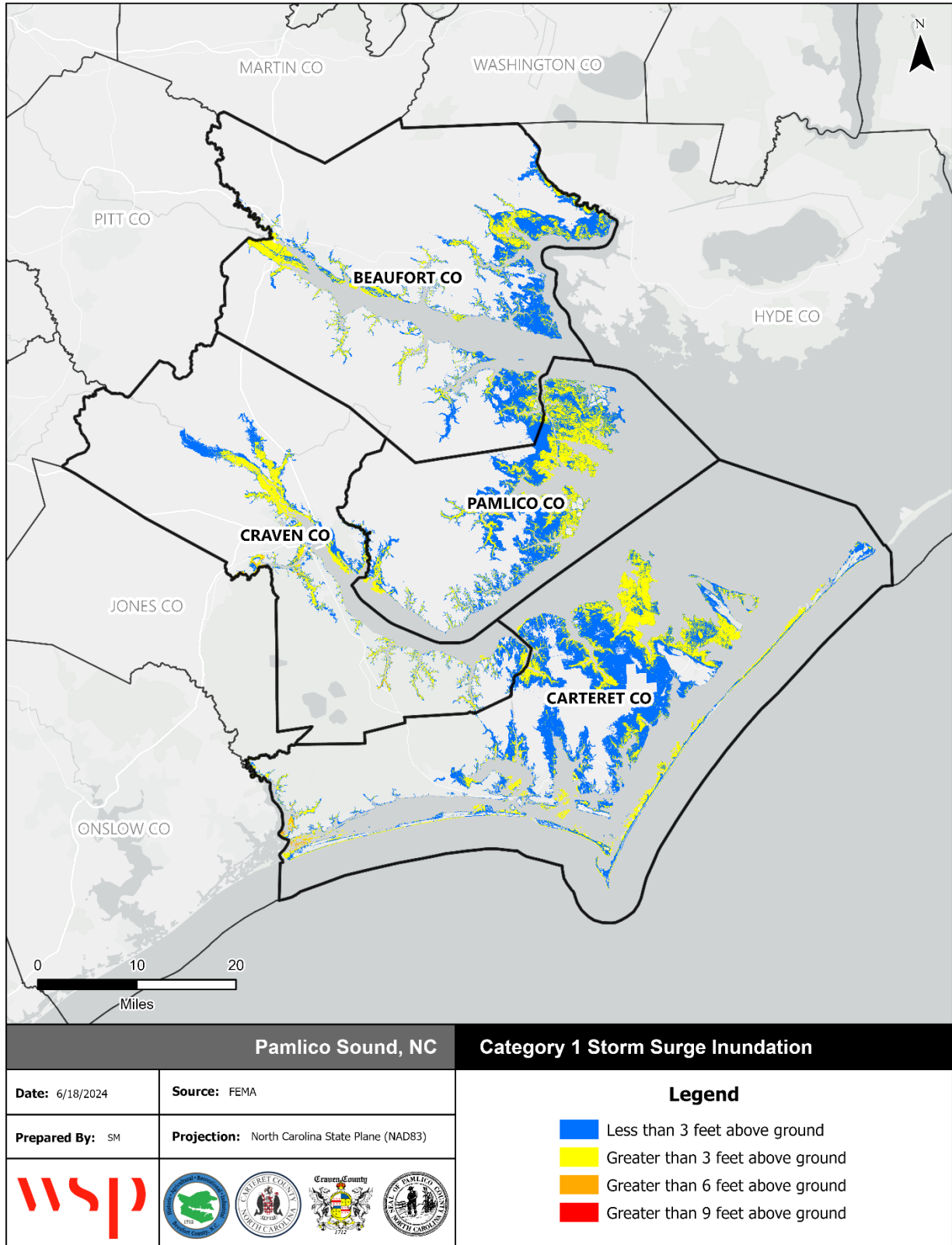
Source: FEMA Effective DFIRM

More than a third of the planning area is within areas of high flood risk, as defined by the SFHA on the current effective DFIRMs. However, while the 1-percent-annual-chance flood is the basis for floodplain management under the NFIP, that does not mean that properties outside the SFHA are not at risk of flooding. Floods of other magnitudes may occur. The remainder of the planning areas is subject to moderate and low flood risk.

Storm surge affects areas along coastal and estuarine shorelines and reaching further inland depending on the height of the surge. Figure 4.34 through Figure 4.38 show the estimated extent of surge by storm category according to NOAA SLOSH data.

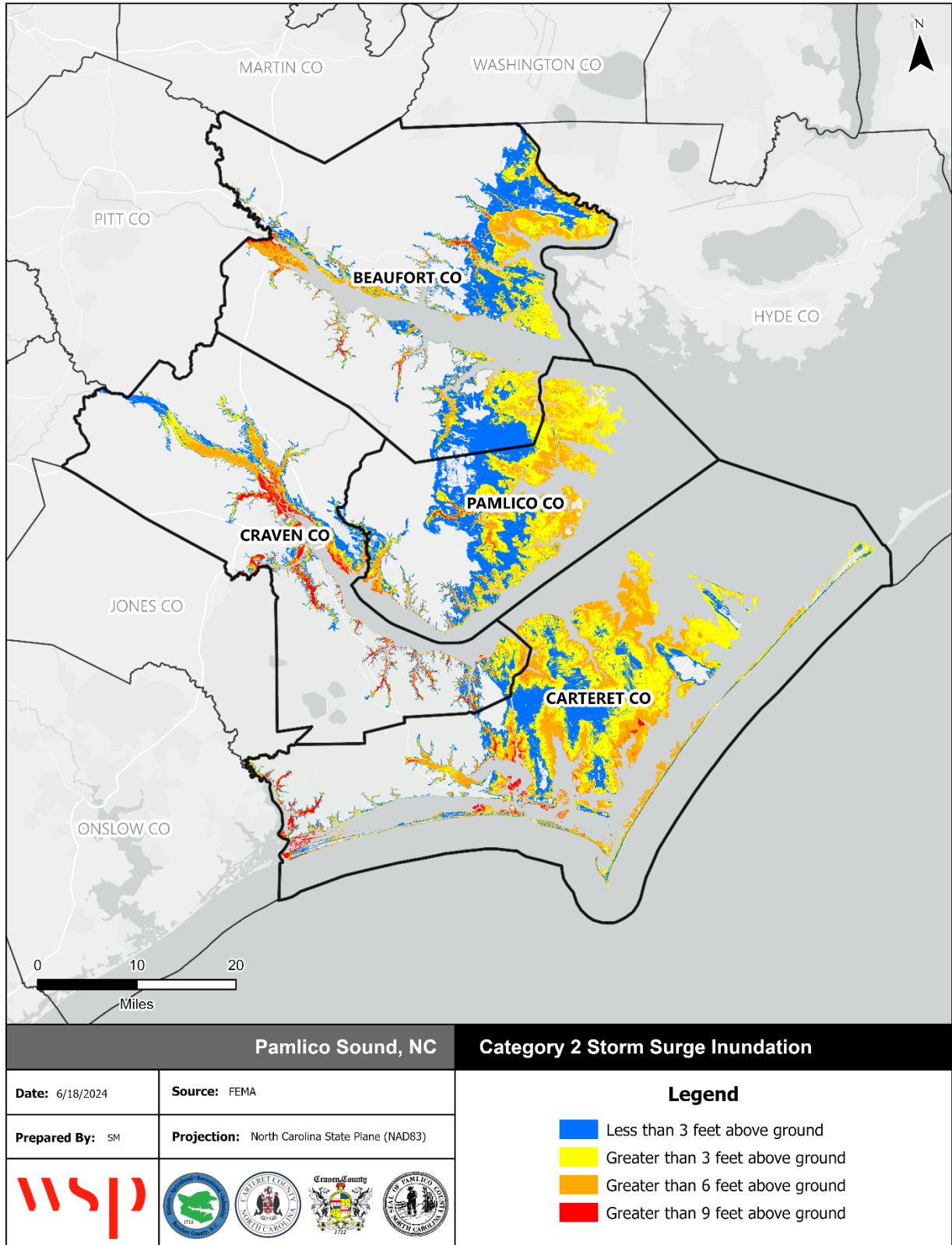
*Impact: 3 – Critical*

Figure 4.34 - Category 1 Storm Surge Inundation



Source: NOAA National Storm Surge Hazard Maps - Version 2

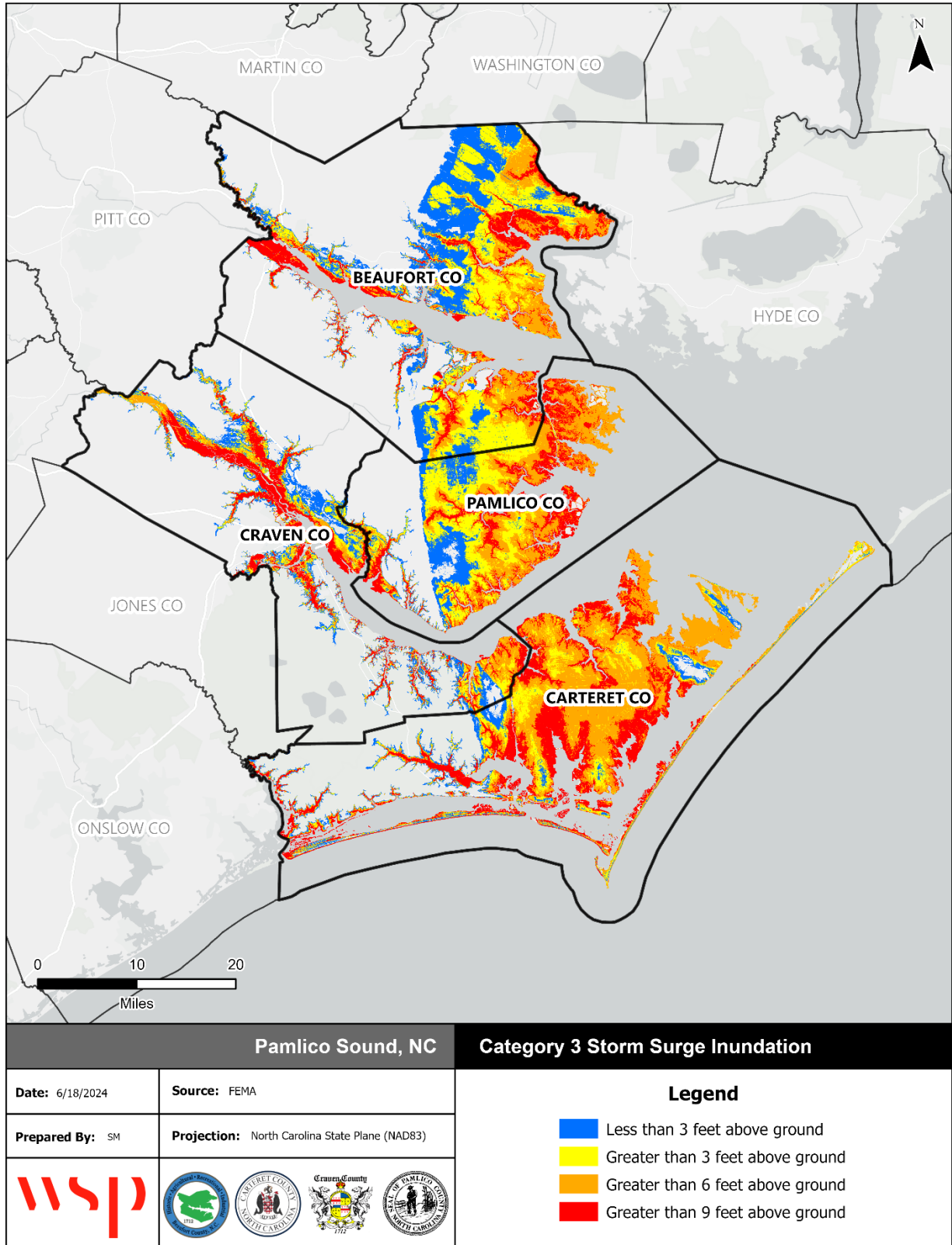
Figure 4.35 - Category 2 Storm Surge Inundation



Source: NOAA National Storm Surge Hazard Maps - Version 2

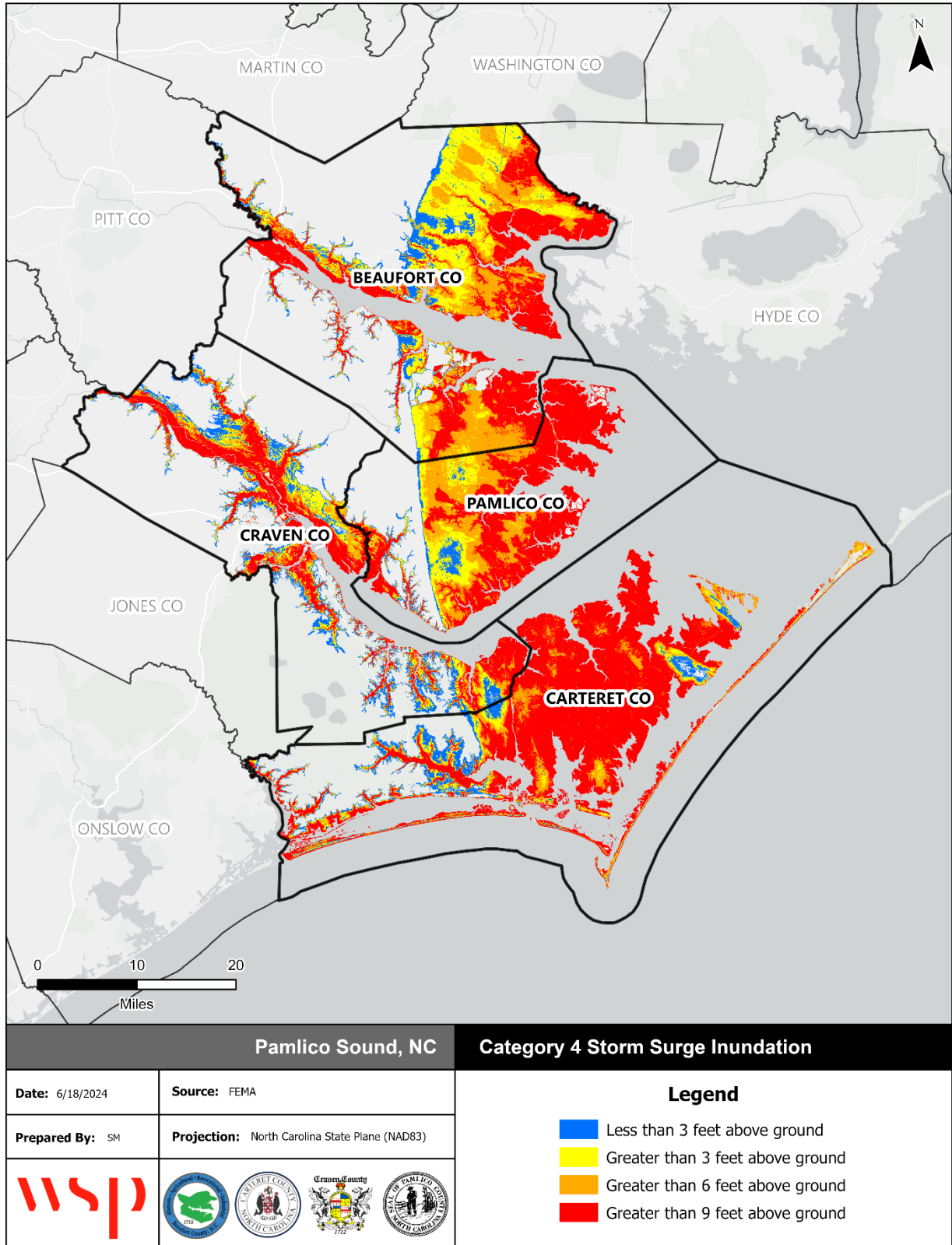


Figure 4.36 - Category 3 Storm Surge Inundation



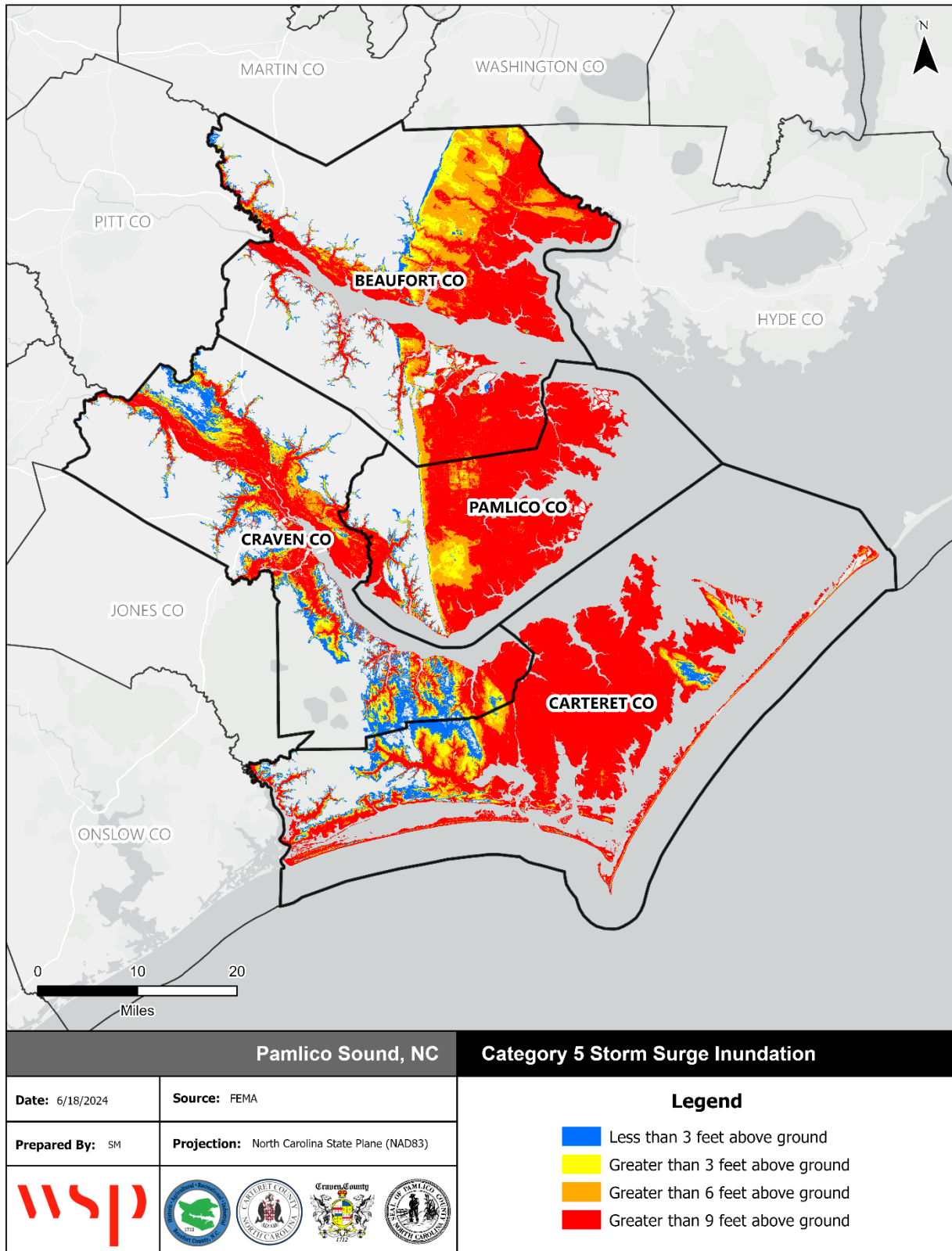
Source: NOAA National Storm Surge Hazard Maps - Version 2

Figure 4.37 – Category 4 Storm Surge Inundation



Source: NOAA National Storm Surge Hazard Maps - Version 2

Figure 4.38 - Category 5 Storm Surge Inundation



Source: NOAA National Storm Surge Hazard Maps - Version 2

## HISTORICAL OCCURRENCES

According to NCEI Storm Events Database records, 125 flood-related events were reported during the 25-year period from 1999 through 2023, across 59 separate days. These events caused 1 death, \$1,253,000 in property damages, and \$55,500,000 in crop damages. Table 4.45 summarizes these historical occurrences of flooding by county and event type. It should be noted that only those historical occurrences listed in the NCEI database are shown here and that other, unrecorded or unreported events may have occurred within the planning area during this timeframe.

**Table 4.45 - NCEI Records of Flooding, 1999-2023**

| Type                | Event Count | Deaths/Injuries | Property Damage    | Crop Damage         |
|---------------------|-------------|-----------------|--------------------|---------------------|
| <b>Beaufort</b>     |             |                 |                    |                     |
| Coastal Flood       | 3           | 0/0             | \$0                | \$0                 |
| Flash Flood         | 19          | 0/0             | \$625,000          | \$55,000,000        |
| Flood               | 7           | 0/0             | \$0                | \$0                 |
| Heavy Rain          | 1           | 0/0             | \$0                | \$0                 |
| <b>Carteret</b>     |             |                 |                    |                     |
| Coastal Flood       | 10          | 0/0             | \$1,000            | \$0                 |
| Flash Flood         | 31          | 0/0             | \$10,000           | \$0                 |
| Flood               | 16          | 0/0             | \$5,000            | \$0                 |
| Heavy Rain          | 4           | 0/0             | \$0                | \$0                 |
| <b>Craven</b>       |             |                 |                    |                     |
| Coastal Flood       | 5           | 0/0             | \$1,000            | \$0                 |
| Flash Flood         | 17          | 0/0             | \$500,000          | \$0                 |
| Flood               | 9           | 1/0             | \$101,000          | \$0                 |
| Heavy Rain          | 4           | 0/0             | \$0                | \$0                 |
| <b>Pamlico</b>      |             |                 |                    |                     |
| Coastal Flood       | 3           | 0/0             | \$0                | \$0                 |
| Flash Flood         | 9           | 0/0             | \$10,000           | \$0                 |
| Flood               | 1           | 0/0             | \$0                | \$0                 |
| Heavy Rain          | 1           | 0/0             | \$0                | \$0                 |
| <b>Region Total</b> |             |                 |                    |                     |
| Coastal Flood       | 19          | 0/0             | \$2,000            | \$0                 |
| Flash Flood         | 63          | 0/0             | \$1,145,000        | \$55,500,000        |
| Flood               | 33          | 1/0             | \$106,000          | \$0                 |
| Heavy Rain          | 10          | 0/0             | \$0                | \$0                 |
| <b>Total</b>        | <b>142</b>  | <b>1/0</b>      | <b>\$1,253,000</b> | <b>\$55,500,000</b> |

Source: NCEI

The following event narratives are provided in the NCEI Storm Events Database and illustrate the impacts of flood events on the Region:

**September 16, 1999** – Heavy rains continued to fall over eastern North Carolina in association with Hurricane Floyd. Widespread heavy rain fell west of a line from Beaufort to Columbia. Doppler Radar estimated 4 to 8 inches of rain with local amounts of 6 to 10 inches. New River Marine Corp Air Station reported a storm total precipitation amount of 8.26 inches. Tropical Storm Dennis left most rivers and streams in eastern North Carolina swollen and near flood stage. The additional runoff from Hurricane Floyd produced some the worst flooding of the century. Many rivers rose to over 15 feet above flood stage.

**September 18, 2000** – Major flooding reported in James City and most of southern Craven county. A section of Old Cherry Point Road washed out. Some townhomes in Havelock also flooded.

**July 27, 2002** – Up to 4-5 inches of rain fall over Morehead City in a 3 hour time period. This caused flooding of many major roads in Morehead City and Atlantic Beach. Numerous vehicles were flooded and abandoned.

**October 8, 2005** – A combination of weather systems including the remnants of Tropical Storm Tammy and low pressure associated with an approaching cold front linked up to cause flooding rains across the area. During a three day period from October 6th through the 8th portions of eastern North Carolina received up to a foot of rainfall. Six to eight inch rainfall totals were common across much of the area. This resulted in flash flooding and widespread flooding across Beaufort, Carteret, Craven, Duplin, Lenoir, Martin, Onslow, Pamlico, and Pitt counties. Many roads across the area were closed due to flooding, and property damage was reported in several counties.

**August 12, 2009** – A nearly stationary line of thunderstorms developed just inland of the coast along the sea breeze during the afternoon of August 12, 2009. Torrential rain occurred for several hours centered near Havelock. Rainfall amounts of 6 to 10 inches were reported in a three to four hour period leading to significant flooding in the Havelock area.

**September 30, 2010** – Torrential rain moved across most of Carteret, Pamlico, Craven, and Beaufort Counties during the late afternoon and evening of September 30th as the remnants of Tropical Storm Nicole moved north across the region. This rain fell on saturated ground from very heavy rain the previous few days. Significant flash flooding developed especially for areas from Emerald Isle and Cape Carteret east toward Morehead City. Rapid water rises washed out several roads in the western portion of Carteret County with some subdivisions briefly cutoff from major roads. Minor flooding of a few residences was reported over the western portion of the county. In Pamlico, flooding occurred along Highway 55 from Bayboro west. A few roads were flooded and closed with minor damage to a few homes. Flooding in Craven affected Vanceboro to New Bern. Many roads were flooded and closed with several homes and businesses flooded with some rescues required. Floods occurred around Washington in Beaufort County, with many roads impassable and several homes and businesses flooded. Many acres of crops were destroyed by the flood waters.

**August 28, 2011** – Hurricane Irene made landfall as a large category 1 hurricane. Due to the large size of the hurricane, strong damaging winds, major storm surge, and flooding rains were experienced across much of eastern North Carolina. Storm surge damages were estimated at 240 million dollars. The highest storm surges of 8-11 feet occurred along the Pamlico Sound, and the lower reaches of the Neuse and Pamlico Rivers on the 27th. Storm total rainfall ranged from 5.2 to 15.74 inches across area with the heaviest rainfall across Pamlico, Beaufort, and Craven counties. There were two indirect fatalities, including one in Beaufort County. A 9-11 foot sound-side surge occurred across eastern Pamlico County and the Pamlico River resulted in extensive damage to structures. Storm total rainfall of 10 to 16 inches caused extensive freshwater flooding. Significant damage occurred to structures and crops.

**October 3-4, 2015** – Low pressure south of eastern North Carolina combined with strong high pressure to the north produced strong onshore flow October 2nd through the 5th. These onshore winds led to locally heavy rain and significant coastal flooding in many areas. Large swells from distant Hurricane Joaquin also enhanced waves along the coast leading to very rough surf. Water levels rose 4.5 to 5.5 feet above normal at times adjacent to the Pamlico Sound flooding many roads and making them impassable. Waterfront roads were also flooded and closed at times in Beaufort and Morehead City, New Bern, and Washington.

**September 14-15, 2018** – Hurricane Florence was a long-lived Cape Verde hurricane and the wettest tropical cyclone on record in the Carolinas. Florence was the sixth named storm, third hurricane, and the first major hurricane of the 2018 Atlantic hurricane season. Hurricane Florence made landfall near

Wrightsville Beach early on Saturday September 15, and weakened further as it slowly moved inland. Florence produced extensive wind damage along the North Carolina coast from Cape Lookout, across Carteret, Onslow, Pender and New Hanover counties. Thousands of downed trees caused widespread power outages to nearly all of eastern North Carolina. The historic legacy of Hurricane Florence will be record breaking storm surge of 9 to 13 feet and widespread devastating rainfall of 20 to 30 inches, locally up to 36 inches, which produced catastrophic and life-threatening flooding. The hardest hit areas included New Bern, Newport, Belhaven, Oriental, North Topsail Beach and Jacksonville, along with southeast Carteret County, or basically south of a line from Kinston to Cedar Island. A storm total rainfall of 34.00 inches was reported in Swansboro, while the NWS office in Newport recorded 25.20 inches. Wind gusts of 106 mph were reported at Cape Lookout with 105 mph at Fort Macon.

**September 22, 2023** – Ophelia developed into a strong tropical storm and moved north over the next couple of days, making landfall during the early morning hours near Emerald Isle, NC. Ophelia brought widespread heavy rainfall, gusty winds, and significant river and storm surge flooding to portions of Eastern North Carolina. One of the more notable impacts with Ophelia was flooding, both from storm surge and from heavy rain / flash flooding. Significant storm surge flooding occurred along the Neuse, Pamlico, and Pungo Rivers.

The Pamlico Sound region has also experienced extensive flooding from storm surge related to hurricanes, tropical storms, and nor’easters. Table 4.46 summarizes all recorded storm surge events from NCEI between 1999 and 2023, which includes 24 event reports across nine days. These events caused over \$127 million in property damage and impacted all counties in the region. Narrative records on storm surge impacts are provided below.

**Table 4.46 - Recorded Storm Surge Events in the Pamlico Sound Region, 1999-2023**

| Date         | Locations   | Event Reports | Deaths/ Injuries | Reported Property Damage |
|--------------|---|---------------|------------------|--------------------------|
| 3/21/2001    | Beaufort Co.  | 1             | 0/0              | \$0                      |
| 2/27/2004    | Carteret (Zone), Craven (Zone), Pamlico (Zone)                  | 3             | 0/0              | \$0                      |
| 4/15/2005    | Carteret (Zone), Craven (Zone), Pamlico (Zone)                  | 3             | 0/0              | \$40,000                 |
| 5/6/2005     | Carteret (Zone), Craven (Zone), Pamlico (Zone)                  | 3             | 0/0              | \$0                      |
| 7/20/2008    | Carteret (Zone)   | 1             | 0/0              | \$0                      |
| 8/26/2011    | Beaufort (Zone), Carteret (Zone), Craven (Zone), Pamlico (Zone) | 3             | 0/0              | \$127,200,000            |
| 8/31/2023    | East Carteret (Zone)  | 1             | 0/0              | \$0                      |
| 9/22/2023    | Southern Craven (Zone)  | 1             | 0/0              | \$0                      |
| 9/23/2023    | Beaufort (Zone), Pamlico (Zone)                                 | 7             | 0/0              | \$0                      |
| <b>Total</b> |   | <b>24</b>     | <b>0/0</b>       | <b>\$127,240,000</b>     |

Source: NCEI

**March 21, 2001** – Strong east-northeast winds caused minor coastal flooding along the Pamlico River in Washington and Belhaven. Numerous roads were closed in Belhaven and Washington. Water reached a few structures along the river in the vicinity of Whichards Beach. Water damage was minimal.

**April 16, 2005** – A Nor’easter affected Eastern North Carolina with persistent strong wind gusts measured from near 40 mph to slightly over 60 mph. This in combination with large ocean swells resulted in sound-side flooding along western portions of the Pamlico sound including the Neuse and Trent Rivers, affecting Craven, Pamlico, and Eastern Carteret counties. Water level rises between 3 to 5 feet resulting in many road closures, and some property damage.

**August 28, 2011** – Hurricane Irene made landfall during the morning of the 27th, near Cape Lookout, as a large category 1 hurricane. Due to the large size of the hurricane, strong damaging winds, major storm surge, and flooding rains were experienced across much of eastern North Carolina. Winds gusting to 90 mph resulted in major structural damage, primarily due to a 7 to 11 foot surge along the Pamlico Sound and Pamlico River. Numerous homes sustained major damage and were swept away in the Jarvis landing residential and Aurora Ferry landing areas. A 9 to 11 foot sound-side surge occurred across eastern Pamlico County. In Carteret County, surges of 4 to 7 feet, highest at South River, flooded numerous homes and Businesses with major structural damage. In Craven County, 8 to 10 foot surges occurred across the lower reaches of the Neuse River at Adams, Clubfoot, Hancock, and Slocum Creeks.

**September 23, 2023** – Hurricane Ophelia caused significant storm surge flooding along the Neuse, Pamlico, and Pungo Rivers. Inundation began in New Bern as strong persistent northeast winds well ahead of Ophelia pushed water up the Neuse and Trent Rivers during the early evening hours. Water levels peaked around 9pm with values around 4 feet above ground level near the New Bern waterfront. In the Arapahoe area the Neuse River rose to a height of around 4.7 feet above ground level along China Grove Rd. In Bayboro, water levels rose to 3 to 4 feet above ground level, while Hobucken observed water level rises between 2 to 3 feet above ground level. Belhaven experienced 3-4 ft above ground level surge. NWS survey teams found 4-5 ft. above ground level storm surge at Belhaven Beach and in the Town of Bath. In Washington Park and Washington, NWS Storm Survey teams found evidence of 5-6 ft above ground level storm surge.

### PROBABILITY OF FUTURE OCCURRENCE

By definition, SFHAs are those areas that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. Properties located in these areas have a 26 percent chance of flooding over the life of a 30-year mortgage. The Shaded X Zone indicates areas that are estimated to be inundated by the flood event having a 0.2-percent chance of being equaled or exceeded in any given year. The SFHA and the Shaded X zone indicate areas of high and moderate risk according to FEMA guidelines; however, this does not mean that flood risk is limited to these areas. The Region is also at risk to other magnitudes of flooding and other types of flooding, such as stormwater floods, storm surge, and other tidal flooding, which have varying probabilities.

According to past records, all counties in the region have between 70% to 100% likelihood of experiencing flooding in any given year. The HMPC felt that based on past events and potential for changes to future flooding, the probability of flooding should be rated as highly likely for the Region as a whole. However, exposure to flood hazards varies across jurisdictions, and probability of flooding is lower in those jurisdictions without any land in the SFHA, which includes Cove City, Dover, and Arapahoe.

*Probability: 4 – Highly Likely*

### CLIMATE CHANGE

Per the Fifth National Climate Assessment, frequency and intensity of heavy precipitation events is expected to increase across the country. Additionally, increased levels of rainfall, temperatures, sea level rise, and land cover change can exacerbate flood risks and are expected to occur throughout the southeast. Therefore, with more rainfall falling in more intense incidents, the region may experience more frequent flash flooding. Increased flooding may also result from more intense tropical cyclone; researchers have noted the occurrence of more intense storms bringing greater rainfall totals, a trend that is expected to continue as ocean and air temperatures rise.

## VULNERABILITY ASSESSMENT

### METHODOLOGIES AND ASSUMPTIONS

Population and property at risk to flooding were estimated using data from the NCEM's IRISK database, compiled in NCEM's Risk Management Tool. Effective FEMA DFIRM data was used to identify flood hazard areas.

As a subset of the building vulnerability analysis, exposure of pre-FIRM structures was also estimated. Table 4.47 below provides the NFIP entry date for each participating jurisdiction, which was used to determine which buildings were constructed pre-FIRM. Pre-FIRM structures are those built prior to the adoption of flood protection building standards and are therefore assumed to be at greater risk to the flood hazard.

**Table 4.47 - NFIP Entry Dates**

| NFIP Entry Date | Jurisdiction  |
|-----------------|---|
| 12/01/72        | Town of Beaufort  |
| 11/22/76        | Town of Washington Park   |
| 02/02/77        | City of Washington  |
| 02/16/77        | Town of Morehead City   |
| 03/15/77        | Town of Atlantic Beach  |
| 04/01/77        | Town of Cape Carteret, Town of Emerald Isle   |
| 05/16/77        | Town of Belhaven  |
| 05/15/78        | Town of Newport   |
| 09/28/79        | Town of Pine Knoll Shores   |
| 05/15/80        | Carteret County (Unincorporated Area), Town of Bogue, Town of Cedar Point                                     |
| 03/04/85        | Town of Indian Beach  |
| 08/05/85        | Town of Pantego, Town of Alliance, Town of Minnesott Beach  |
| 09/04/85        | Pamlico County (Unincorporated Area), Town of Grantsboro  |
| 12/04/85        | Town of Bayboro, Town of Mesic, Town of Oriental, Town of Stonewall, Town of Vandemere                        |
| 01/03/86        | Town of Aurora  |
| 08/19/86        | Town of River Bend  |
| 02/04/87        | Beaufort County (Unincorporated Area), Town of Bath   |
| 05/04/87        | Town of Vanceboro, Craven County (Unincorporated Area), City of Havelock, City of New Bern, Town of Bridgeton |
| 09/08/99        | Town of Trent Woods   |
| 05/15/03        | Town of Chocowinity   |
| 07/16/03        | Town of Peletier  |
| 07/02/04        | Town of Cove City, Town of Dover, Town of Arapahoe  |

Source: Federal Emergency Management Agency Community Status Book Report: Communities Participating in the National Flood Program, August 2013

Pre-FIRM structures are those built before a community's NFIP entry date, while those built after the entry date are post-FIRM. Only year built data was available for buildings rather than exact construction dates, so the following methodology was used to estimate the number of pre-FIRM buildings: If the NFIP entry date for a given community is between January and June, buildings constructed the same year



as the entry date are considered to be post-FIRM (e.g., if the NFIP entry date is 02/01/1991, buildings constructed in 1990 and before are pre-FIRM. Buildings constructed from 1991 to the present are post-FIRM.). If the NFIP entry date is between July and December, then the following year applies for the year built cut-off (e.g., if the NFIP entry date is 12/18/2007, buildings constructed in the year 2007 and before are pre-FIRM, 2008 and newer are post-FIRM).

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### PEOPLE

Flood events pose many threats to public health and safety. While such problems are often not reported, three general types of health hazards accompany floods: physical hazards from the water itself, environmental hazards in the aftermath of the flood, and long-term psychological hazards. These common health and safety hazards are detailed below:

- **Contaminated water:** Floodwaters carry anything that was on the ground that the upstream runoff picked up, including dirt, oil, animal waste, and lawn, farm and industrial chemicals. Pastures and areas where farm animals are kept or where their wastes are stored can contribute polluted waters to the receiving streams. Floodwaters also saturate the ground, which leads to infiltration into sanitary sewer lines, or wastewater treatment plants may be flooded or over loaded. When wastewater treatment plants are flooded, there is nowhere for the sewage to flow. Infiltration and lack of treatment can lead to overloaded sewer lines that can back up into low-lying areas and homes. Even when it is diluted by flood waters, raw sewage can be a breeding ground for bacteria such as E.coli and other disease causing agents. Private sewer and septic systems may also introduce pollutants into floodwaters. Private wells may become contaminated through infiltration of polluted water. Given the many potential sources of contamination, direct or indirect contact with floodwaters poses a significant health risk for contraction of infectious disease.
- **Debris:** During a flood, debris carried by floodwaters can cause physical injury from impact. During the recovery process, people may often need to clear debris out of their properties but may encounter dangers such as sharp materials or rusty nails that pose a risk of tetanus.
- **Unsafe food:** If floodwaters come into contact with food items, that food may no longer be safe for consumption due to the potential contaminants in the floodwaters. Foods stored in cardboard, plastic bags, jars, bottles, and paper packaging may all be subject to contamination. Even if foods don't come into direct contact with floodwaters, the introduction of mold and mildew from flooding may cause foods to spoil faster. Additionally, power outages may cause refrigerated and frozen foods to spoil.
- **Mosquitos and animals:** After most of the water has receded, stagnant pools can become breeding grounds for mosquitoes, which may carry infectious diseases such as West Nile virus or St. Louis encephalitis. Wild animals such as snakes or rodents may be carried by floodwaters or lose their habitat and seek shelter in buildings. Snakes may also be swimming in floodwaters seeking higher ground. People may be at risk for bites or disease if they come in contact with these animals or animal carcasses.
- **Mold and mildew:** Areas of a building that were exposed to excessive moisture can breed mold and mildew. Molds can start to grow in only 24 to 48 hours and will continue to grow without steps to dry out and disinfect the affected surface. Some molds are allergens, while others can produce harmful mycotoxins. Exposure to mold can cause respiratory problems; nasal and sinus congestion; eye, nose, and throat irritation; aches and pains; and effects on the nervous system. Infants, children, immunocompromised individuals, elderly adults, pregnant women, and individuals with respiratory conditions are all at higher risk.
- **Reentering a flooded building:** Health hazards may occur when heating ducts in a forced air system are not properly cleaned after inundation. When the furnace or air conditioner is turned on, the sediments left in the ducts are circulated throughout the building and breathed in by the occupants. If

**SECTION 4: RISK ASSESSMENT**

the public water systems lose pressure, public water supplies may be contaminated, and a boil order may be issued to protect people and animals from contaminated water.

- **Mental stress:** Long-term psychological impacts can result after having been through a flood and seeing one’s home damaged and personal belongings destroyed. The cost and labor needed to repair a flood-damaged home can also put a severe strain on people, especially individuals who were unprepared and uninsured. There is also a long-term problem for those who know that their homes can be flooded again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

Floods can also result in fatalities. Individuals face particularly high risk when driving through flooded streets. NCEI reports one death directly caused by flooding in the Region in the last 25 years.

Table 4.48 details the population at risk from various magnitudes of flood events, according to data from the NCEM IRISK database. Populations counts are summarized by county. Table 4.49 details each jurisdiction’s vulnerability to the 1%-annual-chance flood event. See the plan annexes for more detailed vulnerability information by jurisdiction.

**Table 4.48 – Population Impacted by Flood Event**

| Jurisdiction          | Total Population | Total Population at Risk |               | All Elderly Population | Elderly Population at Risk |             | All Children Population | Children at Risk |             |
|-----------------------|------------------|--------------------------|---------------|------------------------|----------------------------|-------------|-------------------------|------------------|-------------|
|                       |                  | Number                   | % of Total    |                        | Number                     | % of Total  |                         | Number           | % of Total  |
| <b>10-Year Event</b>  |                  |                          |               |                        |                            |             |                         |                  |             |
| Beaufort County       | 46,112           | 3,109                    | 6.7%          | 11,014                 | 743                        | 1.6%        | 2,254                   | 156              | 0.3%        |
| Carteret County       | 78,139           | 7,125                    | 9.1%          | 18,976                 | 1,712                      | 2.2%        | 3,254                   | 306              | 0.4%        |
| Craven County         | 105,692          | 2,815                    | 2.7%          | 21,180                 | 602                        | 0.6%        | 6,467                   | 167              | 0.2%        |
| Pamlico County        | 13,067           | 2,007                    | 15.4%         | 3,945                  | 611                        | 4.7%        | 376                     | 57               | 0.4%        |
| <b>Region Total</b>   | <b>243,010</b>   | <b>15,056</b>            | <b>6.2%</b>   | <b>55,115</b>          | <b>3,668</b>               | <b>1.5%</b> | <b>12,351</b>           | <b>686</b>       | <b>0.3%</b> |
| <b>25-Year Event</b>  |                  |                          |               |                        |                            |             |                         |                  |             |
| Beaufort County       | 46,112           | 5,361                    | 11.6%         | 11,014                 | 1,290                      | 2.8%        | 2,254                   | 261              | 0.6%        |
| Carteret County       | 78,139           | 12,559                   | 16.1%         | 18,976                 | 3,051                      | 3.9%        | 3,254                   | 526              | 0.7%        |
| Craven County         | 105,692          | 8,128                    | 7.7%          | 21,180                 | 1,747                      | 1.7%        | 6,467                   | 479              | 0.5%        |
| Pamlico County        | 13,067           | 3,256                    | 24.9%         | 3,945                  | 990                        | 7.6%        | 376                     | 94               | 0.7%        |
| <b>Region Total</b>   | <b>243,010</b>   | <b>29,304</b>            | <b>12.1 %</b> | <b>55,115</b>          | <b>7,078</b>               | <b>2.9%</b> | <b>12,351</b>           | <b>1,360</b>     | <b>0.6%</b> |
| <b>50-Year Event</b>  |                  |                          |               |                        |                            |             |                         |                  |             |
| Beaufort County       | 46,112           | 6,850                    | 14.9%         | 11,014                 | 1,649                      | 3.6%        | 2,254                   | 334              | 0.7%        |
| Carteret County       | 78,139           | 16,897                   | 21.6%         | 18,976                 | 4,125                      | 5.3%        | 3,254                   | 703              | 0.9%        |
| Craven County         | 105,692          | 12,277                   | 11.6%         | 21,180                 | 2,628                      | 2.5%        | 6,467                   | 724              | 0.7%        |
| Pamlico County        | 13,067           | 4,083                    | 31.2%         | 3,945                  | 1,241                      | 9.5%        | 376                     | 116              | 0.9%        |
| <b>Region Total</b>   | <b>243,010</b>   | <b>40,107</b>            | <b>16.5%</b>  | <b>55,115</b>          | <b>9,643</b>               | <b>4.0%</b> | <b>12,351</b>           | <b>1,877</b>     | <b>0.8%</b> |
| <b>100-Year Event</b> |                  |                          |               |                        |                            |             |                         |                  |             |
| Beaufort County       | 46,112           | 6,850                    | 14.9%         | 11,014                 | 1,649                      | 3.6%        | 2,254                   | 334              | 0.7%        |
| Carteret County       | 78,139           | 16,897                   | 21.6%         | 18,976                 | 4,125                      | 5.3%        | 3,254                   | 703              | 0.9%        |
| Craven County         | 105,692          | 12,277                   | 11.6%         | 21,180                 | 2,628                      | 2.5%        | 6,467                   | 724              | 0.7%        |
| Pamlico County        | 13,067           | 4,869                    | 37.3%         | 3,945                  | 1,480                      | 11.3%       | 376                     | 138              | 1.1%        |
| <b>Region Total</b>   | <b>243,010</b>   | <b>51,942</b>            | <b>21.4%</b>  | <b>55,115</b>          | <b>12,465</b>              | <b>5.1%</b> | <b>12,351</b>           | <b>2,446</b>     | <b>1.0%</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction          | Total Population | Total Population at Risk |              | All Elderly Population | Elderly Population at Risk |             | All Children Population | Children at Risk |             |
|-----------------------|------------------|--------------------------|--------------|------------------------|----------------------------|-------------|-------------------------|------------------|-------------|
|                       |                  | Number                   | % of Total   |                        | Number                     | % of Total  |                         | Number           | % of Total  |
| <b>500-Year Event</b> |                  |                          |              |                        |                            |             |                         |                  |             |
| Beaufort County       | 46,112           | 9,894                    | 21.5%        | 11,014                 | 2,379                      | 5.2%        | 2,254                   | 482              | 1.0%        |
| Carteret County       | 78,139           | 25,939                   | 33.2%        | 18,976                 | 6,391                      | 8.2%        | 3,254                   | 1,073            | 1.4%        |
| Craven County         | 105,692          | 22,335                   | 21.1%        | 21,180                 | 4,809                      | 4.6%        | 6,467                   | 1,301            | 1.2%        |
| Pamlico County        | 13,067           | 5,749                    | 44.0%        | 3,945                  | 1,746                      | 13.4%       | 376                     | 162              | 1.2%        |
| <b>Region Total</b>   | <b>243,010</b>   | <b>63,917</b>            | <b>26.3%</b> | <b>55,115</b>          | <b>15,325</b>              | <b>6.3%</b> | <b>12,351</b>           | <b>3,018</b>     | <b>1.2%</b> |

Source: NCEM Risk Management Tool

**Table 4.49 - Population Impacted by the 100-Year Flood Event**

| Jurisdiction                   | Total Population | Total Population at Risk |              | All Elderly Population | Elderly Population at Risk |             | All Children Population | Children at Risk |             |
|--------------------------------|------------------|--------------------------|--------------|------------------------|----------------------------|-------------|-------------------------|------------------|-------------|
|                                |                  | Number                   | % of Total   |                        | Number                     | % of Total  |                         | Number           | % of Total  |
| <b>Beaufort</b>                |                  |                          |              |                        |                            |             |                         |                  |             |
| Unincorporated Beaufort County | 33,905           | 5,793                    | 17.1%        | 8,207                  | 1,402                      | 4.1%        | 1,523                   | 260              | 0.8%        |
| City of Washington             | 11,124           | 2,167                    | 19.5%        | 2,514                  | 490                        | 4.4%        | 684                     | 133              | 1.2%        |
| Town of Aurora                 | 104              | 25                       | 24.0%        | 27                     | 7                          | 6.7%        | 4                       | 1                | 1.0%        |
| Town of Bath                   | 242              | 4                        | 1.7%         | 69                     | 1                          | 0.4%        | 13                      | 0                | 0.0%        |
| Town of Belhaven               | 441              | 422                      | 95.7%        | 129                    | 123                        | 27.9%       | 15                      | 14               | 3.2%        |
| Town of Chocowinity            | 116              | 0                        | 0.0%         | 25                     | 0                          | 0.0%        | 5                       | 0                | 0.0%        |
| Town of Pantego                | 12               | 3                        | 25.0%        | 2                      | 0                          | 0.0%        | 1                       | 0                | 0.0%        |
| Town of Washington Park        | 168              | 69                       | 41.1%        | 41                     | 17                         | 10.1%       | 9                       | 4                | 2.4%        |
| <b>Subtotal Beaufort</b>       | <b>46,112</b>    | <b>8,483</b>             | <b>18.4%</b> | <b>11,014</b>          | <b>2,040</b>               | <b>4.4%</b> | <b>2,254</b>            | <b>412</b>       | <b>0.9%</b> |
| <b>Carteret</b>                |                  |                          |              |                        |                            |             |                         |                  |             |
| Unincorporated Carteret County | 34,687           | 13,531                   | 39.0%        | 8,258                  | 3,221                      | 9.3%        | 1,409                   | 550              | 1.6%        |
| Town of Atlantic Beach         | 856              | 301                      | 35.2%        | 349                    | 123                        | 14.4%       | 6                       | 2                | 0.2%        |
| Town of Beaufort               | 3,815            | 1,375                    | 36.0%        | 1,094                  | 394                        | 10.3%       | 141                     | 51               | 1.3%        |
| Town of Bogue                  | 795              | 81                       | 10.2%        | 140                    | 14                         | 1.8%        | 42                      | 4                | 0.5%        |
| Town of Cape Carteret          | 1,647            | 248                      | 15.1%        | 385                    | 58                         | 3.5%        | 85                      | 13               | 0.8%        |
| Town of Cedar Point            | 2,174            | 288                      | 13.2%        | 516                    | 68                         | 3.1%        | 112                     | 15               | 0.7%        |
| Town of Emerald Isle           | 3,275            | 341                      | 10.4%        | 1,005                  | 105                        | 3.2%        | 116                     | 12               | 0.4%        |
| Town of Indian Beach           | 340              | 150                      | 44.1%        | 140                    | 62                         | 18.2%       | 8                       | 4                | 1.2%        |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | Total Population | Total Population at Risk |              | All Elderly Population | Elderly Population at Risk |              | All Children Population | Children at Risk |               |
|-------------------------------|------------------|--------------------------|--------------|------------------------|----------------------------|--------------|-------------------------|------------------|---------------|
|                               |                  | Number                   | % of Total   |                        | Number                     | % of Total   |                         | Number           | % of Total    |
| Town of Morehead City         | 19,390           | 4,104                    | 21.2%        | 4,680                  | 991                        | 5.1%         | 979                     | 207              | 1.1%          |
| Town of Newport               | 9,170            | 869                      | 9.5%         | 1,730                  | 164                        | 1.8%         | 303                     | 29               | 0.3%          |
| Town of Peletier              | 617              | 51                       | 8.3%         | 113                    | 9                          | 1.5%         | 21                      | 2                | 0.3%          |
| Town of Pine Knoll Shores     | 1,373            | 231                      | 16.8%        | 566                    | 95                         | 6.9%         | 32                      | 5                | 0.4%          |
| <b>Subtotal Carteret</b>      | <b>78,139</b>    | <b>21,570</b>            | <b>27.6%</b> | <b>18,976</b>          | <b>5,304</b>               | <b>6.8%</b>  | <b>3,254</b>            | <b>894</b>       | <b>1.1%</b>   |
| <b>Craven</b>                 |                  |                          |              |                        |                            |              |                         |                  |               |
| Unincorporated Craven County  | 64,150           | 9,558                    | 14.9%        | 12,919                 | 1,925                      | 3.0%         | 3,779                   | 563              | 0.9%          |
| City of Havelock              | 8,226            | 42                       | 0.5%         | 425                    | 2                          | 0.0%         | 775                     | 4                | 0.0%          |
| City of New Bern              | 26,554           | 6,190                    | 23.3%        | 5,735                  | 1,337                      | 5.0%         | 1,705                   | 397              | 1.5%          |
| Town of Bridgeton             | 147              | 118                      | 80.3%        | 28                     | 23                         | 15.6%        | 11                      | 9                | 6.1%          |
| Town of Cove City             | 21               | 0                        | 0.0%         | 5                      | 0                          | 0.0%         | 3                       | 0                | 0.0%          |
| Town of Dover                 | 31               | 0                        | 0.0%         | 8                      | 0                          | 0.0%         | 4                       | 0                | 0.0%          |
| Town of River Bend            | 1,852            | 496                      | 26.8%        | 616                    | 165                        | 8.9%         | 34                      | 9                | 0.5%          |
| Town of Trent Woods           | 4,633            | 613                      | 13.2%        | 1,425                  | 188                        | 4.1%         | 153                     | 20               | 0.4%          |
| Town of Vanceboro             | 78               | 3                        | 3.8%         | 19                     | 1                          | 1.3%         | 3                       | 0                | 0.0%          |
| <b>Subtotal Craven</b>        | <b>105,692</b>   | <b>17,020</b>            | <b>16.1%</b> | <b>21,180</b>          | <b>3,641</b>               | <b>3.4%</b>  | <b>6,467</b>            | <b>1,002</b>     | <b>0.9%</b>   |
| <b>Pamlico</b>                |                  |                          |              |                        |                            |              |                         |                  |               |
| Unincorporated Pamlico County | 11,911           | 4,568                    | 38.4%        | 3,592                  | 1,378                      | 11.6%        | 331                     | 127              | 1.1%          |
| Town of Alliance              | 159              | 29                       | 18.2%        | 37                     | 7                          | 4.4%         | 8                       | 1                | 0.6%          |
| Town of Arapahoe              | 118              | 0                        | 0.0%         | 37                     | 0                          | 0.0%         | 5                       | 0                | 0.0%          |
| Town of Bayboro               | 144              | 63                       | 43.8%        | 34                     | 15                         | 10.4%        | 7                       | 3                | 2.1%          |
| Town of Grantsboro            | 198              | 2                        | 1.0%         | 44                     | 0                          | 0.0%         | 7                       | 0                | 0.0%          |
| Town of Mesic                 | 17               | 15                       | 88.2%        | 5                      | 4                          | 23.5%        | 0                       | 0                | 0.0%          |
| Town of Minnesott Beach       | 128              | 1                        | 0.8%         | 40                     | 0                          | 0.0%         | 4                       | 0                | 0.0%          |
| Town of Oriental              | 295              | 140                      | 47.5%        | 116                    | 55                         | 18.6%        | 12                      | 6                | 2.0%          |
| Town of Stonewall             | 73               | 34                       | 46.6%        | 32                     | 15                         | 20.5%        | 2                       | 1                | 1.4%          |
| Town of Vandemere             | 24               | 17                       | 70.8%        | 8                      | 6                          | 25.0%        | 0                       | 0                | 0.0%          |
| <b>Subtotal Pamlico</b>       | <b>13,067</b>    | <b>4,869</b>             | <b>37.3%</b> | <b>3,945</b>           | <b>1,480</b>               | <b>11.3%</b> | <b>376</b>              | <b>138</b>       | <b>1.1%</b>   |
| <b>Region Total</b>           | <b>243,010</b>   | <b>51,942</b>            | <b>21.4%</b> | <b>55,115</b>          | <b>12,465</b>              | <b>5.1%</b>  | <b>12,351</b>           | <b>2,446</b>     | <b>51,942</b> |

Source: NCEM Risk Management Tool

**PROPERTY**

Residential, commercial, and public buildings, as well as critical infrastructure such as transportation, water, energy, and communication systems may be damaged or destroyed by flood waters. The increased number of flood days and general encroachment of shoreline associated with sea level rise will likely cause additional flood-related property damage, although it is unclear exactly what this will look like. Homes, businesses, and vehicles will be susceptible to increased water damage. Homes within the areas that may be inundated will potentially be uninhabitable. Additionally, rising seas, and associated increased flood days, can overwhelm and undermine the effectiveness of stormwater drainage system and other infrastructure, such as roads and bridges.

Properties within the SFHA are estimated to have a one percent probability of being exposed to flooding equaling or exceeding the base flood during any given year. Mortgage lenders require that owners of properties with federally backed mortgages located within SFHAs maintain flood insurance policies on their properties. Consequently, newer and recently purchased properties in the community are typically insured against flooding. Regardless of insurance status, pre-FIRM properties, those built before the community’s first FIRM, may be more vulnerable to flood damage because they were built prior to the enforcement of flood damage prevention regulations. These properties may be a priority for mitigation. Another mitigation priority is critical facilities located in high risk flood zones.

Table 4.50 provides counts of critical facilities by FEMA lifeline located in the SFHA and the Shaded X Zone. Details on critical facility vulnerability can be found in the community annexes.

**Table 4.50 – Critical Facility Exposure to 1%-Annual-Chance Flood by Flood Zone**

| Facility Type            | Critical Facility Count by Flood Zone |          |               | Total Facilities at Risk |
|--------------------------|---------------------------------------|----------|---------------|--------------------------|
|                          | AE Zone                               | VE Zone  | Shaded X Zone |                          |
| Communications           | 6                                     | 0        | 2             | 8                        |
| Energy                   | 0                                     | 0        | 1             | 1                        |
| Food, Hydration, Shelter | 26                                    | 0        | 24            | 50                       |
| Health and Medical       | 14                                    | 0        | 4             | 18                       |
| Safety and Security      | 42                                    | 0        | 21            | 63                       |
| Transportation           | 1                                     | 0        | 18            | 19                       |
| Water Systems            | 72                                    | 2        | 40            | 114                      |
| <b>Total</b>             | <b>161</b>                            | <b>2</b> | <b>110</b>    | <b>273</b>               |

Table 4.51 summarizes critical facility exposure to storm surge by FEMA lifeline and storm category according to NOAA SLOSH inundation mapping. Facilities are counted according the lowest category storm that could cause impacts based on inundation extent. There are 311 critical facilities that do not fall within any storm surge inundation area. Note that this exposure analysis does not account for facility finished floor elevation. A facility might be located within an estimated storm surge extent without being damaged by flooding.

**Table 4.51 – Critical Facility Exposure to Storm Surge by Storm Category**

| FEMA Lifeline            | Storm Intensity |            |            |            |            |
|--------------------------|-----------------|------------|------------|------------|------------|
|                          | Category 1      | Category 2 | Category 3 | Category 4 | Category 5 |
| Communications           | 3               | 5          | 5          | 3          | 0          |
| Energy                   | 0               | 2          | 0          | 0          | 0          |
| Food, Hydration, Shelter | 4               | 40         | 67         | 22         | 24         |
| Health and Medical       | 6               | 27         | 20         | 10         | 20         |
| Safety and Security      | 20              | 53         | 34         | 26         | 14         |

**SECTION 4: RISK ASSESSMENT**

| FEMA Lifeline  | Storm Intensity |            |            |            |            |
|----------------|-----------------|------------|------------|------------|------------|
|                | Category 1      | Category 2 | Category 3 | Category 4 | Category 5 |
| Transportation | 0               | 19         | 0          | 0          | 0          |
| Water Systems  | 39              | 71         | 48         | 32         | 28         |
| <b>Total</b>   | <b>72</b>       | <b>217</b> | <b>174</b> | <b>93</b>  | <b>86</b>  |

Table 4.52 lists critical facilities exposed to flooding from one, two, and three feet of sea level rise. Note that this exposure analysis does not account for facility finished floor elevation. A facility might be located within an estimated sea level rise extent without being damaged by flooding.

**Table 4.52 – Critical Facility Exposure to Sea Level Rise**

| FEMA Lifeline                | Facility Type/Description                             | Address  |
|------------------------------|---|--|
| Communications               | Carteret County Emergency Communications Tower        | 120 Rossevelt Blvd   |
| <b>1 Foot Sea Level Rise</b> |   |  |
| Water Systems                | Beaufort County – Well #2A                            | Edgewood Drive @ the WTP   |
| Water Systems                | Beaufort County – Well #3                             | NC Hwy 33 at Choco Recreation Complex  |
| <b>2 Foot Sea Level Rise</b> |   |  |
| Water Systems                | Beaufort County – Well #1                             | Behind marina building   |
| Water Systems                | Carteret County – Well #1                             | Back of campground between shed and site 55  |
| Water Systems                | Carteret County – Well #1                             | In wellhouse in front of treatment room  |
| Water Systems                | Carteret County – Well #1                             | In wellhouse behind the generator building   |
| Health & Medical             | Nursing Home Facility – Snug Harbor on Nelson Bay     | 272 Highway 70 East  |
| Communications               | Carteret County Emergency Communications Tower        | 1710 W. Fort Macon Rd  |
| Safety & Security            | Belhaven Police Department                            | 215 East Main Street   |
| <b>3 Foot Sea Level Rise</b> |   |  |
| Water Systems                | Carteret County – Well #2                             | Well farthest from facility- well inside pump house old well#2 abandoned and located 75' south of pump house |
| Water Systems                | Carteret County – Well #2 NORTH                       | Off pintail ln, dirt access rd on east side  |
| Water Systems                | Carteret County – Well #1                             | Well is about 50' north of the bathhouse   |
| Safety & Security            | North River and Laurel Road Volunteer Fire Department | 893 Merrimon Road  |
| Water Systems                | Stately Pines WWTP                                    |  |
| Water Systems                | Town of Atlantic Beach – Well #5                      | West end elevated storage tank   |
| Water Systems                | Town of Beaufort – Sewer Pump Station                 |  |
| Water Systems                | Town of Beaufort – Sewer Pump Station                 |  |
| Safety & Security            | Goose Creek Island Volunteer Fire Department          | 5212 Lowland Road  |

**SECTION 4: RISK ASSESSMENT**

| <b>FEMA Lifeline</b>     | <b>Facility Type/Description</b>                      | <b>Address</b>                      |
|--------------------------|---|-------------------------------------|
| Water Systems            | Town of Beaufort - Sewer Pump Station                 |                                     |
| Safety & Security        | Lynn Eury Park + Police/Fire Dock                     |                                     |
| Water Systems            | Beaufort County - Well #11                            | 7206 Canal Street                   |
| Food, Hydration, Shelter | Hog Lagoon  |                                     |
| Health & Medical         | CareFocus Home Care                                   | 222 West Stewart Parkway, Suite 100 |
| Health & Medical         | Pungo District Hospital Corporation                   | 202 East Water Street               |
| Health & Medical         | Pungo District Hospital                               | 202 E. Water Street                 |
| Food, Hydration, Shelter | Pungo Christian Academy                               | 983 West Main Street                |
| Health & Medical         | Nursing Home Facility - Harborview Health Care Center | 812 Shepard Street                  |

Table 4.53 details the property at risk and loss estimates from different magnitudes of flood events, according to data from the NCEM IRISK database. Table 4.54 details the property at risk and loss estimates from the 1%-annual-chance flood event for all jurisdictions. More details on vulnerability by jurisdiction are provided in the jurisdictional annexes.

Damage estimates for the 1% annual chance flood even total \$350,569,969 across the region, which equates to a loss ratio of 1.5 percent. The loss ratio is the damage estimate divided by the total potential exposure (i.e., total value of all buildings in the planning area), displayed as a percentage of value at risk. FEMA considers loss ratios greater than 10% to be significant and an indicator a community may have more difficulties recovering from an event. It should be noted that the loss estimates from IRISK only account for damage to buildings and could be underestimated.

**SECTION 4: RISK ASSESSMENT**

**Table 4.53 - Buildings Impacted by Flood Event**

| Jurisdiction                | All Buildings  | Number of Pre-FIRM Buildings at Risk |             | Residential Buildings at Risk |              |                      | Commercial Buildings at Risk |             |                     | Public Buildings at Risk |             |                     | Total Buildings at Risk |              |                      |
|-----------------------------|----------------|--------------------------------------|-------------|-------------------------------|--------------|----------------------|------------------------------|-------------|---------------------|--------------------------|-------------|---------------------|-------------------------|--------------|----------------------|
|                             | Num            | Num                                  | % of Total  | Num                           | % of Total   | Estimated Damages    | Num                          | % of Total  | Estimated Damages   | Num                      | % of Total  | Estimated Damages   | Num                     | % of Total   | Estimated Damages    |
| <b>10-Year Flood Event</b>  |                |                                      |             |                               |              |                      |                              |             |                     |                          |             |                     |                         |              |                      |
| Beaufort County             | 29,356         | 61                                   | 0.2%        | 1,855                         | 6.3%         | \$3,600,905          | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 1,855                   | 6.3%         | \$3,600,905          |
| Carteret County             | 70,090         | 1,735                                | 2.5%        | 5,290                         | 7.5%         | \$26,159,881         | 100                          | 0.1%        | \$1,530,477         | 9                        | 0.0%        | \$175,488           | 5,399                   | 7.7%         | \$27,865,846         |
| Craven County               | 48,254         | 778                                  | 1.6%        | 1,149                         | 2.4%         | \$1,882,565          | 1                            | 0.0%        | \$91                | 0                        | 0.0%        | \$0                 | 1,150                   | 2.4%         | \$1,882,656          |
| Pamlico County              | 10,920         | 1,072                                | 9.8%        | 1,488                         | 13.6%        | \$5,452,282          | 45                           | 0.4%        | \$346,291           | 3                        | 0.0%        | \$81,772            | 1,536                   | 14.1%        | \$5,880,344          |
| <b>Region Total</b>         | <b>158,620</b> | <b>3,646</b>                         | <b>2.3%</b> | <b>9,782</b>                  | <b>6.2%</b>  | <b>\$37,095,633</b>  | <b>146</b>                   | <b>0.1%</b> | <b>\$1,876,859</b>  | <b>12</b>                | <b>0.0%</b> | <b>\$257,260</b>    | <b>9,940</b>            | <b>6.3%</b>  | <b>\$39,229,751</b>  |
| <b>25-Year Flood Event</b>  |                |                                      |             |                               |              |                      |                              |             |                     |                          |             |                     |                         |              |                      |
| Beaufort County             | 29,356         | 122                                  | 0.4%        | 3,348                         | 11.4%        | \$7,267,556          | 3                            | 0.0%        | \$5,878             | 0                        | 0.0%        | \$0                 | 3,351                   | 11.4%        | \$7,273,434          |
| Carteret County             | 70,090         | 3,050                                | 4.4%        | 10,075                        | 14.4%        | \$63,705,814         | 156                          | 0.2%        | \$2,936,557         | 14                       | 0.0%        | \$373,946           | 10,245                  | 14.6%        | \$67,016,319         |
| Craven County               | 48,254         | 2,219                                | 4.6%        | 3,356                         | 7.0%         | \$7,695,538          | 9                            | 0.0%        | \$8,483             | 1                        | 0.0%        | \$1,278,588         | 3,366                   | 7.0%         | \$8,982,609          |
| Pamlico County              | 10,920         | 1,590                                | 14.6%       | 2,344                         | 21.5%        | \$12,451,773         | 85                           | 0.8%        | \$864,966           | 10                       | 0.1%        | \$182,068           | 2,439                   | 22.3%        | \$13,498,808         |
| <b>Region Total</b>         | <b>158,620</b> | <b>6,981</b>                         | <b>4.4%</b> | <b>19,123</b>                 | <b>12.1%</b> | <b>\$91,120,681</b>  | <b>253</b>                   | <b>0.2%</b> | <b>\$3,815,884</b>  | <b>25</b>                | <b>0.0%</b> | <b>\$1,834,602</b>  | <b>19,401</b>           | <b>12.2%</b> | <b>\$96,771,170</b>  |
| <b>50-Year Flood Event</b>  |                |                                      |             |                               |              |                      |                              |             |                     |                          |             |                     |                         |              |                      |
| Beaufort County             | 29,356         | 162                                  | 0.6%        | 4,264                         | 14.5%        | \$10,494,712         | 24                           | 0.1%        | \$29,833            | 2                        | 0.0%        | \$6,893             | 4,290                   | 14.6%        | \$10,531,438         |
| Carteret County             | 70,090         | 4,051                                | 5.8%        | 13,789                        | 19.7%        | \$107,886,675        | 254                          | 0.4%        | \$4,874,516         | 27                       | 0.0%        | \$618,127           | 14,070                  | 20.1%        | \$113,379,317        |
| Craven County               | 48,254         | 3,353                                | 6.9%        | 5,034                         | 10.4%        | \$18,486,546         | 46                           | 0.1%        | \$209,184           | 6                        | 0.0%        | \$3,207,403         | 5,086                   | 10.5%        | \$21,903,131         |
| Pamlico County              | 10,920         | 1,918                                | 17.6%       | 2,908                         | 26.6%        | \$17,824,921         | 106                          | 1.0%        | \$1,229,428         | 16                       | 0.1%        | \$283,853           | 3,030                   | 27.7%        | \$19,338,201         |
| <b>Region Total</b>         | <b>158,620</b> | <b>9,484</b>                         | <b>6.0%</b> | <b>25,995</b>                 | <b>16.4%</b> | <b>\$154,692,854</b> | <b>430</b>                   | <b>0.3%</b> | <b>\$6,342,961</b>  | <b>51</b>                | <b>0.0%</b> | <b>\$4,116,276</b>  | <b>26,476</b>           | <b>16.7%</b> | <b>\$165,152,087</b> |
| <b>100-Year Flood Event</b> |                |                                      |             |                               |              |                      |                              |             |                     |                          |             |                     |                         |              |                      |
| Beaufort County             | 29,356         | 210                                  | 0.7%        | 5,206                         | 17.7%        | \$22,498,326         | 83                           | 0.3%        | \$329,020           | 3                        | 0.0%        | \$34,500            | 5,292                   | 18.0%        | \$22,861,847         |
| Carteret County             | 70,090         | 5,434                                | 7.8%        | 17,944                        | 25.6%        | \$211,457,553        | 645                          | 0.9%        | \$13,628,730        | 109                      | 0.2%        | \$2,454,216         | 18,698                  | 26.7%        | \$227,540,501        |
| Craven County               | 48,254         | 4,659                                | 9.7%        | 6,924                         | 14.3%        | \$49,022,513         | 148                          | 0.3%        | \$2,772,420         | 28                       | 0.1%        | \$18,841,174        | 7,100                   | 14.7%        | \$70,636,106         |
| Pamlico County              | 10,920         | 2,227                                | 20.4%       | 3,465                         | 31.7%        | \$27,007,794         | 149                          | 1.4%        | \$2,019,058         | 21                       | 0.2%        | \$504,663           | 3,635                   | 33.3%        | \$29,531,515         |
| <b>Region Total</b>         | <b>158,620</b> | <b>12,530</b>                        | <b>7.9%</b> | <b>33,539</b>                 | <b>21.1%</b> | <b>\$309,986,186</b> | <b>1,025</b>                 | <b>0.6%</b> | <b>\$18,749,228</b> | <b>161</b>               | <b>0.1%</b> | <b>\$21,834,553</b> | <b>34,725</b>           | <b>21.9%</b> | <b>\$350,569,969</b> |



**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                | All Buildings  |               | Number of Pre-FIRM Buildings at Risk |               | Residential Buildings at Risk |                      |              | Commercial Buildings at Risk |                     |            | Public Buildings at Risk |                     |               | Total Buildings at Risk |                      |  |
|-----------------------------|----------------|---------------|--------------------------------------|---------------|-------------------------------|----------------------|--------------|------------------------------|---------------------|------------|--------------------------|---------------------|---------------|-------------------------|----------------------|--|
|                             | Num            | Num           | % of Total                           | Num           | % of Total                    | Estimated Damages    | Num          | % of Total                   | Estimated Damages   | Num        | % of Total               | Estimated Damages   | Num           | % of Total              | Estimated Damages    |  |
| <b>500-Year Flood Event</b> |                |               |                                      |               |                               |                      |              |                              |                     |            |                          |                     |               |                         |                      |  |
| Beaufort County             | 29,356         | 254           | 0.9%                                 | 6,032         | 20.5%                         | \$70,905,258         | 245          | 0.8%                         | \$3,742,792         | 37         | 0.1%                     | \$1,024,332         | 6,314         | 21.5%                   | \$75,672,381         |  |
| Carteret County             | 70,090         | 6,574         | 9.4%                                 | 21,695        | 31.0%                         | \$465,823,592        | 1,109        | 1.6%                         | \$39,642,692        | 235        | 0.3%                     | \$12,942,176        | 23,039        | 32.9%                   | \$518,408,462        |  |
| Craven County               | 48,254         | 6,064         | 12.6%                                | 9,071         | 18.8%                         | \$123,519,847        | 371          | 0.8%                         | \$12,150,937        | 69         | 0.1%                     | \$36,597,754        | 9,511         | 19.7%                   | \$172,268,537        |  |
| Pamlico County              | 10,920         | 2,629         | 24.1%                                | 4,149         | 38.0%                         | \$54,398,590         | 246          | 2.3%                         | \$4,576,213         | 31         | 0.3%                     | \$1,020,233         | 4,426         | 40.5%                   | \$59,995,035         |  |
| <b>Region Total</b>         | <b>158,620</b> | <b>15,521</b> | <b>9.8%</b>                          | <b>40,947</b> | <b>25.8%</b>                  | <b>\$714,647,287</b> | <b>1,971</b> | <b>1.2%</b>                  | <b>\$60,112,634</b> | <b>372</b> | <b>0.2%</b>              | <b>\$51,584,495</b> | <b>43,290</b> | <b>27.3%</b>            | <b>\$826,344,415</b> |  |

Source: NCEM Risk Management Tool

**Table 4.54 - Buildings Impacted by the 100-Year Flood Event**

| Jurisdiction                   | All Buildings |     | Number of Pre-FIRM Buildings at Risk |       | Residential Buildings at Risk |                   |     | Commercial Buildings at Risk |                   |     | Public Buildings at Risk |                   |       | Total Buildings at Risk |                   |  |
|--------------------------------|---------------|-----|--------------------------------------|-------|-------------------------------|-------------------|-----|------------------------------|-------------------|-----|--------------------------|-------------------|-------|-------------------------|-------------------|--|
|                                | Num           | Num | % of Total                           | Num   | % of Total                    | Estimated Damages | Num | % of Total                   | Estimated Damages | Num | % of Total               | Estimated Damages | Num   | % of Total              | Estimated Damages |  |
| <b>Beaufort</b>                |               |     |                                      |       |                               |                   |     |                              |                   |     |                          |                   |       |                         |                   |  |
| Unincorporated Beaufort County | 20,577        | 146 | 0.7%                                 | 3,106 | 15.1%                         | \$15,432,718      | 29  | 0.1%                         | \$120,404         | 0   | 0.0%                     | \$0               | 3,135 | 15.2%                   | \$15,553,123      |  |
| City of Washington             | 5,790         | 23  | 0.4%                                 | 951   | 16.4%                         | \$3,498,260       | 30  | 0.5%                         | \$167,018         | 1   | 0.0%                     | \$13,099          | 982   | 17.0%                   | \$3,678,377       |  |
| Town of Aurora                 | 579           | 9   | 1.6%                                 | 111   | 19.2%                         | \$326,305         | 0   | 0.0%                         | \$0               | 1   | 0.2%                     | \$15,071          | 112   | 19.3%                   | \$341,376         |  |
| Town of Bath                   | 561           | 0   | 0.0%                                 | 7     | 1.2%                          | \$14,157          | 0   | 0.0%                         | \$0               | 0   | 0.0%                     | \$0               | 7     | 1.2%                    | \$14,157          |  |
| Town of Belhaven               | 1,087         | 25  | 2.3%                                 | 914   | 84.1%                         | \$2,960,583       | 24  | 2.2%                         | \$41,598          | 1   | 0.1%                     | \$6,330           | 939   | 86.4%                   | \$3,008,511       |  |
| Town of Chocowinity            | 398           | 0   | 0.0%                                 | 0     | 0.0%                          | \$0               | 0   | 0.0%                         | \$0               | 0   | 0.0%                     | \$0               | 0     | 0.0%                    | \$0               |  |
| Town of Pantego                | 132           | 4   | 3.0%                                 | 27    | 20.5%                         | \$53,120          | 0   | 0.0%                         | \$0               | 0   | 0.0%                     | \$0               | 27    | 20.5%                   | \$53,120          |  |
| Town of Washington Park        | 232           | 3   | 1.3%                                 | 90    | 38.8%                         | \$213,183         | 0   | 0.0%                         | \$0               | 0   | 0.0%                     | \$0               | 90    | 38.8%                   | \$213,183         |  |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                   | All Buildings |              | Number of Pre-FIRM Buildings at Risk |               | Residential Buildings at Risk |                      |            | Commercial Buildings at Risk |                     |            | Public Buildings at Risk |                    |               | Total Buildings at Risk |                      |  |
|--------------------------------|---------------|--------------|--------------------------------------|---------------|-------------------------------|----------------------|------------|------------------------------|---------------------|------------|--------------------------|--------------------|---------------|-------------------------|----------------------|--|
|                                | Num           | Num          | % of Total                           | Num           | % of Total                    | Estimated Damages    | Num        | % of Total                   | Estimated Damages   | Num        | % of Total               | Estimated Damages  | Num           | % of Total              | Estimated Damages    |  |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>210</b>   | <b>0.7%</b>                          | <b>5,206</b>  | <b>17.7%</b>                  | <b>\$22,498,326</b>  | <b>83</b>  | <b>0.3%</b>                  | <b>\$329,020</b>    | <b>3</b>   | <b>0.0%</b>              | <b>\$34,500</b>    | <b>5,292</b>  | <b>18.0%</b>            | <b>\$22,861,847</b>  |  |
| <b>Carteret</b>                |               |              |                                      |               |                               |                      |            |                              |                     |            |                          |                    |               |                         |                      |  |
| Unincorporated Carteret County | 29,284        | 2,485        | 8.5%                                 | 10,542        | 36.0%                         | \$95,101,545         | 274        | 0.9%                         | \$4,928,768         | 48         | 0.2%                     | \$1,535,350        | 10,864        | 37.1%                   | \$101,565,663        |  |
| Town of Atlantic Beach         | 4,141         | 629          | 15.2%                                | 1,375         | 33.2%                         | \$21,547,848         | 66         | 1.6%                         | \$2,140,865         | 3          | 0.1%                     | \$93,698           | 1,444         | 34.9%                   | \$23,782,412         |  |
| Town of Beaufort               | 4,605         | 754          | 16.4%                                | 1,488         | 32.3%                         | \$11,427,780         | 56         | 1.2%                         | \$829,202           | 6          | 0.1%                     | \$365,534          | 1,550         | 33.7%                   | \$12,622,516         |  |
| Town of Bogue                  | 642           | 8            | 1.2%                                 | 55            | 8.6%                          | \$1,129,102          | 0          | 0.0%                         | \$0                 | 0          | 0.0%                     | \$0                | 55            | 8.6%                    | \$1,129,102          |  |
| Town of Cape Carteret          | 1,763         | 57           | 3.2%                                 | 232           | 13.2%                         | \$4,282,009          | 0          | 0.0%                         | \$0                 | 2          | 0.1%                     | \$30,971           | 234           | 13.3%                   | \$4,312,980          |  |
| Town of Cedar Point            | 1,915         | 86           | 4.5%                                 | 227           | 11.9%                         | \$2,840,103          | 14         | 0.7%                         | \$275,804           | 1          | 0.1%                     | \$44,950           | 242           | 12.6%                   | \$3,160,857          |  |
| Town of Emerald Isle           | 7,154         | 66           | 0.9%                                 | 719           | 10.1%                         | \$19,753,722         | 4          | 0.1%                         | \$66,847            | 0          | 0.0%                     | \$0                | 723           | 10.1%                   | \$19,820,569         |  |
| Town of Indian Beach           | 1,138         | 384          | 33.7%                                | 475           | 41.7%                         | \$1,116,991          | 7          | 0.6%                         | \$90,962            | 0          | 0.0%                     | \$0                | 482           | 42.4%                   | \$1,207,954          |  |
| Town of Morehead City          | 10,811        | 779          | 7.2%                                 | 1,943         | 18.0%                         | \$42,960,921         | 212        | 2.0%                         | \$4,740,210         | 45         | 0.4%                     | \$254,706          | 2,200         | 20.3%                   | \$47,955,837         |  |
| Town of Newport                | 5,441         | 87           | 1.6%                                 | 458           | 8.4%                          | \$6,766,087          | 9          | 0.2%                         | \$507,363           | 3          | 0.1%                     | \$126,506          | 470           | 8.6%                    | \$7,399,956          |  |
| Town of Peletier               | 943           | 14           | 1.5%                                 | 71            | 7.5%                          | \$1,092,946          | 0          | 0.0%                         | \$0                 | 0          | 0.0%                     | \$0                | 71            | 7.5%                    | \$1,092,946          |  |
| Town of Pine Knoll Shores      | 2,253         | 85           | 3.8%                                 | 359           | 15.9%                         | \$3,438,499          | 3          | 0.1%                         | \$48,709            | 1          | 0.0%                     | \$2,501            | 363           | 16.1%                   | \$3,489,709          |  |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>5,434</b> | <b>7.8%</b>                          | <b>17,944</b> | <b>25.6%</b>                  | <b>\$211,457,553</b> | <b>645</b> | <b>0.9%</b>                  | <b>\$13,628,730</b> | <b>109</b> | <b>0.2%</b>              | <b>\$2,454,216</b> | <b>18,698</b> | <b>26.7%</b>            | <b>\$227,540,501</b> |  |
| <b>Craven</b>                  |               |              |                                      |               |                               |                      |            |                              |                     |            |                          |                    |               |                         |                      |  |
| Unincorporated Craven County   | 5,417         | 17           | 0.3%                                 | 25            | 0.5%                          | \$75,737             | 1          | 0.0%                         | \$938               | 2          | 0.0%                     | \$18,203,250       | 28            | 0.5%                    | \$18,279,925         |  |
| City of Havelock               | 13,049        | 2,327        | 17.8%                                | 2,687         | 20.6%                         | \$23,469,540         | 75         | 0.6%                         | \$2,010,332         | 22         | 0.2%                     | \$543,405          | 2,784         | 21.3%                   | \$26,023,276         |  |
| City of New Bern               | 24,876        | 1,636        | 6.6%                                 | 3,343         | 13.4%                         | \$16,998,284         | 62         | 0.2%                         | \$679,855           | 3          | 0.0%                     | \$30,723           | 3,408         | 13.7%                   | \$17,708,862         |  |
| Town of Bridgeton              | 326           | 180          | 55.2%                                | 195           | 59.8%                         | \$701,690            | 10         | 3.1%                         | \$81,295            | 1          | 0.3%                     | \$63,796           | 206           | 63.2%                   | \$846,781            |  |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  |  | Number of Pre-FIRM Buildings at Risk |              | Residential Buildings at Risk |              |                      | Commercial Buildings at Risk |             |                     | Public Buildings at Risk |             |                     | Total Buildings at Risk |              |                      |
|-------------------------------|----------------|--|--------------------------------------|--------------|-------------------------------|--------------|----------------------|------------------------------|-------------|---------------------|--------------------------|-------------|---------------------|-------------------------|--------------|----------------------|
|                               | Num            |  | Num                                  | % of Total   | Num                           | % of Total   | Estimated Damages    | Num                          | % of Total  | Estimated Damages   | Num                      | % of Total  | Estimated Damages   | Num                     | % of Total   | Estimated Damages    |
| Town of Cove City             | 294            |  | 0                                    | 0.0%         | 0                             | 0.0%         | \$0                  | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 0                       | 0.0%         | \$0                  |
| Town of Dover                 | 299            |  | 0                                    | 0.0%         | 0                             | 0.0%         | \$0                  | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 0                       | 0.0%         | \$0                  |
| Town of River Bend            | 1,553          |  | 253                                  | 16.3%        | 410                           | 26.4%        | \$5,739,669          | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 410                     | 26.4%        | \$5,739,669          |
| Town of Trent Woods           | 1,918          |  | 235                                  | 12.3%        | 248                           | 12.9%        | \$1,991,659          | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 248                     | 12.9%        | \$1,991,659          |
| Town of Vanceboro             | 522            |  | 11                                   | 2.1%         | 16                            | 3.1%         | \$45,934             | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 16                      | 3.1%         | \$45,934             |
| <b>Subtotal Craven</b>        | <b>48,254</b>  |  | <b>4,659</b>                         | <b>9.7%</b>  | <b>6,924</b>                  | <b>14.3%</b> | <b>\$49,022,513</b>  | <b>148</b>                   | <b>0.3%</b> | <b>\$2,772,420</b>  | <b>28</b>                | <b>0.1%</b> | <b>\$18,841,174</b> | <b>7,100</b>            | <b>14.7%</b> | <b>\$70,636,106</b>  |
| <b>Pamlico</b>                |                |  |                                      |              |                               |              |                      |                              |             |                     |                          |             |                     |                         |              |                      |
| Unincorporated Pamlico County | 6,428          |  | 1,371                                | 21.3%        | 2,231                         | 34.7%        | \$15,778,672         | 96                           | 1.5%        | \$982,145           | 8                        | 0.1%        | \$211,217           | 2,335                   | 36.3%        | \$16,972,033         |
| Town of Alliance              | 577            |  | 75                                   | 13.0%        | 90                            | 15.6%        | \$140,010            | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 90                      | 15.6%        | \$140,010            |
| Town of Arapahoe              | 430            |  | 0                                    | 0.0%         | 0                             | 0.0%         | \$0                  | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 0                       | 0.0%         | \$0                  |
| Town of Bayboro               | 515            |  | 146                                  | 28.3%        | 178                           | 34.6%        | \$1,865,053          | 14                           | 2.7%        | \$399,868           | 2                        | 0.4%        | \$95,863            | 194                     | 37.7%        | \$2,360,784          |
| Town of Grantsboro            | 584            |  | 0                                    | 0.0%         | 4                             | 0.7%         | \$3,958              | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 4                       | 0.7%         | \$3,958              |
| Town of Mesic                 | 186            |  | 119                                  | 64.0%        | 153                           | 82.3%        | \$354,828            | 2                            | 1.1%        | \$6,373             | 1                        | 0.5%        | \$3,424             | 156                     | 83.9%        | \$364,625            |
| Town of Minnesott Beach       | 403            |  | 2                                    | 0.5%         | 2                             | 0.5%         | \$21,525             | 0                            | 0.0%        | \$0                 | 0                        | 0.0%        | \$0                 | 2                       | 0.5%         | \$21,525             |
| Town of Oriental              | 1,378          |  | 316                                  | 22.9%        | 595                           | 43.2%        | \$6,629,851          | 24                           | 1.7%        | \$459,992           | 1                        | 0.1%        | \$25,302            | 620                     | 45.0%        | \$7,115,146          |
| Town of Stonewall             | 227            |  | 95                                   | 41.9%        | 92                            | 40.5%        | \$813,373            | 9                            | 4.0%        | \$93,594            | 1                        | 0.4%        | \$36,921            | 102                     | 44.9%        | \$943,888            |
| Town of Vandemere             | 192            |  | 103                                  | 53.6%        | 120                           | 62.5%        | \$1,400,524          | 4                            | 2.1%        | \$77,086            | 8                        | 4.2%        | \$131,936           | 132                     | 68.8%        | \$1,609,546          |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  |  | <b>2,227</b>                         | <b>20.4%</b> | <b>3,465</b>                  | <b>31.7%</b> | <b>\$27,007,794</b>  | <b>149</b>                   | <b>1.4%</b> | <b>\$2,019,058</b>  | <b>21</b>                | <b>0.2%</b> | <b>\$504,663</b>    | <b>3,635</b>            | <b>33.3%</b> | <b>\$29,531,515</b>  |
| <b>Region Total</b>           | <b>158,620</b> |  | <b>12,530</b>                        | <b>0</b>     | <b>33,539</b>                 | <b>21.1%</b> | <b>\$309,986,186</b> | <b>1,025</b>                 | <b>0.6%</b> | <b>\$18,749,228</b> | <b>161</b>               | <b>0.1%</b> | <b>\$21,834,553</b> | <b>34,725</b>           | <b>21.9%</b> | <b>\$350,569,969</b> |

Source: NCEM Risk Management Tool

## REPETITIVE LOSS ANALYSIS

A repetitive loss property is a property for which two or more flood insurance claims of more than \$1,000 have been paid by the NFIP within any 10-year period since 1978. A severe repetitive loss property is classified as such if it has four or more separate claim payments of more than \$5,000 each (including building and contents payments) or two or more separate claim payments (building only) where the total of the payments exceeds the current value of the property. Repetitive loss properties and severe repetitive loss properties are a priority for mitigation because they have a known flood risk and are a drain on the NFIP. An analysis of repetitive loss was completed to examine flood vulnerability within the Region.

According to February 2024 FEMA records, there are a total of 4,650 repetitive loss properties within the Pamlico Sound Region, of which 4,422 are residential and 228 are non-residential. Approximately 64 percent of repetitive loss properties in the region are currently insured. There are 564 properties on the list classified as severe repetitive loss properties.

Table 4.55 summarizes repetitive loss properties by jurisdiction as identified by FEMA through the NFIP. Jurisdictions without any repetitive losses are not listed in the table.

**Table 4.55 – Repetitive Loss Properties by Jurisdiction, February 2024**

| Jurisdiction                   | Total RL Properties | Total Number of Losses | Percent Insured | Occupancy Type |                 | Count of SRL Properties |
|--------------------------------|---------------------|------------------------|-----------------|----------------|-----------------|-------------------------|
|                                |                     |                        |                 | Residential    | Non-Residential |                         |
| <b>Beaufort</b>                |                     |                        |                 |                |                 |                         |
| Unincorporated Beaufort County | 942                 | 3,227                  | 57%             | 925            | 17              | 180                     |
| City of Washington             | 235                 | 780                    | 40%             | 195            | 40              | 38                      |
| Town of Aurora                 | 2                   | 4                      | 100%            | 2              | 0               | 0                       |
| Town of Bath                   | 5                   | 17                     | 60%             | 4              | 1               | 1                       |
| Town of Belhaven               | 366                 | 1,456                  | 56%             | 307            | 59              | 70                      |
| Town of Chocowinity            | 1                   | 3                      | 100%            | 1              | 0               | 0                       |
| Town of Pantego                | 3                   | 6                      | 66%             | 3              | 0               | 0                       |
| Town of Washington Park        | 78                  | 312                    | 74%             | 78             | 0               | 14                      |
| <b>Carteret</b>                |                     |                        |                 |                |                 |                         |
| Unincorporated Carteret County | 632                 | 1,849                  | 56%             | 604            | 28              | 67                      |
| Town of Atlantic Beach         | 116                 | 413                    | 64%             | 106            | 10              | 28                      |
| Town of Beaufort               | 19                  | 56                     | 68%             | 18             | 1               | 1                       |
| Town of Bogue                  | 2                   | 9                      | 100%            | 2              | 0               | 0                       |
| Town of Cape Carteret          | 18                  | 60                     | 44%             | 17             | 1               | 3                       |
| Town of Cedar Point            | 25                  | 97                     | 72%             | 24             | 1               | 8                       |
| Town of Emerald Isle           | 125                 | 351                    | 67%             | 122            | 3               | 9                       |
| Town of Indian Beach           | 1                   | 2                      | 100%            | 1              | 0               | 0                       |
| Town of Morehead City          | 40                  | 112                    | 60%             | 33             | 7               | 3                       |
| Town of Pine Knoll Shores      | 21                  | 44                     | 43%             | 20             | 1               | 1                       |
| <b>Craven</b>                  |                     |                        |                 |                |                 |                         |
| Unincorporated Craven County   | 466                 | 1,264                  | 77%             | 458            | 8               | 37                      |
| City of Havelock               | 22                  | 61                     | 59%             | 21             | 1               | 1                       |
| City of New Bern               | 273                 | 808                    | 75%             | 263            | 10              | 20                      |
| Town of Bridgeton              | 16                  | 48                     | 69%             | 16             | 0               | 2                       |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | Total RL Properties | Total Number of Losses | Percent Insured | Occupancy Type |                 | Count of SRL Properties |
|-------------------------------|---------------------|------------------------|-----------------|----------------|-----------------|-------------------------|
|                               |                     |                        |                 | Residential    | Non-Residential |                         |
| Town of River Bend            | 153                 | 453                    | 82%             | 153            | 0               | 8                       |
| Town of Trent Woods           | 44                  | 125                    | 89%             | 43             | 1               | 3                       |
| <b>Pamlico</b>                |                     |                        |                 |                |                 |                         |
| Unincorporated Pamlico County | 568                 | 1,469                  | 69%             | 558            | 10              | 35                      |
| Town of Bayboro               | 13                  | 30                     | 77%             | 13             | 0               | 0                       |
| Town of Mesic                 | 16                  | 40                     | 69%             | 16             | 0               | 0                       |
| Town of Minnesott Beach       | 2                   | 5                      | 50%             | 2              | 0               | 0                       |
| Town of Oriental              | 390                 | 1,067                  | 77%             | 367            | 23              | 27                      |
| Town of Stonewall             | 7                   | 19                     | 29%             | 7              | 0               | 2                       |
| Town of Vandemere             | 49                  | 144                    | 55%             | 43             | 6               | 6                       |
| <b>Total Region</b>           | <b>4,650</b>        | <b>14,331</b>          | <b>64%</b>      | <b>4,422</b>   | <b>228</b>      | <b>564</b>              |

Source: FEMA, February 2024

Note: RL = Repetitive Loss; SRL = Severe Repetitive Loss

**ENVIRONMENT**

During a flood event, chemicals and other hazardous substances may end up contaminating local water bodies. HMPC members from Pamlico County noted that Hurricane Florence caused fuel or some other hazardous substance to wash ashore and affect a large area in Hobucken.

Flooding kills animals and in general disrupts the ecosystem. Snakes and insects may also make their way to the flooded areas.

Floods can also cause significant erosion, which can alter streambanks and deposit sediment, changing the flow of streams and rivers and potentially reducing the drainage capacity of those waterbodies.

**CONSEQUENCE ANALYSIS**

Table 4.56 summarizes the potential detrimental consequences of flood.

**Table 4.56 - Consequence Analysis - Flood**

| Category  | Consequences  |
|---|---|
| Public  | Localized impact expected to be severe for incident areas and moderate to light for other adversely affected areas.   |
| Responders  | First responders are at risk when attempting to rescue people from their homes. They are subject to the same health hazards as the public. Flood waters may prevent access to areas in need of response or the flood may prevent access to the critical facilities themselves which may prolong response time. Damage to personnel will generally be localized to those in the flood areas at the time of the incident and is expected to be limited. |
| Continuity of Operations (including Continued Delivery of Services) | Floods can severely disrupt normal operations, especially when there is a loss of power. Damage to facilities in the affected area may require temporary relocation of some operations. Localized disruption of roads, facilities, and/or utilities caused by incident may postpone delivery of some services.  |

**SECTION 4: RISK ASSESSMENT**

| Category   | Consequences   |
|--|--|
| Property, Facilities and Infrastructure            | Buildings and infrastructure, including transportation and utility infrastructure, may be damaged or destroyed. Impacts are expected to be localized to the area of the incident. Severe damage is possible.   |
| Environment  | Chemicals and other hazardous substances may contaminate local water bodies. Wildlife and livestock deaths possible. The localized impact is expected to be severe for incident areas and moderate to light for other areas affected by the flood or HazMat spills. Flood may also adversely affect water quality by increasing nutrient and sediment loads in waterbodies.  |
| Economic Condition of the Jurisdiction             | Local economy and finances will be adversely affected, possibly for an extended period of time. During floods (especially flash floods), roads, bridges, farms, houses and automobiles are destroyed. Additionally, the local government must deploy firemen, police and other emergency response personnel and equipment to help the affected area. It may take years for the affected communities to be re-built and business to return to normal. |
| Public Confidence in the Jurisdiction's Governance | Ability to respond and recover may be questioned and challenged if planning, response, and recovery are not timely and effective.  |

**HAZARD SUMMARY BY JURISDICTION**

The following table summarizes flood hazard risk by jurisdiction. Warning time and duration are inherent to the hazard. Spatial extent was assigned according to the amount of area within the SFHA, adjusted in some cases based on the understanding that other sources of flooding and other levels of flooding may occur beyond the SFHA. Due to the coastal geography of the region, flood risk due to storm surge, high tide flooding, flash flooding, and stormwater flooding can impact the region; an impact rating of critical was assigned uniformly across the region. Communities were assigned a probability of likely unless they have no area in the SFHA, in which case probability was lowered to possible.

| Jurisdiction            | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|-------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Beaufort County         | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| City of Washington      | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| Town of Aurora          | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| Town of Bath            | 4           | 3      | 4              | 3            | 3        | 3.5   | H        |
| Town of Belhaven        | 4           | 3      | 4              | 3            | 3        | 3.5   | H        |
| Town of Chocowinity     | 4           | 3      | 2              | 3            | 3        | 3.1   | H        |
| Town of Pantego         | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| Town of Washington Park | 4           | 3      | 4              | 3            | 3        | 3.5   | H        |
| Carteret County         | 4           | 3      | 4              | 3            | 3        | 3.5   | H        |
| Town of Atlantic Beach  | 4           | 3      | 4              | 3            | 3        | 3.5   | H        |
| Town of Beaufort        | 4           | 3      | 4              | 3            | 3        | 3.5   | H        |
| Town of Bogue           | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| Town of Cape Carteret   | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| Town of Cedar Point     | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| Town of Emerald Isle    | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| Town of Indian Beach    | 4           | 3      | 4              | 3            | 3        | 3.5   | H        |
| Town of Morehead City   | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |
| Town of Newport         | 4           | 3      | 3              | 3            | 3        | 3.3   | H        |

**SECTION 4: RISK ASSESSMENT**

| <b>Jurisdiction</b>       | <b>Probability</b> | <b>Impact</b> | <b>Spatial Extent</b> | <b>Warning Time</b> | <b>Duration</b> | <b>Score</b> | <b>Priority</b> |
|---------------------------|--------------------|---------------|-----------------------|---------------------|-----------------|--------------|-----------------|
| Town of Peletier          | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Town of Pine Knoll Shores | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Craven County             | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| City of Havelock          | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| City of New Bern          | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Town of Bridgeton         | 4                  | 3             | 4                     | 3                   | 3               | 3.5          | H               |
| Town of Cove City         | 2                  | 3             | 1                     | 3                   | 3               | 2.3          | M               |
| Town of Dover             | 2                  | 3             | 1                     | 3                   | 3               | 2.3          | M               |
| Town of River Bend        | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Town of Trent Woods       | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Town of Vanceboro         | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Pamlico County            | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Town of Alliance          | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Town of Arapahoe          | 2                  | 3             | 1                     | 3                   | 3               | 2.3          | M               |
| Town of Bayboro           | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Town of Grantsboro        | 4                  | 3             | 2                     | 3                   | 3               | 3.1          | H               |
| Town of Mesic             | 4                  | 3             | 4                     | 3                   | 3               | 3.5          | H               |
| Town of Minnesott Beach   | 4                  | 3             | 2                     | 3                   | 3               | 3.1          | H               |
| Town of Oriental          | 4                  | 3             | 3                     | 3                   | 3               | 3.3          | H               |
| Town of Stonewall         | 4                  | 3             | 4                     | 3                   | 3               | 3.5          | H               |
| Town of Vandemere         | 4                  | 3             | 4                     | 3                   | 3               | 3.5          | H               |

## 4.5.6 HURRICANES & COASTAL HAZARDS

### HAZARD BACKGROUND

This hazard profile includes hurricanes and nor'easters, coastal erosion, and rip currents.

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#### HURRICANES AND NOR'EASTERS

Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. Tropical cyclones act as a “safety-valve,” limiting the continued build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the pole-ward latitudes. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes.

The key energy source for a tropical cyclone is the release of latent heat from the condensation of warm water. Their formation requires a low-pressure disturbance, warm sea surface temperature, rotational force from the spinning of the earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which encompasses the months of June through November. The peak of the Atlantic hurricane season is in early to mid-September and the average number of storms that reach hurricane intensity per year in the Atlantic basin is about six.

The greatest potential for loss of life related to a hurricane is from the storm surge, which is discussed in Section 4.5.5. Damage may also result from spawned tornadoes, which are discussed in Section 4.5.7. Finally, damage during hurricanes often results from inland or riverine flooding from heavy rainfall that usually accompanies these storms. For example, Hurricane Floyd, which made landfall as a Category 2 storm, caused the worst inland flooding disaster in North Carolina’s history. Rainfall amounts exceeded 20 inches in certain locales and 67 counties sustained damages. Inland flooding is discussed in section 4.5.5.

Similar to hurricanes, nor'easters are ocean storms capable of causing substantial damage to coastal areas in the Eastern United States due to their strong winds and heavy surf. Nor'easters are named for the winds that blow in from the northeast and drive the storm up the East Coast along the Gulf Stream, a band of warm water that lies off the Atlantic coast. They are caused by the interaction of the jet stream with horizontal temperature gradients and generally occur during the fall and winter months when moisture and cold air are plentiful.

Nor'easters are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surf that causes severe beach erosion and coastal flooding. There are two main components to a nor'easter: (1) a Gulf Stream low-pressure system (counter-clockwise winds) generated off the southeastern U.S. coast, gathering warm air and moisture from the Atlantic, and pulled up the East Coast by strong northeasterly winds at the leading edge of the storm; and (2) an Arctic high-pressure system (clockwise winds) which meets the low-pressure system with cold, arctic air blowing down from Canada. When the two systems collide, the moisture and cold air produce a mix of precipitation and can produce dangerously high winds and heavy seas. As the low-pressure system deepens, the intensity of the winds and waves increases and can cause serious damage to coastal areas as the storm moves northeast.

*Warning Time: 1 – More than 24 hours*

*Duration: 3 – Less than 1 week*



**COASTAL EROSION**

Coastal erosion is a process whereby large storms, flooding, strong wave action, sea level rise, and human activities, such as inappropriate land use, alterations, and shore protection structures, wear away the beaches and bluffs along the coast. Erosion undermines and often destroys homes, businesses, and public infrastructure and can have long-term economic and social consequences. According to NOAA, coastal erosion is responsible for approximately \$500 million per year in coastal property loss in the United States, including damage to structures and loss of land. To mitigate coastal erosion, the federal government spends an average of \$150 million every year on beach nourishment and other shoreline erosion control measures.

Coastal erosion has both natural causes and causes related to human activities. Gradual coastal erosion/replenishment results naturally from the impacts of tidal longshore currents. Severe coastal erosion can occur over a very short period of time when the state is impacted by hurricanes, tropical storms and other weather systems. Sand is continually removed by longshore currents in some areas but it is also continually replaced by sand carried in by the same type of currents. Structures such as piers or sea walls, jetties, and navigational inlets may interrupt the movement of sand. Sand can become “trapped” in one place by these types of structures. The currents will, of course, continue to flow, though depleted of sand trapped elsewhere. With significant amounts of sand trapped in the system, the continuing motion of currents (now deficient in sand) results in erosion. In this way, human construction activities that result in the unnatural trapping of sand have the potential to result in significant coastal erosion.

Erosion rates and potential impacts are highly localized. Severe storms can remove wide beaches, along with substantial dunes, in a single event. In undeveloped areas, high recession rates are not likely to cause significant concern, but in some heavily populated locations, one or two feet of erosion may be considered catastrophic (NOAA, 2014).

*Warning Time: 1 – More than 24 hours*

*Duration: 4 – More than 1 week*

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**RIP CURRENTS**

Rip currents are powerful, narrow channels of seaward flowing water along the coast, extending from the shoreline to outside the surf zone. Rip currents form when there are variations in wave breaking along the beach due to the flow of water from areas with more wave breaking and corresponding higher wave setup to areas with less wave breaking and corresponding lower wave setup.

The National Weather Service (NWS) describes three major types of rip currents:

- **Bathymetrically-controlled rip currents** are those that occur at relatively fixed locations due to sandbars, submarine canyons and ridges, reefs, or other offshore features. These rip currents can be referred to as channelized or focused. Channelized currents are the most documented and well understood and occur in deep channels through shallow sandbars. Channelized rip currents are typically between 5 to 100 yards wide, 3 to 10 feet deep, and anywhere from 50 to 500 yards apart. Focused rip currents can occur along flat featureless beaches and appear as offshore directed plumes of turbulent water and sediment. These rip currents may last for days, weeks, or months.
- **Structurally-controlled rip currents** occur adjacent to man-made structures such as groins, jetties, and piers and natural features like rock outcrops.
- **Hydrodynamically-controlled rip currents** occur solely as a result of wave and current interactions, typically from waves originating from two different sources approaching the beach from different directions. These rip currents are transient and may only last for several minutes.

*Warning Time: 4 – Less than 6 hours*

*Duration: 2 – Less than 24 hours*

## **LOCATION**

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### **HURRICANES AND NOR'EASTERS**

Hurricane and tropical storm winds and nor'easters can impact the entire Pamlico Sound Region.

*Spatial Extent: 4 – Large*

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### **EROSION**

Erosion can occur along any shoreline in the region. While erosion is likely to be more frequent and severe along the Atlantic coast, erosion of estuarine shorelines can also occur. In the Pamlico Sound Region, Carteret County is the location facing the greatest exposure to erosion.

Figure 4.39 on the following page shows the locations where shoreline change data to measure erosion and accretion rates along the North Carolina coast has been compiled by the USGS.

*Spatial Extent: 1 – Negligible*

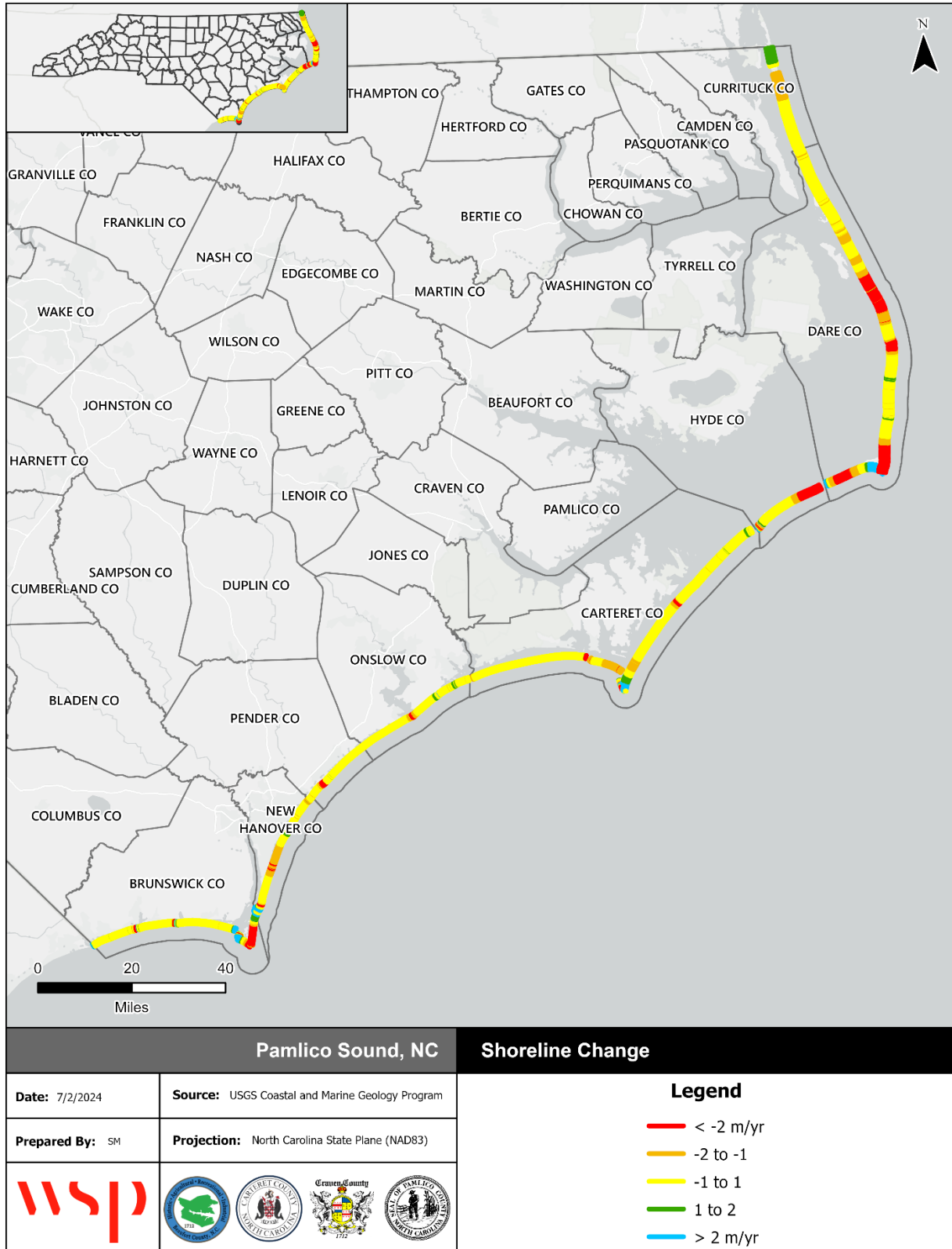
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### **RIP CURRENTS**

Rip currents can occur along any oceanfront or area that experiences breaking waves. Only Carteret County has oceanfront shoreline areas where rip currents can occur.

*Spatial Extent: 1 – Negligible*

Figure 4.39 - Shoreline Change Along the North Carolina Coast



Source: USGS Coastal and Marine Geology Program

## EXTENT

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### *HURRICANES AND NOR'EASTERS*

As an incipient hurricane develops, barometric pressure (measured in millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane.

Hurricane force winds can extend outward by about 25 miles from the eye of a small hurricane to more than 150 miles from the center of a large hurricane. Tropical storm force winds may extend even further, up to approximately 300 miles from the eye of a large hurricane. In general, the front right quadrant of a storm, relative to its direction of movement, is the most dangerous part of the storm. Wind speeds are highest in this area due to the additive impact of the atmospheric steering winds and the storm winds.

Hurricane intensity is further classified by the Saffir-Simpson Scale, detailed in Table 4.57, which rates hurricane intensity on a scale of 1 to 5, with 5 being the most intense.

Nor'easters can also be measured by their wind speeds; however, there is no designated scale for classifying the severity of nor'easters.

Located on the coast and along estuarine areas, the Pamlico Sound Region is susceptible to every category of hurricane.

*Impact: 4 – Catastrophic*






**Table 4.57 – Saffir-Simpson Scale**

| <b>Category</b> | <b>Maximum Sustained Wind Speed (MPH)</b> | <b>Types of Damage</b>  |
|-----------------|---|---|
| 1               | 74-95                                     | Very dangerous winds will produce some damage; Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.  |
| 2               | 96-110                                    | Extremely dangerous winds will cause extensive damage; Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.  |
| 3               | 111-129                                   | Devastating damage will occur; Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.   |
| 4               | 130-156                                   | Catastrophic damage will occur; Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months. |
| 5               | 157 +                                     | Catastrophic damage will occur; A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.  |

Source: National Hurricane Center

The Saffir-Simpson Scale categorizes hurricane intensity linearly based upon maximum sustained winds and barometric pressure, which are combined to estimate potential damage. Categories 3, 4, and 5 are classified as “major” hurricanes and, while hurricanes within this range comprise only 20 percent of total tropical cyclone landfalls, they account for over 70 percent of the damage in the United States. Table 4.58 describes the damage that could be expected for each category of hurricane. Damage during hurricanes may also result from spawned tornadoes, storm surge, and inland flooding associated with heavy rainfall that usually accompanies these storms.

**Table 4.58 – Hurricane Damage Classifications**

| Storm Category | Damage Level | Description of Damages  | Photo Example  |
|----------------|--------------|---|--|
| 1              | MINIMAL      | No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.  |   |
| 2              | MODERATE     | Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings.  |   |
| 3              | EXTENSIVE    | Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures, with larger structures damaged by floating debris. Terrain may be flooded well inland.          |   |
| 4              | EXTREME      | More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.  |   |
| 5              | CATASTROPHIC | Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required. |  |

Source: National Hurricane Center; Federal Emergency Management Agency

**EROSION**

The magnitude of erosion can be measured as a rate of change from a measured previous condition. As part of their Digital Shoreline Analysis System version 4.3, USGS has developed short and long-term linear regression rate calculations as a metric for shoreline change, measured in meters per year.

**RIP CURRENTS**

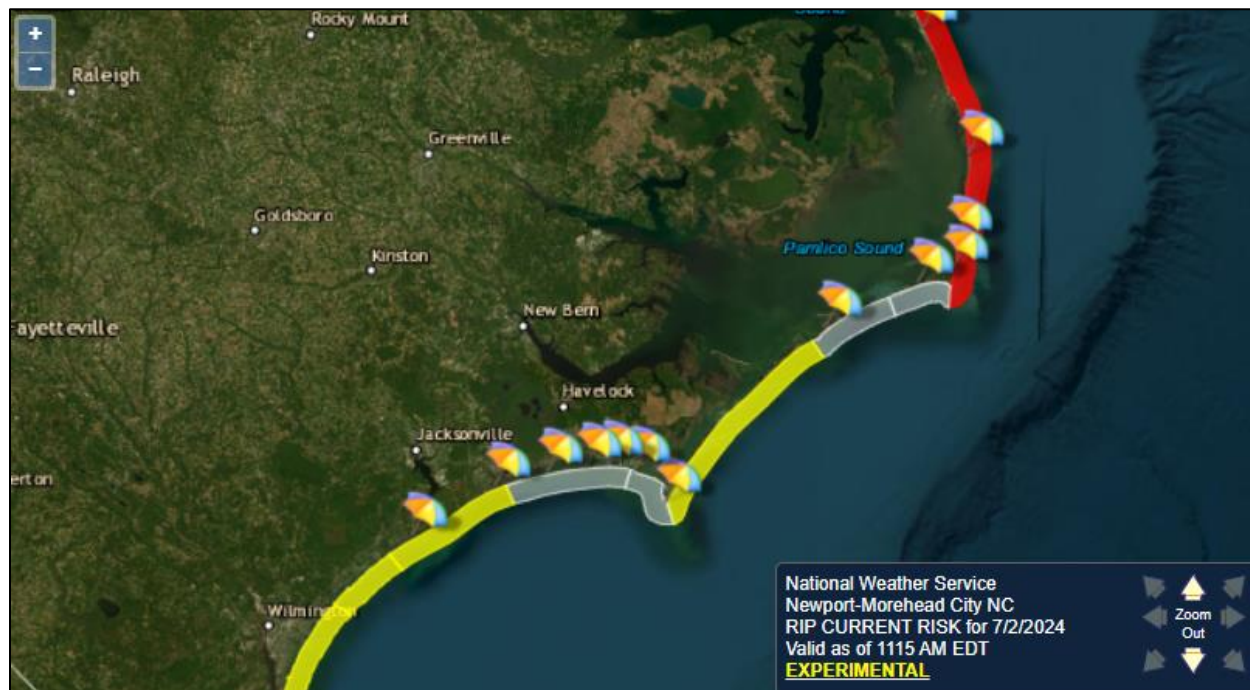
One measure of rip currents is the flow speed of the current. Per NWS, channelized rip currents typically flow about 1-2 feet per second and can reach up to 8 feet per second. Rip currents do not have a steady flow but can experience rip pulses for short periods of time during which flows can suddenly accelerate to more than double their normal speed. Despite these measurable features, rip currents are not typically measured and recorded in these ways. Another way to consider the magnitude of a rip current is by its impacts. The HMPC is most concerned with rip currents causing deaths, injuries, or property damages.

The National Weather Service Newport-Morehead City, NC Forecast Office provides rip current risk level warnings on an Experimental Beach Forecast Webpage, shown in Figure 4.40. This tool indicates whether a section of the beach has low, moderate, or high rip current risk based on current surf conditions. The rip current risk levels carry the following descriptions, given as warnings to beach-goers:

## SECTION 4: RISK ASSESSMENT

- **Low:** The risk of rip currents is low, however, life threatening rip currents may still occur especially near groins, jetties, reefs, and piers. Always swim near a lifeguard and remember to heed the advice of the local beach patrol and flag warning systems.
- **Moderate:** Life threatening rip currents are possible. Always swim near a lifeguard and remember to heed the advice of the local beach patrol and flag warning systems.
- **High:** Life threatening rip currents are likely. The surf zone is dangerous for all levels of swimmers. Stay out of the water. Remember to heed the advice of the local beach patrol and flag warning systems.

**Figure 4.40 – NWS Rip Current Risk Level Forecast**



Source: National Weather Service Experimental Beach Forecast Webpage

Overall, coastal hazards have a limited impact on the Region. Erosion events may cause property damage when severe but are unlikely to cause injury or death. Rip currents may result in injury or death in severe cases but rarely have reported property damages. Both types of events are limited to areas along the coastline and surf zone.

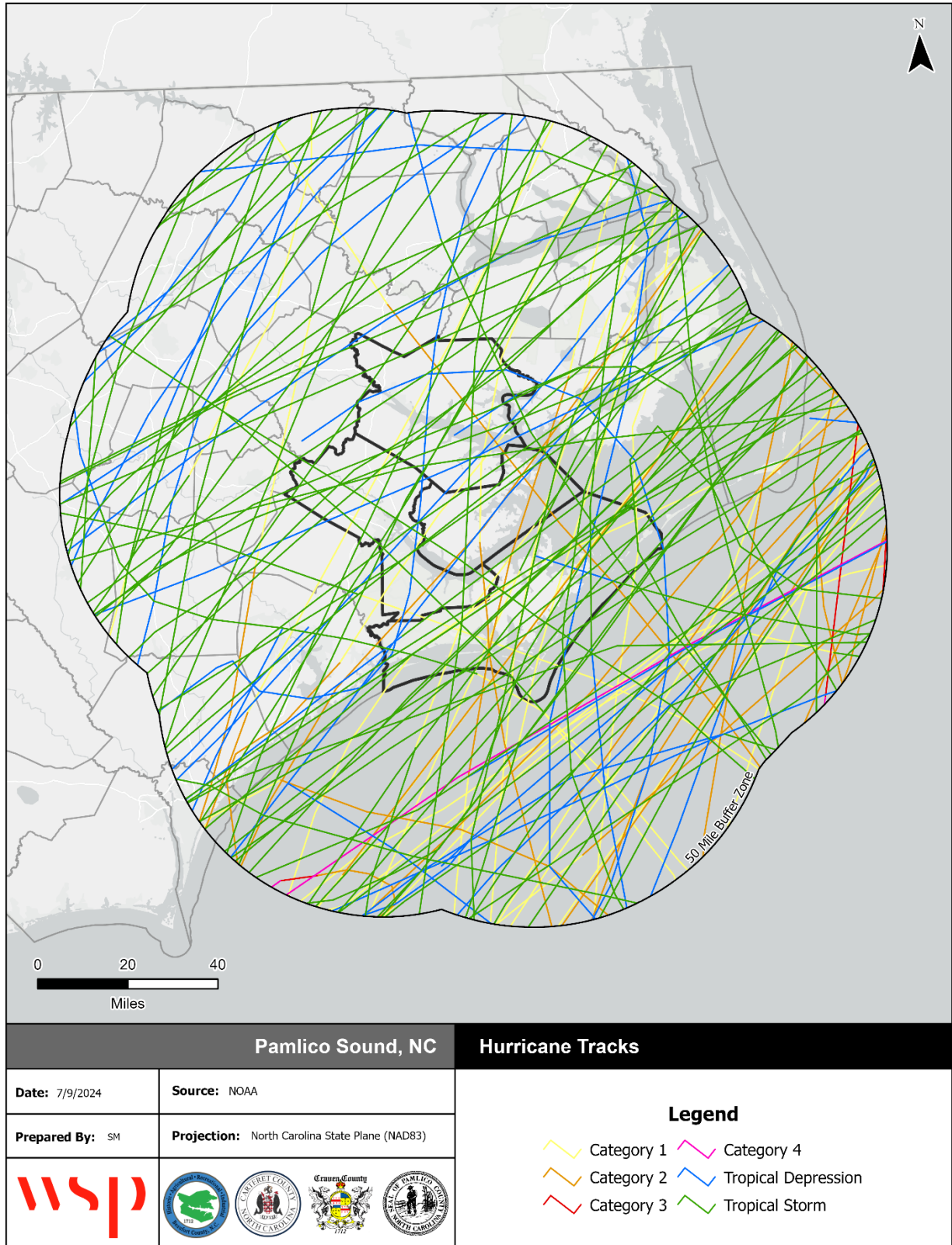
*Impact: 2 – Limited*

## HISTORICAL OCCURRENCES

### HURRICANES & NOR'EASTERS

According to the Office of Coastal Management’s Tropical Cyclone Storm Segments data, which is a subset of the International Best Track Archive for Climate Stewardship (IBTrACS) dataset, 108 hurricanes and tropical storms have passed within 50 miles of the Pamlico Sound Region since 1900. These storm tracks are shown in Figure 4.41. The date, storm name, storm category, and maximum wind speed of each event are detailed in Table 4.59.

Figure 4.41 - Hurricane/Tropical Storm Tracks within 50 miles of the Pamlico Sound Region, 1900-2024



Source: NOAA Office of Coastal Management



**SECTION 4: RISK ASSESSMENT**

**Table 4.59 – Hurricane/Tropical Storm Tracks within 50 Miles of Pamlico Sound Region, 1900-2024**

| <b>Date</b> | <b>Storm Name</b> | <b>Max Storm Category*</b> | <b>Max Wind Speed (mph)*</b> |
|-------------|-------------------|----------------------------|------------------------------|
| 10/13/1900  | Unnamed           | Extratropical Storm        | 40                           |
| 7/11/1901   | Unnamed           | Category 1                 | 81                           |
| 9/18/1901   | Unnamed           | Tropical Storm             | 40                           |
| 6/29/1907   | Unnamed           | Extratropical Storm        | 58                           |
| 5/29/1908   | Unnamed           | Category 1                 | 75                           |
| 7/31/1908   | Unnamed           | Category 1                 | 81                           |
| 7/31/1908   | Unnamed           | Tropical Storm             | 69                           |
| 9/1/1908    | Unnamed           | Tropical Storm             | 52                           |
| 8/28/1910   | Unnamed           | Extratropical Storm        | 46                           |
| 10/20/1910  | Unnamed           | Tropical Storm             | 69                           |
| 6/15/1912   | Unnamed           | Extratropical Storm        | 46                           |
| 9/3/1913    | Unnamed           | Category 1                 | 86                           |
| 5/16/1916   | Unnamed           | Tropical Storm             | 40                           |
| 9/6/1916    | Unnamed           | Tropical Storm             | 52                           |
| 8/24/1918   | Unnamed           | Category 1                 | 75                           |
| 8/26/1924   | Unnamed           | Category 2                 | 104                          |
| 9/17/1924   | Unnamed           | Extratropical Storm        | 52                           |
| 9/30/1924   | Unnamed           | Extratropical Storm        | 69                           |
| 12/2/1925   | Unnamed           | Extratropical Storm        | 81                           |
| 9/19/1928   | Unnamed           | Extratropical Storm        | 81                           |
| 9/12/1930   | Unnamed           | Category 1                 | 92                           |
| 9/16/1932   | Unnamed           | Extratropical Storm        | 58                           |
| 8/23/1933   | Unnamed           | Category 2                 | 98                           |
| 9/16/1933   | Unnamed           | Category 2                 | 109                          |
| 9/3/1934    | Unnamed           | Tropical Storm             | 46                           |
| 9/8/1934    | Unnamed           | Category 1                 | 92                           |
| 9/6/1935    | Unnamed           | Tropical Storm             | 58                           |
| 7/31/1937   | Unnamed           | Tropical Storm             | 63                           |
| 10/11/1942  | Unnamed           | Extratropical Storm        | 52                           |
| 10/12/1942  | Unnamed           | Extratropical Storm        | 52                           |
| 8/2/1944    | Unnamed           | Tropical Storm             | 69                           |
| 9/14/1944   | Unnamed           | Category 3                 | 121                          |
| 6/25/1945   | Unnamed           | Category 1                 | 75                           |
| 7/6/1946    | Unnamed           | Tropical Storm             | 52                           |
| 9/25/1947   | Unnamed           | Extratropical Storm        | 40                           |
| 8/24/1949   | Unnamed           | Category 2                 | 109                          |
| 9/12/1949   | Unnamed           | Tropical Storm             | 52                           |
| 8/14/1953   | Barbara           | Category 1                 | 92                           |
| 5/29/1954   | Unnamed           | Tropical Storm             | 46                           |
| 8/30/1954   | Carol             | Category 2                 | 109                          |
| 8/12/1955   | Connie            | Category 2                 | 98                           |
| 9/19/1955   | Ione              | Category 2                 | 109                          |
| 9/27/1956   | Flossy            | Extratropical Storm        | 58                           |
| 10/17/1956  | Unnamed           | Extratropical Storm        | 58                           |

**SECTION 4: RISK ASSESSMENT**

| <b>Date</b> | <b>Storm Name</b> | <b>Max Storm Category*</b> | <b>Max Wind Speed (mph)*</b> |
|-------------|-------------------|----------------------------|------------------------------|
| 9/27/1958   | Helene            | Category 4                 | 138                          |
| 7/10/1959   | Cindy             | Tropical Storm             | 40                           |
| 8/2/1959    | Unnamed           | Tropical Storm             | 46                           |
| 7/29/1960   | Brenda            | Tropical Storm             | 69                           |
| 9/12/1960   | Donna             | Category 2                 | 104                          |
| 9/14/1961   | Unnamed           | Tropical Storm             | 40                           |
| 8/28/1962   | Alma              | Category 1                 | 75                           |
| 9/13/1964   | Dora              | Tropical Storm             | 52                           |
| 10/16/1964  | Isbell            | Category 1                 | 75                           |
| 9/17/1967   | Doria             | Tropical Storm             | 52                           |
| 10/20/1968  | Gladys            | Category 1                 | 86                           |
| 8/27/1971   | Doria             | Tropical Storm             | 63                           |
| 9/30/1971   | Ginger            | Category 1                 | 86                           |
| 6/22/1972   | Agnes             | Tropical Storm             | 52                           |
| 6/29/1975   | Amy               | Tropical Storm             | 40                           |
| 10/27/1975  | Hallie            | Tropical Storm             | 52                           |
| 8/20/1981   | Dennis            | Tropical Storm             | 63                           |
| 6/19/1982   | Subtrop:Unnamed   | Subtropical Storm          | 69                           |
| 9/12/1984   | Diana             | Category 4                 | 132                          |
| 9/27/1985   | Gloria            | Category 2                 | 104                          |
| 11/22/1985  | Kate              | Tropical Storm             | 52                           |
| 8/17/1986   | Charley           | Category 1                 | 75                           |
| 8/19/1991   | Bob               | Category 2                 | 109                          |
| 6/6/1995    | Allison           | Extratropical Storm        | 46                           |
| 6/19/1996   | Arthur            | Tropical Storm             | 46                           |
| 7/12/1996   | Bertha            | Category 2                 | 104                          |
| 10/8/1996   | Josephine         | Extratropical Storm        | 52                           |
| 7/24/1997   | Danny             | Tropical Storm             | 46                           |
| 8/27/1998   | Bonnie            | Category 2                 | 109                          |
| 9/4/1998    | Earl              | Extratropical Storm        | 58                           |
| 9/4/1999    | Dennis            | Tropical Storm             | 69                           |
| 9/16/1999   | Floyd             | Category 2                 | 104                          |
| 10/18/1999  | Irene             | Category 2                 | 109                          |
| 9/23/2000   | Helene            | Tropical Storm             | 40                           |
| 9/10/2002   | Gustav            | Tropical Storm             | 63                           |
| 10/12/2002  | Kyle              | Tropical Storm             | 46                           |
| 9/18/2003   | Isabel            | Category 2                 | 104                          |
| 8/3/2004    | Alex              | Category 2                 | 98                           |
| 8/14/2004   | Charley           | Tropical Storm             | 69                           |
| 9/14/2005   | Ophelia           | Category 1                 | 86                           |
| 6/14/2006   | Alberto           | Extratropical Storm        | 40                           |
| 9/1/2006    | Ernesto           | Tropical Storm             | 58                           |
| 6/3/2007    | Barry             | Extratropical Storm        | 46                           |
| 9/9/2007    | Gabrielle         | Tropical Storm             | 58                           |
| 7/20/2008   | Cristobal         | Tropical Storm             | 52                           |

**SECTION 4: RISK ASSESSMENT**

| Date       | Storm Name | Max Storm Category* | Max Wind Speed (mph)* |
|------------|------------|---------------------|-----------------------|
| 9/6/2008   | Hanna      | Tropical Storm      | 69                    |
| 8/27/2011  | Irene      | Category 1          | 86                    |
| 5/30/2012  | Beryl      | Tropical Storm      | 46                    |
| 6/7/2013   | Andrea     | Extratropical Storm | 46                    |
| 7/4/2014   | Arthur     | Category 2          | 98                    |
| 6/1/2016   | Bonnie     | Tropical Depression | 25                    |
| 6/7/2016   | Colin      | Extratropical Storm | 52                    |
| 9/3/2016   | Hermine    | Tropical Storm      | 63                    |
| 9/20/2016  | Julia      | Tropical Depression | 30                    |
| 10/9/2016  | Matthew    | Category 1          | 81                    |
| 8/29/2017  | Not Named  | Tropical Storm      | 37                    |
| 9/14/2018  | Florence   | Category 2          | 90                    |
| 9/6/2019   | Dorian     | Category 2          | 90                    |
| 10/20/2019 | Nestor     | Tropical Storm      | 40                    |
| 5/18/2020  | Arthur     | Tropical Storm      | 45                    |
| 7/9/2020   | Fay        | Tropical Storm      | 35                    |
| 8/4/2020   | Isaias     | Category 1          | 80                    |
| 6/21/2021  | Claudette  | Tropical Storm      | 40                    |
| 7/3/2022   | Colin      | Tropical Depression | 29                    |

\*Reports the most intense category and wind speed that occurred within 50 miles of the Pamlico Sound Region, not for the storm event overall.

Source: Office of Coastal Management, 2024.

The above list of storms is not an exhaustive list of hurricanes that have affected the Pamlico Sound Region. Several storms, including Hurricane Irene (2011) and Hurricane Sandy, have passed further than 50 miles away from the Pamlico Sound Region yet had strong enough wind or rain impacts to affect the region. NCEI records hurricane and tropical storm events across the region by county and zone; therefore, one event that impacts all four counties in the region is recorded for each county. During the 28-year period from 1996 through 2023, NCEI records 117 hurricane and tropical storm reports across 35 separate days. These events are summarized in Table 4.60 by storm. All death, injury, and damage records were combined from all counties/zones. Where property damage estimates were broken out by type, NCEI reports only the value of wind-related damages. Event narratives following this table provide a fuller scope of the impacts from selected events.

**Table 4.60 - Recorded Hurricane/Tropical Storm Winds in Pamlico Sound Region Counties, 1996-2023**

| Date             | Storm                    | Deaths/<br>Injuries | Property Damage | Crop Damage  |
|------------------|--------------------------|---------------------|-----------------|--------------|
| 6/18/1996        | Tropical Storm Arthur    | 0/0                 | \$0             | \$0          |
| 7/12/1996        | Hurricane Bertha         | 0/0                 | \$63,250,000    | \$32,100,000 |
| 8/29/1996        | Hurricane Eduoard        | 0/0                 | \$0             | \$0          |
| 9/4/1996         | Hurricane Fran           | 0/0                 | \$223,000,000   | \$0          |
| 10/8/1996        | Tropical Storm Josephine | 0/0                 | \$0             | \$0          |
| 8/26/1998        | Hurricane Bonnie         | 0/0                 | \$0             | \$0          |
| 8/30 - 9/1/1999  | Hurricane Dennis         | 0/0                 | \$9,100,000     | \$15,700,000 |
| 9/14 - 9/15/1999 | Hurricane Floyd          | 2/0                 | \$29,500,000    | \$12,200,000 |
| 10/16/1999       | Hurricane Irene          | 1/0                 | \$0             | \$0          |

**SECTION 4: RISK ASSESSMENT**

| Date           | Storm                  | Deaths/<br>Injuries | Property Damage      | Crop Damage          |
|----------------|------------------------|---------------------|----------------------|----------------------|
| 9/10/2002      | Tropical Storm Gustav  | 0/0                 | \$2,000              | \$0                  |
| 9/17/2003      | Hurricane Isabel       | 0/0                 | \$72,100,000         | \$14,200,000         |
| 8/3/2004       | Hurricane Alex         | 0/0                 | \$45,000             | \$0                  |
| 8/14/2004      | Tropical Storm Charley | 0/0                 | \$875,000            | \$450,000            |
| 9/13/2005      | Hurricane Ophelia      | 0/5                 | \$28,450,000         | \$8,000,000          |
| 8/31/2006      | Tropical Storm Ernesto | 0/0                 | \$185,000            | \$1,200,000          |
| 9/5/2008       | Tropical Storm Hanna   | 0/0                 | \$30,000             | \$0                  |
| 9/2/2010       | Hurricane Earl         | 0/0                 | \$5,000              | \$0                  |
| 8/26/2011      | Hurricane Irene        | 0/0                 | \$55,000,000         | \$40,000,000         |
| 10/28/2012     | Hurricane Sandy        | 0/0                 | \$0                  | \$0                  |
| 6/6/2013       | Tropical Storm Andrea  | 0/0                 | \$0                  | \$0                  |
| 7/3/2014       | Hurricane Arthur       | 0/0                 | \$0                  | \$0                  |
| 5/8/2015       | Tropical Storm Ana     | 0/0                 | \$0                  | \$0                  |
| 9/2/2016       | Hurricane Hermine      | 0/0                 | \$5,000              | \$0                  |
| 10/8/2016      | Hurricane Matthew      | 0/0                 | \$0                  | \$0                  |
| 9/13/2018      | Hurricane Florence     | 0/0                 | \$34,140,000         | \$0                  |
| 10/11/2018     | Hurricane Michael      | 0/0                 | \$0                  | \$0                  |
| 9/5 - 9/6/2019 | Hurricane Dorian       | 0/0                 | \$0                  | \$0                  |
| 8/3 - 8/4/2020 | Hurricane Isaias       | 0/0                 | \$0                  | \$0                  |
| 9/30/2022      | Hurricane Ian          | 0/0                 | \$0                  | \$0                  |
| 8/31/2023      | Hurricane Idalia       | 0/0                 | \$0                  | \$0                  |
| 9/22/2023      | Tropical Storm Ophelia | 0/0                 | \$0                  | \$0                  |
| <b>Total</b>   |                        | <b>3/5</b>          | <b>\$646,487,000</b> | <b>\$123,850,000</b> |

Source: NCEI Storm Events Database

**August 30 – September 1, 1999** – Unfortunately the hurricane approached eastern North Carolina during one of the highest astronomical tides of the month. In the New Bern area near the Trent River...6 feet of water was reported. Oriental in Pamlico County reported tides 6 to 8 feet above normal. Residents of Cedar Island in Carteret County, Ocracoke in Hyde County, and others in Pamlico County reported this was the highest water since 1933. The Cape Lookout C-Man station reported sustained winds of 70 mph with gusts to 91 mph. The greatest rainfall occurred over Carteret, southern Craven, Outer Banks Hyde, and Outer Banks Dare County. Doppler radar estimates were near 6 to 8 inches with isolated areas of 8 to 10. A Cooperative observer in Morehead City reported 7.83 inches. No tornadoes were reported and only minor fresh water flooding was reported. No fatalities were reported in direct relationship to Hurricane Dennis.

**October 16, 1999** – One fatality was reported in western Beaufort County. A male was driving an automobile on Highway 264 when the vehicle hydroplaned. Craven and Lenoir Counties were obviously the most affected. River levels remained above flood stage on the Neuse River since before Hurricane Floyd. Additionally, major flooding occurred along the Swift Creek near Vanceboro back to levels similar to but not as bad as Hurricane Floyd.

**September 17, 2003** – Eastern Carteret, eastern Pamlico, southern Craven, Beaufort, and Hyde counties experienced significant storm surge damage with hundreds of homes flooded in most of these counties. The highest storm surges were experienced in the lower reaches of the Neuse River where water levels rose to as high as 10.5 feet at the mouth of Adams Creek. Storm surge values ranged from 6 to 10 feet across eastern Pamlico county with the highest water levels recorded near Oriental. A 4 to 7 foot storm surge occurred across Core Sound in eastern Carteret county, except water levels rose between 8 and 10 feet along

the South River and Big Creek. Storm surge values were around 7 feet in portions of Beaufort county in Washington, and Belhaven. Virtually every business on Main Street in Belhaven was flooded with 2 to 3 feet of water. Hurricane force winds were also experienced in parts of the inland counties of Jones, Craven, and Pitt counties during the afternoon of September 18th where inland hurricane wind warnings had been in effect for 11 hours. Other counties west of the center of the storm experienced wind gusts between 60 and 65 mph.

**September 13, 2005** – Highest winds and damages occurred across this area where winds gusted to near 100 mph, and storm surges of up to 6 feet resulted in structural damages totaling near 35 million dollars. The highest surge was reported along the lower reaches of the Neuse River in southern Craven County where water levels rose to 8 feet, during the night of the 14th. Minor wind damage occurred across the inland counties of Duplin, Jones, Lenoir, and Craven where tropical storm force wind gusts blew shingles off roofs, and downed trees and power lines. The combination of surge from Pamlico Sound and heavy storm total rainfall, from 4 to 9 inches, resulted in the flooding of streams, roads, and lower elevations in Beaufort, Carteret, Craven, Jones, Onslow, and Pamlico counties.

**September 13, 2018** – Florence produced extensive wind damage along the North Carolina coast from Cape Lookout, across Carteret, Onslow, Pender and New Hanover counties. Thousands of downed trees caused widespread power outages to nearly all of eastern North Carolina. The historic legacy of Hurricane Florence will be record breaking storm surge of 9 to 13 feet and widespread devastating rainfall of 20 to 30 inches, locally up to 36 inches, which produced catastrophic and life-threatening flooding. The hardest hit areas included New Bern, Newport, Belhaven, Oriental, North Topsail Beach and Jacksonville, along with southeast Carteret County, or basically south of a line from Kinston to Cedar Island. A storm total rainfall of 34.00 inches was reported in Swansboro, while the NWS office in Newport recorded 25.20 inches. Wind gusts of 106 mph were reported at Cape Lookout with 105 mph at Fort Macon.

**September 30, 2022** – Ian initially made landfall on the west coast of Florida as a major category 4 hurricane, and then crossed into the Atlantic and moved northward, making a second landfall on the South Carolina coast near Georgetown as a category 1 hurricane. For Eastern NC, tropical storm force winds, elevated water levels, heavy rainfall of 3 to 6 inches, and a tornado were associated with Ian.

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### **EROSION**

The Carteret County Shore Protection Office conducts annual beach monitoring along Bogue Banks, Shackleford Banks, and Bear Island under the Bogue Banks Beach and Nearshore Mapping Program. Per the Program’s 2020 Annual Report, the Bogue Banks oceanfront shoreline experienced an overall average background erosion rate of -3.14 ft over the prior year. This result is lower than prior years as recovery of shorelines has taken place following Hurricane Florence. The report also notes that Atlantic Beach, Fort Macon and Emerald Isle – East continue to have the highest erosion rates of this region.

The Program’s 2019 Hurricane Florence Post-Storm Impact Evaluation reports that erosion caused by the storm resulted in an average landward recession at MHW of -21.4 ft. Average volumetric losses of up to 27.2 cy/ft were noted above -5 feet, -12 feet, and -20 feet NAVD88. Phase 1 of a planned Post-Florence beach renourishment project estimated base costs at over \$20.1 million.

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### **RIP CURRENT**

Rip currents are listed in NCEI’s storm events database only when they cause a drowning, near-drowning, result in one or more rescues, or damage to watercraft. **Error! Reference source not found.** lists all rip current events recorded by NCEI for the Pamlico Sound Region during the 25-year period from 1999 through 2023. Only Carteret County has oceanfront shoreline where rip currents can occur.

**Table 4.61 – NCEI Records of Rip Currents, 1999-2023**

| Location        | Date      | Time | Deaths    | Injuries | Reported Property Damage |
|-----------------|-----------|------|-----------|----------|--------------------------|
| Atlantic        | 5/31/2002 | 1400 | 1         | 0        | \$0                      |
| Atlantic Beach  | 7/23/2002 | 1300 | 1         | 0        | \$0                      |
| Atlantic Beach  | 7/18/2004 | 800  | 1         | 0        | \$0                      |
| Carteret (Zone) | 7/24/2006 | 930  | 1         | 0        | \$0                      |
| Carteret (Zone) | 5/5/2007  | 900  | 1         | 0        | \$0                      |
| Carteret (Zone) | 8/24/2010 | 1450 | 1         | 0        | \$0                      |
| Carteret (Zone) | 6/1/2013  | 1537 | 1         | 0        | \$0                      |
| Carteret (Zone) | 7/11/2013 | 800  | 1         | 0        | \$0                      |
| Carteret (Zone) | 6/10/2017 | 1730 | 1         | 0        | \$0                      |
| Carteret (Zone) | 6/10/2017 | 1730 | 1         | 0        | \$0                      |
| Carteret (Zone) | 6/17/2017 | 1000 | 1         | 0        | \$0                      |
| Carteret (Zone) | 6/18/2017 | 1000 | 1         | 0        | \$0                      |
| Carteret (Zone) | 7/11/2017 | 1404 | 1         | 0        | \$0                      |
| Carteret (Zone) | 6/15/2018 | 1813 | 1         | 0        | \$0                      |
| Carteret (Zone) | 7/25/2018 | 1330 | 1         | 0        | \$0                      |
| Carteret (Zone) | 5/4/2019  | 1523 | 1         | 0        | \$0                      |
| Carteret (Zone) | 5/14/2019 | 1245 | 2         | 0        | \$0                      |
| Carteret (Zone) | 5/21/2019 | 1200 | 1         | 0        | \$0                      |
| Carteret (Zone) | 5/26/2019 | 1400 | 1         | 0        | \$0                      |
| Carteret (Zone) | 7/12/2020 | 1500 | 2         | 0        | \$0                      |
| <b>Total</b>    |           |      | <b>22</b> | <b>0</b> | <b>\$0</b>               |

Source: NCEI Storm Events Database

The following narratives detail selected events reported in the table above:

**July 18, 2004** – Rip Currents were prevalent along the south facing beaches in Eastern North Carolina with many rescues on this day. One young woman drowned during the afternoon hours.

**May 5, 2007** – A 35-year old male was pulled out to sea in a rip current and drowned near Fort Macon in Atlantic Beach. The man entered the water to try and save two children who were in distress.

**June 18, 2017** – A 21-year old gentleman was reportedly attempting to save others caught in a rip current off the Atlantic Beach on Sunday June 18 has died in the hospital on June 19. This gentleman was among five people who were in distress when Atlantic Beach Fire Department responded to the unprotected section of the beach near the Doubletree Inn.

**July 25, 2018** – A man was pulled from the ocean in the 9000 block of Emerald Isle. Attempts to revive him were unsuccessful. There were several other water rescues around 2PM. Approximately 10 people were pulled out of the water. Lifeguards said there was a bad rip current and strong undertow that led to the rescues. A high rip current risk was in effect and red flags were flying.

**May 19, 2019** – Two swimmers were swept out in a rip current near Oceanana Pier on Atlantic Beach Tuesday afternoon (5/14). Emergency personnel responded and pulled the victims from the water and transported them to the hospital, where they later died.

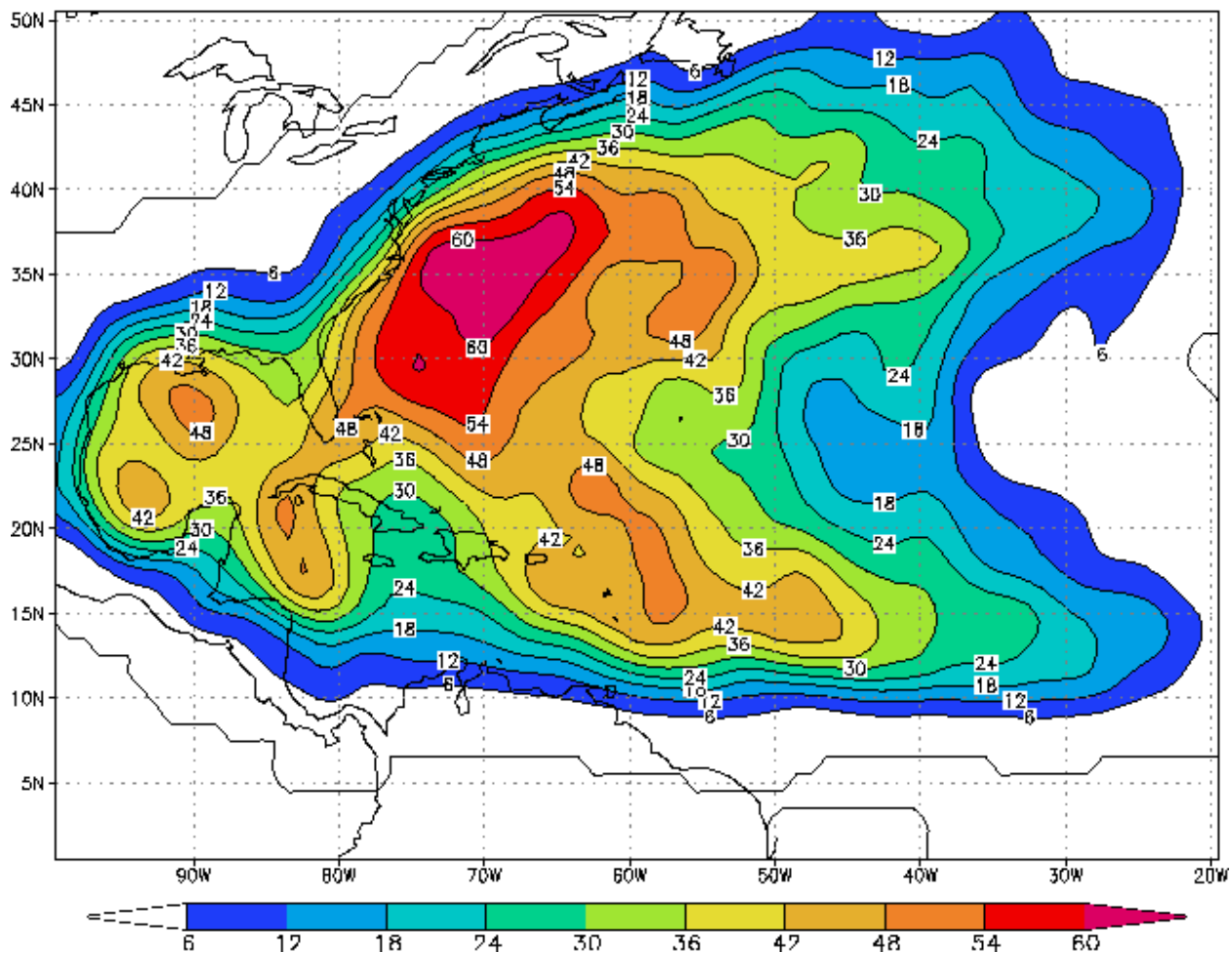
**July 12, 2020** – Emerald Isle officials say two men died Sunday afternoon after drowning in the ocean. The victims were two men, from Cornelius, NC, and from Raleigh, NC. The town manager said that a 911 call was made shortly after 4 p.m. for two swimmers in distress in the area of 9901 Coast Guard Road in the beach strand near Shipwreck Lane. Four surfers and a town lifeguard went into the water and pulled

the two men to shore. Emergency personnel attempted life-saving measures but were unable to revive the men.

### PROBABILITY OF FUTURE OCCURRENCE

Figure 4.42 shows, for any particular location, the chance of a hurricane or tropical storm affecting the area sometime during the Atlantic hurricane season. The figure was created by NOAA’s Hurricane Research Division, using data from 1944 to 1999 and shows the number of times a storm or hurricane was located within approximately 100 miles of a given spot in the Atlantic basin. Per this data, there has been approximately a 36-48% chance of a hurricane impacting the Pamlico Sound Region in any given year.

**Figure 4.42 - Empirical Probability of a Named Hurricane or Tropical Storm**



Source: National Oceanic and Atmospheric Administration, Hurricane Research Division

On average, North Carolina experiences a hurricane approximately once every two years. Per NCEI records, the Pamlico Sound Region has been impacted by hurricane and tropical storm events over the 25-year period from 1999 through 2023, equating to a 100 percent annual probability of occurrence. Of these events, 14 were Category 1 strength winds or greater. Based on these occurrences, there is a 70 percent annual probability of a severe event impacting the Region. However, the HMPC felt that based on past events and potential for changes to hurricane frequency, probability should be rated as highly likely for the region.

*Probability: 4 – Highly Likely*

### EROSION

Erosion and accretion are natural processes that are likely to continue to occur. Although data on historical erosion rates is only available for ocean shorelines, erosion is expected to continue affecting estuarine shorelines as well. The likelihood of significant instances of erosion will likely be tied to the occurrence of hurricane, tropical storm, and nor'easter events.

*Probability: 4 – Highly Likely*

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### RIP CURRENT

Rip currents are ongoing phenomena that are always occurring along ocean surf zones. Rip currents are guaranteed to continue occurring, however, of concern to the HMPC is the probability of rip currents resulting in death, injury, or property damages. NCEI records indicate there have been 22 deaths due to rip currents over a 25-year period from 1999 through 2023. This equates to an 88 percent annual probability of significant rip current impacts. Only Carteret County is exposed to rip currents

*Probability: 3 – Likely*

### CLIMATE CHANGE

North Carolina's coastal location makes it a prime target for hurricane landfalls, and changing climate and weather conditions may increase the number and frequency of future hurricane events. Hurricanes and other coastal storms may result in increased flooding, injuries, deaths, and extreme property loss. According to the US Government Accountability Office, national storm losses from changing frequency and intensity of storms is projected to increase anywhere from \$4-6 billion in the near future.

According to NOAA, weather extremes will likely cause more frequent, stronger storms in the future due to rising surface temperatures. NOAA models predict that while there may be less frequent, low-category storm events (Tropical Storms, Category 1 Hurricanes), there will be more, high-category storm events (Category 4 and 5 Hurricanes) in the future. This means that there may be fewer hurricanes overall in any given year, but when hurricanes do form, it is more likely that they will become large storms that can create massive damage.

As a result of changes to the frequency and intensity of tropical storms and heavy rainfall events, erosion typically caused by these storms could be expected to occur more frequently. Coastal erosion is also expected to increase as a result of sea level rise.

Research on the impacts of climate change on rip currents are limited; however, the climate change factors that affect coastal erosion may also impact rip currents. Erosion and accretion result in changes to coastal bathymetry, which affects the location of rip currents. As large-scale erosion events occur more frequently, the location of rip currents may become more unpredictable.

### VULNERABILITY ASSESSMENT

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#### METHODOLOGIES AND ASSUMPTIONS

Property at risk to hurricanes was estimated using data from the IRISK database, which was compiled in NCEM's Risk Management Tool. The vulnerability data displayed below is for wind-related damages. Hurricanes may also cause substantial damages from heavy rains and subsequent flooding, which is addressed in Section 4.5.5 Flood.



**PEOPLE**

Children, elderly people, individuals with disabilities, and others who may have difficulty evacuating are especially vulnerable to harm from hurricanes. For those who are unable to evacuate for medical reasons, there should be provision to take care of special-needs patients and those in hospitals and nursing homes. Many of these patients are either oxygen-dependent, insulin-dependent, or in need of intensive medical care. There is a need to provide ongoing treatment for these vulnerable citizens, either on the coast or by air evacuation to upland hospitals. The stress from disasters such as a hurricane can result in immediate and long-term physical and emotional health problems among victims.

Erosion is unlikely to have any direct impact on the health or safety of individuals. However, it may cause indirect harm by weakening structures and by changing landscapes in ways that increase risk of other hazard impacts. For example, erosion of dune systems causes areas protected by those dunes to face higher levels of risk.

Rip currents pose a direct risk to human health and safety. Individuals who do not know how to recognize and avoid or escape rip currents are at risk of drowning. Since 1999, NCEI records reflect 22 fatalities attributed to rip currents in the Region.

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**PROPERTY**

General damages to property are both direct (what the winds associated with hurricanes physically destroy) and indirect, which focuses on additional costs, damages and losses attributed to secondary hazards spawned by the hurricane, or due to the damages caused by the storm. Depending on the size and strength of the hurricane, associated winds are capable of damaging and eventually destroying almost anything. Construction practices and building codes can help maximize the resistance of structures to damage.

Secondary impacts of damage due to hurricane winds often result from damage to infrastructure. Downed power and communications transmission lines, coupled with disruptions to transportation, create difficulties in reporting and responding to emergencies. These impacts of a hurricane put tremendous strain on a community. In the immediate aftermath of a hurricane, the focus is on emergency services.

Table 4.62 through Table 4.66 detail buildings at risk and provide damage estimates across all jurisdictions for the 25-, 50-, 100-, 300-, and 700-year hurricane wind events. All scenarios impacted the same number of buildings but with varying severity of damage.

Damage estimates for the 100-year hurricane wind event total \$1,780,717,854 which equates to a loss ratio of 7.7 percent. The loss ratio is the damage estimate divided by the total potential exposure (i.e., total value of all buildings in the planning area), displayed as a percentage of value at risk. FEMA considers loss ratios greater than 10% to be significant and an indicator a community may have more difficulties recovering from an event. These damage estimates account for only wind impacts and actual damages would likely be higher due to flooding. Therefore, the Region would likely experience a higher overall loss ratio from the 100-year hurricane event and face difficulty recovering from such an event.

**SECTION 4: RISK ASSESSMENT**

**Table 4.62 - Buildings at Risk from 25-Year Hurricane Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                    | Total Buildings at Risk |            |                      |
|--------------------------------|---------------|-------------------------------|------------|----------------------|------------------------------|------------|---------------------|--------------------------|------------|--------------------|-------------------------|------------|----------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages  | Num                     | % of Total | Estimated Damages    |
| <b>Beaufort</b>                |               |                               |            |                      |                              |            |                     |                          |            |                    |                         |            |                      |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85%        | \$12,394,722         | 2,003                        | 10%        | \$2,375,675         | 353                      | 2%         | \$1,549,954        | 19,912                  | 97%        | \$16,320,351         |
| City of Washington             | 5,790         | 4,828                         | 83%        | \$4,654,798          | 709                          | 12%        | \$22,493,612        | 197                      | 3%         | \$1,310,494        | 5,734                   | 99%        | \$28,458,904         |
| Town of Aurora                 | 579           | 440                           | 76%        | \$435,012            | 85                           | 15%        | \$57,065            | 33                       | 6%         | \$107,515          | 558                     | 96%        | \$599,591            |
| Town of Bath                   | 561           | 471                           | 84%        | \$552,101            | 51                           | 9%         | \$41,159            | 31                       | 6%         | \$71,885           | 553                     | 99%        | \$665,144            |
| Town of Belhaven               | 1,087         | 857                           | 79%        | \$595,820            | 93                           | 9%         | \$91,909            | 24                       | 2%         | \$49,750           | 974                     | 90%        | \$737,480            |
| Town of Chocowinity            | 398           | 330                           | 83%        | \$326,632            | 36                           | 9%         | \$100,895           | 28                       | 7%         | \$72,274           | 394                     | 99%        | \$499,802            |
| Town of Pantego                | 132           | 108                           | 82%        | \$103,261            | 11                           | 8%         | \$5,172             | 7                        | 5%         | \$19,261           | 126                     | 95%        | \$127,694            |
| Town of Washington Park        | 232           | 171                           | 74%        | \$146,954            | 13                           | 6%         | \$75,424            | 0                        | 0%         | \$0                | 184                     | 79%        | \$222,378            |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84%</b> | <b>\$19,209,300</b>  | <b>3,001</b>                 | <b>10%</b> | <b>\$25,240,911</b> | <b>673</b>               | <b>2%</b>  | <b>\$3,181,133</b> | <b>28,435</b>           | <b>97%</b> | <b>\$47,631,344</b>  |
| <b>Carteret</b>                |               |                               |            |                      |                              |            |                     |                          |            |                    |                         |            |                      |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46%        | \$22,232,540         | 1,000                        | 3%         | \$2,203,925         | 229                      | 1%         | \$3,710,703        | 14,792                  | 51%        | \$28,147,168         |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78%        | \$12,402,873         | 153                          | 4%         | \$2,326,155         | 9                        | 0%         | \$29,410           | 3,382                   | 82%        | \$14,758,438         |
| Town of Beaufort               | 4,605         | 2,878                         | 62%        | \$6,693,342          | 280                          | 6%         | \$1,545,500         | 78                       | 2%         | \$949,421          | 3,236                   | 70%        | \$9,188,263          |
| Town of Bogue                  | 642           | 324                           | 50%        | \$676,974            | 31                           | 5%         | \$65,643            | 8                        | 1%         | \$36,287           | 363                     | 57%        | \$778,905            |
| Town of Cape Carteret          | 1,763         | 872                           | 49%        | \$1,611,680          | 91                           | 5%         | \$223,271           | 26                       | 1%         | \$77,803           | 989                     | 56%        | \$1,912,753          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66%        | \$2,010,300          | 101                          | 5%         | \$483,651           | 10                       | 1%         | \$97,956           | 1,367                   | 71%        | \$2,591,907          |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72%        | \$25,546,696         | 156                          | 2%         | \$435,793           | 19                       | 0%         | \$348,276          | 5,307                   | 74%        | \$26,330,765         |
| Town of Indian Beach           | 1,138         | 790                           | 69%        | \$3,156,347          | 24                           | 2%         | \$135,328           | 6                        | 1%         | \$40,513           | 820                     | 72%        | \$3,332,188          |
| Town of Morehead City          | 10,811        | 6,703                         | 62%        | \$17,351,721         | 832                          | 8%         | \$2,438,699         | 214                      | 2%         | \$3,352,447        | 7,749                   | 72%        | \$23,142,867         |
| Town of Newport                | 5,441         | 3,636                         | 67%        | \$4,544,584          | 347                          | 6%         | \$805,529           | 97                       | 2%         | \$465,999          | 4,080                   | 75%        | \$5,816,112          |
| Town of Peletier               | 943           | 469                           | 50%        | \$632,627            | 52                           | 6%         | \$649,828           | 8                        | 1%         | \$122,579          | 529                     | 56%        | \$1,405,035          |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62%        | \$11,926,408         | 79                           | 4%         | \$413,299           | 29                       | 1%         | \$406,538          | 1,499                   | 67%        | \$12,746,245         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57%</b> | <b>\$108,786,092</b> | <b>3,146</b>                 | <b>4%</b>  | <b>\$11,726,621</b> | <b>733</b>               | <b>1%</b>  | <b>\$9,637,932</b> | <b>44,113</b>           | <b>63%</b> | <b>\$130,150,646</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|-------------------------------|----------------|-------------------------------|------------|----------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Craven</b>                 |                |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89%        | \$18,608,505         | 2,034                        | 8%         | \$7,044,450         | 305                      | 1%         | \$2,162,851         | 24,458                  | 98%        | \$27,815,805         |
| City of Havelock              | 5,417          | 4,844                         | 89%        | \$5,647,982          | 367                          | 7%         | \$5,045,033         | 148                      | 3%         | \$28,012,759        | 5,359                   | 99%        | \$38,705,775         |
| City of New Bern              | 13,049         | 11,331                        | 87%        | \$7,890,296          | 1,239                        | 9%         | \$12,696,409        | 298                      | 2%         | \$6,032,507         | 12,868                  | 99%        | \$26,619,212         |
| Town of Bridgeton             | 326            | 232                           | 71%        | \$123,193            | 70                           | 21%        | \$41,907            | 10                       | 3%         | \$4,848             | 312                     | 96%        | \$169,948            |
| Town of Cove City             | 294            | 252                           | 86%        | \$191,442            | 29                           | 10%        | \$17,114            | 12                       | 4%         | \$109,805           | 293                     | 100%       | \$318,361            |
| Town of Dover                 | 299            | 276                           | 92%        | \$174,458            | 6                            | 2%         | \$4,146             | 17                       | 6%         | \$39,232            | 299                     | 100%       | \$217,836            |
| Town of River Bend            | 1,553          | 1,516                         | 98%        | \$1,297,608          | 25                           | 2%         | \$240,150           | 3                        | 0%         | \$9,613             | 1,544                   | 99%        | \$1,547,370          |
| Town of Trent Woods           | 1,918          | 1,868                         | 97%        | \$1,847,225          | 20                           | 1%         | \$48,268            | 21                       | 1%         | \$65,034            | 1,909                   | 100%       | \$1,960,527          |
| Town of Vanceboro             | 522            | 411                           | 79%        | \$311,698            | 76                           | 15%        | \$241,033           | 33                       | 6%         | \$255,417           | 520                     | 100%       | \$808,148            |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89%</b> | <b>\$36,092,407</b>  | <b>3,866</b>                 | <b>8%</b>  | <b>\$25,378,510</b> | <b>847</b>               | <b>2%</b>  | <b>\$36,692,066</b> | <b>47,562</b>           | <b>99%</b> | <b>\$98,162,982</b>  |
| <b>Pamlico</b>                |                |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88%        | \$5,565,598          | 483                          | 8%         | \$359,959           | 70                       | 1%         | \$63,175            | 6,233                   | 97%        | \$5,988,731          |
| Town of Alliance              | 577            | 484                           | 84%        | \$271,487            | 78                           | 14%        | \$25,040            | 14                       | 2%         | \$5,240             | 576                     | 100%       | \$301,767            |
| Town of Arapahoe              | 430            | 386                           | 90%        | \$257,259            | 26                           | 6%         | \$35,408            | 16                       | 4%         | \$62,799            | 428                     | 100%       | \$355,466            |
| Town of Bayboro               | 515            | 408                           | 79%        | \$253,036            | 74                           | 14%        | \$41,339            | 31                       | 6%         | \$52,349            | 513                     | 100%       | \$346,724            |
| Town of Grantsboro            | 584            | 527                           | 90%        | \$201,293            | 36                           | 6%         | \$33,791            | 17                       | 3%         | \$28,582            | 580                     | 99%        | \$263,667            |
| Town of Mesic                 | 186            | 170                           | 91%        | \$76,464             | 10                           | 5%         | \$1,142             | 5                        | 3%         | \$931               | 185                     | 99%        | \$78,537             |
| Town of Minnesott Beach       | 403            | 385                           | 96%        | \$978,817            | 14                           | 3%         | \$125,388           | 2                        | 0%         | \$7,617             | 401                     | 100%       | \$1,111,822          |
| Town of Oriental              | 1,378          | 1,205                         | 87%        | \$2,936,783          | 100                          | 7%         | \$128,861           | 13                       | 1%         | \$32,329            | 1,318                   | 96%        | \$3,097,973          |
| Town of Stonewall             | 227            | 199                           | 88%        | \$135,252            | 21                           | 9%         | \$9,446             | 6                        | 3%         | \$9,601             | 226                     | 100%       | \$154,298            |
| Town of Vandemere             | 192            | 133                           | 69%        | \$67,016             | 1                            | 1%         | \$60                | 6                        | 3%         | \$2,107             | 140                     | 73%        | \$69,183             |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88%</b> | <b>\$10,743,005</b>  | <b>843</b>                   | <b>8%</b>  | <b>\$760,434</b>    | <b>180</b>               | <b>2%</b>  | <b>\$264,730</b>    | <b>10,600</b>           | <b>97%</b> | <b>\$11,768,168</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74%</b> | <b>\$174,830,804</b> | <b>10,856</b>                | <b>7%</b>  | <b>\$63,106,476</b> | <b>2,433</b>             | <b>2%</b>  | <b>\$49,775,861</b> | <b>130,710</b>          | <b>82%</b> | <b>\$287,713,140</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.63 – Buildings at Risk from 50-Year Hurricane Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|--------------------------------|---------------|-------------------------------|------------|----------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Beaufort</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85%        | \$34,215,311         | 2,003                        | 10%        | \$6,566,550         | 353                      | 2%         | \$4,524,718         | 19,912                  | 97%        | \$45,306,579         |
| City of Washington             | 5,790         | 4,828                         | 83%        | \$12,143,204         | 709                          | 12%        | \$37,297,843        | 197                      | 3%         | \$3,299,935         | 5,734                   | 99%        | \$52,740,981         |
| Town of Aurora                 | 579           | 440                           | 76%        | \$1,192,107          | 85                           | 15%        | \$194,958           | 33                       | 6%         | \$338,887           | 558                     | 96%        | \$1,725,951          |
| Town of Bath                   | 561           | 471                           | 84%        | \$1,481,558          | 51                           | 9%         | \$148,369           | 31                       | 6%         | \$220,548           | 553                     | 99%        | \$1,850,476          |
| Town of Belhaven               | 1,087         | 857                           | 79%        | \$1,560,724          | 93                           | 9%         | \$386,269           | 24                       | 2%         | \$147,776           | 974                     | 90%        | \$2,094,769          |
| Town of Chocowinity            | 398           | 330                           | 83%        | \$920,495            | 36                           | 9%         | \$290,070           | 28                       | 7%         | \$252,083           | 394                     | 99%        | \$1,462,649          |
| Town of Pantego                | 132           | 108                           | 82%        | \$259,783            | 11                           | 8%         | \$20,194            | 7                        | 5%         | \$57,509            | 126                     | 95%        | \$337,487            |
| Town of Washington Park        | 232           | 171                           | 74%        | \$365,044            | 13                           | 6%         | \$151,071           | 0                        | 0%         | \$0                 | 184                     | 79%        | \$516,115            |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84%</b> | <b>\$52,138,226</b>  | <b>3,001</b>                 | <b>10%</b> | <b>\$45,055,324</b> | <b>673</b>               | <b>2%</b>  | <b>\$8,841,456</b>  | <b>28,435</b>           | <b>97%</b> | <b>\$106,035,007</b> |
| <b>Carteret</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46%        | \$56,977,693         | 1,000                        | 3%         | \$6,293,936         | 229                      | 1%         | \$8,253,465         | 14,792                  | 51%        | \$71,525,094         |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78%        | \$36,958,467         | 153                          | 4%         | \$4,379,703         | 9                        | 0%         | \$86,815            | 3,382                   | 82%        | \$41,424,985         |
| Town of Beaufort               | 4,605         | 2,878                         | 62%        | \$19,725,723         | 280                          | 6%         | \$4,083,606         | 78                       | 2%         | \$2,476,333         | 3,236                   | 70%        | \$26,285,662         |
| Town of Bogue                  | 642           | 324                           | 50%        | \$1,678,685          | 31                           | 5%         | \$244,024           | 8                        | 1%         | \$111,311           | 363                     | 57%        | \$2,034,020          |
| Town of Cape Carteret          | 1,763         | 872                           | 49%        | \$4,379,217          | 91                           | 5%         | \$774,231           | 26                       | 1%         | \$267,859           | 989                     | 56%        | \$5,421,307          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66%        | \$5,430,280          | 101                          | 5%         | \$1,155,918         | 10                       | 1%         | \$292,556           | 1,367                   | 71%        | \$6,878,754          |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72%        | \$75,975,631         | 156                          | 2%         | \$1,539,300         | 19                       | 0%         | \$832,295           | 5,307                   | 74%        | \$78,347,226         |
| Town of Indian Beach           | 1,138         | 790                           | 69%        | \$7,935,572          | 24                           | 2%         | \$460,264           | 6                        | 1%         | \$149,764           | 820                     | 72%        | \$8,545,600          |
| Town of Morehead City          | 10,811        | 6,703                         | 62%        | \$43,865,125         | 832                          | 8%         | \$8,024,481         | 214                      | 2%         | \$10,051,128        | 7,749                   | 72%        | \$61,940,734         |
| Town of Newport                | 5,441         | 3,636                         | 67%        | \$11,328,706         | 347                          | 6%         | \$1,828,151         | 97                       | 2%         | \$1,089,221         | 4,080                   | 75%        | \$14,246,078         |
| Town of Peletier               | 943           | 469                           | 50%        | \$1,613,727          | 52                           | 6%         | \$1,102,237         | 8                        | 1%         | \$287,980           | 529                     | 56%        | \$3,003,945          |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62%        | \$29,982,360         | 79                           | 4%         | \$1,170,261         | 29                       | 1%         | \$1,191,466         | 1,499                   | 67%        | \$32,344,088         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57%</b> | <b>\$295,851,186</b> | <b>3,146</b>                 | <b>4%</b>  | <b>\$31,056,112</b> | <b>733</b>               | <b>1%</b>  | <b>\$25,090,193</b> | <b>44,113</b>           | <b>63%</b> | <b>\$351,997,493</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                      |
|-------------------------------|----------------|-------------------------------|------------|----------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|----------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages    |
| <b>Craven</b>                 |                |                               |            |                      |                              |            |                      |                          |            |                      |                         |            |                      |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89%        | \$60,733,817         | 2,034                        | 8%         | \$21,645,722         | 305                      | 1%         | \$7,093,011          | 24,458                  | 98%        | \$89,472,551         |
| City of Havelock              | 5,417          | 4,844                         | 89%        | \$12,221,043         | 367                          | 7%         | \$11,531,941         | 148                      | 3%         | \$54,524,800         | 5,359                   | 99%        | \$78,277,784         |
| City of New Bern              | 13,049         | 11,331                        | 87%        | \$21,715,651         | 1,239                        | 9%         | \$26,251,994         | 298                      | 2%         | \$12,669,822         | 12,868                  | 99%        | \$60,637,467         |
| Town of Bridgeton             | 326            | 232                           | 71%        | \$353,340            | 70                           | 21%        | \$147,528            | 10                       | 3%         | \$17,294             | 312                     | 96%        | \$518,161            |
| Town of Cove City             | 294            | 252                           | 86%        | \$401,376            | 29                           | 10%        | \$66,422             | 12                       | 4%         | \$263,718            | 293                     | 100%       | \$731,516            |
| Town of Dover                 | 299            | 276                           | 92%        | \$448,451            | 6                            | 2%         | \$22,094             | 17                       | 6%         | \$160,593            | 299                     | 100%       | \$631,139            |
| Town of River Bend            | 1,553          | 1,516                         | 98%        | \$2,507,512          | 25                           | 2%         | \$509,951            | 3                        | 0%         | \$28,217             | 1,544                   | 99%        | \$3,045,681          |
| Town of Trent Woods           | 1,918          | 1,868                         | 97%        | \$3,994,423          | 20                           | 1%         | \$129,224            | 21                       | 1%         | \$200,909            | 1,909                   | 100%       | \$4,324,557          |
| Town of Vanceboro             | 522            | 411                           | 79%        | \$681,639            | 76                           | 15%        | \$545,890            | 33                       | 6%         | \$755,698            | 520                     | 100%       | \$1,983,227          |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89%</b> | <b>\$103,057,252</b> | <b>3,866</b>                 | <b>8%</b>  | <b>\$60,850,766</b>  | <b>847</b>               | <b>2%</b>  | <b>\$75,714,062</b>  | <b>47,562</b>           | <b>99%</b> | <b>\$239,622,083</b> |
| <b>Pamlico</b>                |                |                               |            |                      |                              |            |                      |                          |            |                      |                         |            |                      |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88%        | \$18,014,166         | 483                          | 8%         | \$1,531,477          | 70                       | 1%         | \$493,447            | 6,233                   | 97%        | \$20,039,089         |
| Town of Alliance              | 577            | 484                           | 84%        | \$1,508,015          | 78                           | 14%        | \$423,757            | 14                       | 2%         | \$82,246             | 576                     | 100%       | \$2,014,018          |
| Town of Arapahoe              | 430            | 386                           | 90%        | \$604,506            | 26                           | 6%         | \$118,070            | 16                       | 4%         | \$257,837            | 428                     | 100%       | \$980,414            |
| Town of Bayboro               | 515            | 408                           | 79%        | \$1,380,460          | 74                           | 14%        | \$520,432            | 31                       | 6%         | \$1,064,807          | 513                     | 100%       | \$2,965,699          |
| Town of Grantsboro            | 584            | 527                           | 90%        | \$780,996            | 36                           | 6%         | \$292,038            | 17                       | 3%         | \$272,939            | 580                     | 99%        | \$1,345,973          |
| Town of Mesic                 | 186            | 170                           | 91%        | \$466,260            | 10                           | 5%         | \$27,795             | 5                        | 3%         | \$12,949             | 185                     | 99%        | \$507,004            |
| Town of Minnesott Beach       | 403            | 385                           | 96%        | \$2,681,419          | 14                           | 3%         | \$319,461            | 2                        | 0%         | \$27,548             | 401                     | 100%       | \$3,028,428          |
| Town of Oriental              | 1,378          | 1,205                         | 87%        | \$8,554,846          | 100                          | 7%         | \$452,320            | 13                       | 1%         | \$122,412            | 1,318                   | 96%        | \$9,129,578          |
| Town of Stonewall             | 227            | 199                           | 88%        | \$1,061,255          | 21                           | 9%         | \$175,073            | 6                        | 3%         | \$117,836            | 226                     | 100%       | \$1,354,164          |
| Town of Vandemere             | 192            | 133                           | 69%        | \$424,253            | 1                            | 1%         | \$713                | 6                        | 3%         | \$28,683             | 140                     | 73%        | \$453,649            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88%</b> | <b>\$35,476,176</b>  | <b>843</b>                   | <b>8%</b>  | <b>\$3,861,136</b>   | <b>180</b>               | <b>2%</b>  | <b>\$2,480,704</b>   | <b>10,600</b>           | <b>97%</b> | <b>\$41,818,016</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74%</b> | <b>\$486,522,840</b> | <b>10,856</b>                | <b>7%</b>  | <b>\$140,823,338</b> | <b>2,433</b>             | <b>2%</b>  | <b>\$112,126,415</b> | <b>130,710</b>          | <b>82%</b> | <b>\$739,472,599</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.64 - Buildings at Risk from 100-Year Hurricane Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|--------------------------------|---------------|-------------------------------|------------|----------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Beaufort</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85%        | \$93,340,728         | 2,003                        | 10%        | \$16,121,793        | 353                      | 2%         | \$11,260,161        | 19,912                  | 97%        | \$120,722,681        |
| City of Washington             | 5,790         | 4,828                         | 83%        | \$31,249,826         | 709                          | 12%        | \$56,313,978        | 197                      | 3%         | \$7,329,264         | 5,734                   | 99%        | \$94,893,067         |
| Town of Aurora                 | 579           | 440                           | 76%        | \$3,277,485          | 85                           | 15%        | \$596,894           | 33                       | 6%         | \$877,127           | 558                     | 96%        | \$4,751,506          |
| Town of Bath                   | 561           | 471                           | 84%        | \$4,425,410          | 51                           | 9%         | \$487,090           | 31                       | 6%         | \$623,741           | 553                     | 99%        | \$5,536,240          |
| Town of Belhaven               | 1,087         | 857                           | 79%        | \$4,462,411          | 93                           | 9%         | \$1,417,190         | 24                       | 2%         | \$442,136           | 974                     | 90%        | \$6,321,737          |
| Town of Chocowinity            | 398           | 330                           | 83%        | \$2,655,976          | 36                           | 9%         | \$782,519           | 28                       | 7%         | \$730,101           | 394                     | 99%        | \$4,168,595          |
| Town of Pantego                | 132           | 108                           | 82%        | \$726,881            | 11                           | 8%         | \$73,370            | 7                        | 5%         | \$135,368           | 126                     | 95%        | \$935,618            |
| Town of Washington Park        | 232           | 171                           | 74%        | \$1,105,258          | 13                           | 6%         | \$253,041           | 0                        | 0%         | \$0                 | 184                     | 79%        | \$1,358,299          |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84%</b> | <b>\$141,243,975</b> | <b>3,001</b>                 | <b>10%</b> | <b>\$76,045,875</b> | <b>673</b>               | <b>2%</b>  | <b>\$21,397,898</b> | <b>28,435</b>           | <b>97%</b> | <b>\$238,687,743</b> |
| <b>Carteret</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46%        | \$138,358,169        | 1,000                        | 3%         | \$15,890,065        | 229                      | 1%         | \$17,443,811        | 14,792                  | 51%        | \$171,692,045        |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78%        | \$89,982,008         | 153                          | 4%         | \$7,925,906         | 9                        | 0%         | \$225,437           | 3,382                   | 82%        | \$98,133,351         |
| Town of Beaufort               | 4,605         | 2,878                         | 62%        | \$49,762,958         | 280                          | 6%         | \$10,033,990        | 78                       | 2%         | \$5,653,394         | 3,236                   | 70%        | \$65,450,342         |
| Town of Bogue                  | 642           | 324                           | 50%        | \$3,940,001          | 31                           | 5%         | \$689,017           | 8                        | 1%         | \$294,116           | 363                     | 57%        | \$4,923,134          |
| Town of Cape Carteret          | 1,763         | 872                           | 49%        | \$10,946,092         | 91                           | 5%         | \$2,198,222         | 26                       | 1%         | \$787,273           | 989                     | 56%        | \$13,931,586         |
| Town of Cedar Point            | 1,915         | 1,256                         | 66%        | \$13,205,971         | 101                          | 5%         | \$2,581,437         | 10                       | 1%         | \$760,436           | 1,367                   | 71%        | \$16,547,844         |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72%        | \$186,604,819        | 156                          | 2%         | \$4,151,747         | 19                       | 0%         | \$1,829,032         | 5,307                   | 74%        | \$192,585,599        |
| Town of Indian Beach           | 1,138         | 790                           | 69%        | \$17,316,501         | 24                           | 2%         | \$1,106,240         | 6                        | 1%         | \$376,273           | 820                     | 72%        | \$18,799,014         |
| Town of Morehead City          | 10,811        | 6,703                         | 62%        | \$104,213,103        | 832                          | 8%         | \$22,209,317        | 214                      | 2%         | \$25,727,286        | 7,749                   | 72%        | \$152,149,707        |
| Town of Newport                | 5,441         | 3,636                         | 67%        | \$28,028,111         | 347                          | 6%         | \$4,047,500         | 97                       | 2%         | \$2,433,916         | 4,080                   | 75%        | \$34,509,526         |
| Town of Peletier               | 943           | 469                           | 50%        | \$3,845,420          | 52                           | 6%         | \$1,829,251         | 8                        | 1%         | \$575,054           | 529                     | 56%        | \$6,249,725          |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62%        | \$66,308,974         | 79                           | 4%         | \$2,684,385         | 29                       | 1%         | \$2,693,860         | 1,499                   | 67%        | \$71,687,219         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57%</b> | <b>\$712,512,127</b> | <b>3,146</b>                 | <b>4%</b>  | <b>\$75,347,077</b> | <b>733</b>               | <b>1%</b>  | <b>\$58,799,888</b> | <b>44,113</b>           | <b>63%</b> | <b>\$846,659,092</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                      |
|-------------------------------|----------------|-------------------------------|------------|----------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|----------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages    |
| <b>Craven</b>                 |                |                               |            |                      |                              |            |                      |                          |            |                      |                         |            |                      |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89%        | \$157,346,002        | 2,034                        | 8%         | \$44,112,480         | 305                      | 1%         | \$17,136,500         | 24,458                  | 98%        | \$218,594,982        |
| City of Havelock              | 5,417          | 4,844                         | 89%        | \$27,297,993         | 367                          | 7%         | \$25,006,868         | 148                      | 3%         | \$99,871,792         | 5,359                   | 99%        | \$152,176,653        |
| City of New Bern              | 13,049         | 11,331                        | 87%        | \$78,140,193         | 1,239                        | 9%         | \$61,667,666         | 298                      | 2%         | \$30,217,051         | 12,868                  | 99%        | \$170,024,910        |
| Town of Bridgeton             | 326            | 232                           | 71%        | \$2,228,560          | 70                           | 21%        | \$767,700            | 10                       | 3%         | \$168,154            | 312                     | 96%        | \$3,164,414          |
| Town of Cove City             | 294            | 252                           | 86%        | \$1,031,012          | 29                           | 10%        | \$215,498            | 12                       | 4%         | \$554,599            | 293                     | 100%       | \$1,801,108          |
| Town of Dover                 | 299            | 276                           | 92%        | \$1,283,558          | 6                            | 2%         | \$83,027             | 17                       | 6%         | \$499,802            | 299                     | 100%       | \$1,866,387          |
| Town of River Bend            | 1,553          | 1,516                         | 98%        | \$10,630,780         | 25                           | 2%         | \$1,367,951          | 3                        | 0%         | \$86,395             | 1,544                   | 99%        | \$12,085,126         |
| Town of Trent Woods           | 1,918          | 1,868                         | 97%        | \$22,338,007         | 20                           | 1%         | \$823,788            | 21                       | 1%         | \$1,947,166          | 1,909                   | 100%       | \$25,108,962         |
| Town of Vanceboro             | 522            | 411                           | 79%        | \$1,739,732          | 76                           | 15%        | \$1,184,473          | 33                       | 6%         | \$1,776,503          | 520                     | 100%       | \$4,700,708          |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89%</b> | <b>\$302,035,837</b> | <b>3,866</b>                 | <b>8%</b>  | <b>\$135,229,451</b> | <b>847</b>               | <b>2%</b>  | <b>\$152,257,962</b> | <b>47,562</b>           | <b>99%</b> | <b>\$589,523,250</b> |
| <b>Pamlico</b>                |                |                               |            |                      |                              |            |                      |                          |            |                      |                         |            |                      |
| Unincorporated Pamlico County | 6,428          | 408                           | 79%        | \$3,398,710          | 74                           | 14%        | \$1,378,675          | 31                       | 6%         | \$3,280,157          | 513                     | 100%       | \$8,057,542          |
| Town of Alliance              | 577            | 527                           | 90%        | \$1,988,550          | 36                           | 6%         | \$759,972            | 17                       | 3%         | \$742,992            | 580                     | 99%        | \$3,491,514          |
| Town of Arapahoe              | 430            | 170                           | 91%        | \$1,217,573          | 10                           | 5%         | \$80,138             | 5                        | 3%         | \$37,858             | 185                     | 99%        | \$1,335,569          |
| Town of Bayboro               | 515            | 385                           | 96%        | \$6,542,217          | 14                           | 3%         | \$736,025            | 2                        | 0%         | \$65,785             | 401                     | 100%       | \$7,344,027          |
| Town of Grantsboro            | 584            | 1,205                         | 87%        | \$21,082,898         | 100                          | 7%         | \$1,230,056          | 13                       | 1%         | \$343,341            | 1,318                   | 96%        | \$22,656,296         |
| Town of Mesic                 | 186            | 199                           | 88%        | \$2,568,338          | 21                           | 9%         | \$425,651            | 6                        | 3%         | \$304,807            | 226                     | 100%       | \$3,298,796          |
| Town of Minnesott Beach       | 403            | 133                           | 69%        | \$1,063,095          | 1                            | 1%         | \$1,667              | 6                        | 3%         | \$82,270             | 140                     | 73%        | \$1,147,032          |
| Town of Oriental              | 1,378          | 9,577                         | 88%        | \$87,771,967         | 843                          | 8%         | \$10,454,870         | 180                      | 2%         | \$7,620,931          | 10,600                  | 97%        | \$105,847,769        |
| Town of Stonewall             | 227            | 117,421                       | 74%        | \$1,243,563,906      | 10,856                       | 7%         | \$297,077,273        | 2,433                    | 2%         | \$240,076,679        | 130,710                 | 82%        | \$1,780,717,854      |
| Town of Vandemere             | 192            | 408                           | 79%        | \$3,398,710          | 74                           | 14%        | \$1,378,675          | 31                       | 6%         | \$3,280,157          | 513                     | 100%       | \$8,057,542          |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>527</b>                    | <b>90%</b> | <b>\$1,988,550</b>   | <b>36</b>                    | <b>6%</b>  | <b>\$759,972</b>     | <b>17</b>                | <b>3%</b>  | <b>\$742,992</b>     | <b>580</b>              | <b>99%</b> | <b>\$3,491,514</b>   |
| <b>Region Total</b>           | <b>158,620</b> | <b>170</b>                    | <b>91%</b> | <b>\$1,217,573</b>   | <b>10</b>                    | <b>5%</b>  | <b>\$80,138</b>      | <b>5</b>                 | <b>3%</b>  | <b>\$37,858</b>      | <b>185</b>              | <b>99%</b> | <b>\$1,335,569</b>   |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.65 - Buildings at Risk from 300-Year Hurricane Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|--------------------------------|---------------|-------------------------------|------------|------------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Beaufort</b>                |               |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85%        | \$279,786,181          | 2,003                        | 10%        | \$47,106,040         | 353                      | 2%         | \$31,991,136         | 19,912                  | 97%        | \$358,883,357          |
| City of Washington             | 5,790         | 4,828                         | 83%        | \$77,237,281           | 709                          | 12%        | \$87,324,078         | 197                      | 3%         | \$15,648,080         | 5,734                   | 99%        | \$180,209,439          |
| Town of Aurora                 | 579           | 440                           | 76%        | \$15,788,273           | 85                           | 15%        | \$3,382,575          | 33                       | 6%         | \$4,044,355          | 558                     | 96%        | \$23,215,204           |
| Town of Bath                   | 561           | 471                           | 84%        | \$11,252,545           | 51                           | 9%         | \$1,326,019          | 31                       | 6%         | \$1,589,624          | 553                     | 99%        | \$14,168,188           |
| Town of Belhaven               | 1,087         | 857                           | 79%        | \$11,219,607           | 93                           | 9%         | \$3,842,655          | 24                       | 2%         | \$1,180,235          | 974                     | 90%        | \$16,242,497           |
| Town of Chocowinity            | 398           | 330                           | 83%        | \$6,571,326            | 36                           | 9%         | \$1,911,120          | 28                       | 7%         | \$1,790,108          | 394                     | 99%        | \$10,272,554           |
| Town of Pantego                | 132           | 108                           | 82%        | \$1,835,458            | 11                           | 8%         | \$212,349            | 7                        | 5%         | \$261,814            | 126                     | 95%        | \$2,309,620            |
| Town of Washington Park        | 232           | 171                           | 74%        | \$3,101,970            | 13                           | 6%         | \$407,466            | 0                        | 0%         | \$0                  | 184                     | 79%        | \$3,509,435            |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84%</b> | <b>\$406,792,641</b>   | <b>3,001</b>                 | <b>10%</b> | <b>\$145,512,302</b> | <b>673</b>               | <b>2%</b>  | <b>\$56,505,352</b>  | <b>28,435</b>           | <b>97%</b> | <b>\$608,810,294</b>   |
| <b>Carteret</b>                |               |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46%        | \$498,404,777          | 1,000                        | 3%         | \$57,822,476         | 229                      | 1%         | \$53,764,695         | 14,792                  | 51%        | \$609,991,948          |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78%        | \$283,322,901          | 153                          | 4%         | \$21,983,596         | 9                        | 0%         | \$984,529            | 3,382                   | 82%        | \$306,291,025          |
| Town of Beaufort               | 4,605         | 2,878                         | 62%        | \$170,151,547          | 280                          | 6%         | \$40,523,389         | 78                       | 2%         | \$21,507,950         | 3,236                   | 70%        | \$232,182,886          |
| Town of Bogue                  | 642           | 324                           | 50%        | \$13,872,914           | 31                           | 5%         | \$2,448,746          | 8                        | 1%         | \$1,088,595          | 363                     | 57%        | \$17,410,254           |
| Town of Cape Carteret          | 1,763         | 872                           | 49%        | \$40,058,580           | 91                           | 5%         | \$9,203,926          | 26                       | 1%         | \$3,507,148          | 989                     | 56%        | \$52,769,654           |
| Town of Cedar Point            | 1,915         | 1,256                         | 66%        | \$46,431,348           | 101                          | 5%         | \$9,773,868          | 10                       | 1%         | \$2,791,538          | 1,367                   | 71%        | \$58,996,754           |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72%        | \$585,304,687          | 156                          | 2%         | \$14,379,643         | 19                       | 0%         | \$5,500,836          | 5,307                   | 74%        | \$605,185,166          |
| Town of Indian Beach           | 1,138         | 790                           | 69%        | \$49,848,728           | 24                           | 2%         | \$3,126,859          | 6                        | 1%         | \$1,056,280          | 820                     | 72%        | \$54,031,868           |
| Town of Morehead City          | 10,811        | 6,703                         | 62%        | \$372,319,486          | 832                          | 8%         | \$94,532,908         | 214                      | 2%         | \$97,496,363         | 7,749                   | 72%        | \$564,348,757          |
| Town of Newport                | 5,441         | 3,636                         | 67%        | \$106,131,963          | 347                          | 6%         | \$15,942,476         | 97                       | 2%         | \$10,532,479         | 4,080                   | 75%        | \$132,606,919          |
| Town of Peletier               | 943           | 469                           | 50%        | \$13,700,514           | 52                           | 6%         | \$5,052,060          | 8                        | 1%         | \$1,801,528          | 529                     | 56%        | \$20,554,102           |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62%        | \$196,565,583          | 79                           | 4%         | \$8,212,382          | 29                       | 1%         | \$7,414,898          | 1,499                   | 67%        | \$212,192,864          |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57%</b> | <b>\$2,376,113,028</b> | <b>3,146</b>                 | <b>4%</b>  | <b>\$283,002,329</b> | <b>733</b>               | <b>1%</b>  | <b>\$207,446,839</b> | <b>44,113</b>           | <b>63%</b> | <b>\$2,866,562,197</b> |



**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|-------------------------------|----------------|-------------------------------|------------|------------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Craven</b>                 |                |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89%        | \$453,419,833          | 2,034                        | 8%         | \$117,438,027        | 305                      | 1%         | \$54,901,635         | 24,458                  | 98%        | \$625,759,495          |
| City of Havelock              | 5,417          | 4,844                         | 89%        | \$84,764,742           | 367                          | 7%         | \$64,801,576         | 148                      | 3%         | \$180,256,061        | 5,359                   | 99%        | \$329,822,379          |
| City of New Bern              | 13,049         | 11,331                        | 87%        | \$236,958,816          | 1,239                        | 9%         | \$187,288,873        | 298                      | 2%         | \$91,931,939         | 12,868                  | 99%        | \$516,179,629          |
| Town of Bridgeton             | 326            | 232                           | 71%        | \$5,318,017            | 70                           | 21%        | \$3,216,650          | 10                       | 3%         | \$461,686            | 312                     | 96%        | \$8,996,352            |
| Town of Cove City             | 294            | 252                           | 86%        | \$5,312,475            | 29                           | 10%        | \$1,201,302          | 12                       | 4%         | \$2,147,733          | 293                     | 100%       | \$8,661,510            |
| Town of Dover                 | 299            | 276                           | 92%        | \$3,309,742            | 6                            | 2%         | \$208,361            | 17                       | 6%         | \$1,177,123          | 299                     | 100%       | \$4,695,227            |
| Town of River Bend            | 1,553          | 1,516                         | 98%        | \$24,858,552           | 25                           | 2%         | \$3,305,468          | 3                        | 0%         | \$298,096            | 1,544                   | 99%        | \$28,462,116           |
| Town of Trent Woods           | 1,918          | 1,868                         | 97%        | \$52,790,372           | 20                           | 1%         | \$1,896,534          | 21                       | 1%         | \$4,848,303          | 1,909                   | 100%       | \$59,535,209           |
| Town of Vanceboro             | 522            | 411                           | 79%        | \$4,330,892            | 76                           | 15%        | \$2,443,064          | 33                       | 6%         | \$3,314,075          | 520                     | 100%       | \$10,088,031           |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89%</b> | <b>\$871,063,441</b>   | <b>3,866</b>                 | <b>8%</b>  | <b>\$381,799,855</b> | <b>847</b>               | <b>2%</b>  | <b>\$339,336,651</b> | <b>47,562</b>           | <b>99%</b> | <b>\$1,592,199,948</b> |
| <b>Pamlico</b>                |                |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88%        | \$100,591,455          | 483                          | 8%         | \$9,509,029          | 70                       | 1%         | \$3,841,078          | 6,233                   | 97%        | \$113,941,562          |
| Town of Alliance              | 577            | 484                           | 84%        | \$7,698,597            | 78                           | 14%        | \$2,963,275          | 14                       | 2%         | \$579,689            | 576                     | 100%       | \$11,241,560           |
| Town of Arapahoe              | 430            | 386                           | 90%        | \$3,227,354            | 26                           | 6%         | \$826,504            | 16                       | 4%         | \$2,031,385          | 428                     | 100%       | \$6,085,243            |
| Town of Bayboro               | 515            | 408                           | 79%        | \$7,329,527            | 74                           | 14%        | \$3,083,338          | 31                       | 6%         | \$7,893,998          | 513                     | 100%       | \$18,306,864           |
| Town of Grantsboro            | 584            | 527                           | 90%        | \$4,466,451            | 36                           | 6%         | \$1,869,925          | 17                       | 3%         | \$1,769,388          | 580                     | 99%        | \$8,105,764            |
| Town of Mesic                 | 186            | 170                           | 91%        | \$2,741,217            | 10                           | 5%         | \$168,074            | 5                        | 3%         | \$94,647             | 185                     | 99%        | \$3,003,938            |
| Town of Minnesott Beach       | 403            | 385                           | 96%        | \$13,625,435           | 14                           | 3%         | \$1,524,316          | 2                        | 0%         | \$118,170            | 401                     | 100%       | \$15,267,920           |
| Town of Oriental              | 1,378          | 1,205                         | 87%        | \$43,136,258           | 100                          | 7%         | \$2,774,952          | 13                       | 1%         | \$775,791            | 1,318                   | 96%        | \$46,687,000           |
| Town of Stonewall             | 227            | 199                           | 88%        | \$5,061,594            | 21                           | 9%         | \$815,438            | 6                        | 3%         | \$702,337            | 226                     | 100%       | \$6,579,369            |
| Town of Vandemere             | 192            | 133                           | 69%        | \$2,338,039            | 1                            | 1%         | \$3,427              | 6                        | 3%         | \$196,543            | 140                     | 73%        | \$2,538,009            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88%</b> | <b>\$190,215,927</b>   | <b>843</b>                   | <b>8%</b>  | <b>\$23,538,278</b>  | <b>180</b>               | <b>2%</b>  | <b>\$18,003,026</b>  | <b>10,600</b>           | <b>97%</b> | <b>\$231,757,229</b>   |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74%</b> | <b>\$3,844,185,037</b> | <b>10,856</b>                | <b>7%</b>  | <b>\$833,852,764</b> | <b>2,433</b>             | <b>2%</b>  | <b>\$621,291,868</b> | <b>130,710</b>          | <b>82%</b> | <b>\$5,299,329,668</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.66 - Buildings at Risk from 700-Year Hurricane Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|--------------------------------|---------------|-------------------------------|------------|------------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Beaufort</b>                |               |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85%        | \$547,978,631          | 2,003                        | 10%        | \$84,499,861         | 353                      | 2%         | \$55,451,904         | 19,912                  | 97%        | \$687,930,396          |
| City of Washington             | 5,790         | 4,828                         | 83%        | \$168,995,068          | 709                          | 12%        | \$146,133,961        | 197                      | 3%         | \$33,061,571         | 5,734                   | 99%        | \$348,190,600          |
| Town of Aurora                 | 579           | 440                           | 76%        | \$25,830,799           | 85                           | 15%        | \$5,846,858          | 33                       | 6%         | \$6,845,734          | 558                     | 96%        | \$38,523,391           |
| Town of Bath                   | 561           | 471                           | 84%        | \$23,824,806           | 51                           | 9%         | \$3,094,729          | 31                       | 6%         | \$3,583,182          | 553                     | 99%        | \$30,502,717           |
| Town of Belhaven               | 1,087         | 857                           | 79%        | \$23,607,149           | 93                           | 9%         | \$8,065,673          | 24                       | 2%         | \$2,631,660          | 974                     | 90%        | \$34,304,482           |
| Town of Chocowinity            | 398           | 330                           | 83%        | \$13,737,616           | 36                           | 9%         | \$4,230,306          | 28                       | 7%         | \$3,828,002          | 394                     | 99%        | \$21,795,924           |
| Town of Pantego                | 132           | 108                           | 82%        | \$3,864,974            | 11                           | 8%         | \$509,735            | 7                        | 5%         | \$481,582            | 126                     | 95%        | \$4,856,290            |
| Town of Washington Park        | 232           | 171                           | 74%        | \$7,162,324            | 13                           | 6%         | \$693,507            | 0                        | 0%         | \$0                  | 184                     | 79%        | \$7,855,832            |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84%</b> | <b>\$815,001,367</b>   | <b>3,001</b>                 | <b>10%</b> | <b>\$253,074,630</b> | <b>673</b>               | <b>2%</b>  | <b>\$105,883,635</b> | <b>28,435</b>           | <b>97%</b> | <b>\$1,173,959,632</b> |
| <b>Carteret</b>                |               |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46%        | \$717,229,097          | 1,000                        | 3%         | \$84,993,177         | 229                      | 1%         | \$75,802,444         | 14,792                  | 51%        | \$878,024,719          |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78%        | \$373,312,255          | 153                          | 4%         | \$30,678,729         | 9                        | 0%         | \$1,589,229          | 3,382                   | 82%        | \$405,580,213          |
| Town of Beaufort               | 4,605         | 2,878                         | 62%        | \$235,183,970          | 280                          | 6%         | \$64,296,667         | 78                       | 2%         | \$33,496,808         | 3,236                   | 70%        | \$332,977,445          |
| Town of Bogue                  | 642           | 324                           | 50%        | \$19,868,307           | 31                           | 5%         | \$3,304,793          | 8                        | 1%         | \$1,621,697          | 363                     | 57%        | \$24,794,797           |
| Town of Cape Carteret          | 1,763         | 872                           | 49%        | \$57,816,839           | 91                           | 5%         | \$14,038,541         | 26                       | 1%         | \$5,418,650          | 989                     | 56%        | \$77,274,029           |
| Town of Cedar Point            | 1,915         | 1,256                         | 66%        | \$66,468,483           | 101                          | 5%         | \$14,878,942         | 10                       | 1%         | \$3,989,580          | 1,367                   | 71%        | \$85,337,005           |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72%        | \$763,025,706          | 156                          | 2%         | \$19,839,301         | 19                       | 0%         | \$7,602,992          | 5,307                   | 74%        | \$790,468,000          |
| Town of Indian Beach           | 1,138         | 790                           | 69%        | \$66,977,047           | 24                           | 2%         | \$4,071,623          | 6                        | 1%         | \$1,316,859          | 820                     | 72%        | \$72,365,528           |
| Town of Morehead City          | 10,811        | 6,703                         | 62%        | \$535,754,065          | 832                          | 8%         | \$146,195,172        | 214                      | 2%         | \$141,124,979        | 7,749                   | 72%        | \$823,074,216          |
| Town of Newport                | 5,441         | 3,636                         | 67%        | \$158,082,304          | 347                          | 6%         | \$25,528,871         | 97                       | 2%         | \$17,519,348         | 4,080                   | 75%        | \$201,130,522          |
| Town of Peletier               | 943           | 469                           | 50%        | \$20,122,744           | 52                           | 6%         | \$7,511,226          | 8                        | 1%         | \$2,673,215          | 529                     | 56%        | \$30,307,185           |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62%        | \$260,548,329          | 79                           | 4%         | \$11,252,149         | 29                       | 1%         | \$9,657,591          | 1,499                   | 67%        | \$281,458,069          |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57%</b> | <b>\$3,274,389,146</b> | <b>3,146</b>                 | <b>4%</b>  | <b>\$426,589,191</b> | <b>733</b>               | <b>1%</b>  | <b>\$301,813,392</b> | <b>44,113</b>           | <b>63%</b> | <b>\$4,002,791,728</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|-------------------------------|----------------|-------------------------------|------------|------------------------|------------------------------|------------|------------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Craven</b>                 |                |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89%        | \$762,870,051          | 2,034                        | 8%         | \$186,420,304          | 305                      | 1%         | \$89,109,921         | 24,458                  | 98%        | \$1,038,400,276        |
| City of Havelock              | 5,417          | 4,844                         | 89%        | \$149,963,669          | 367                          | 7%         | \$102,157,887          | 148                      | 3%         | \$261,103,383        | 5,359                   | 99%        | \$513,224,939          |
| City of New Bern              | 13,049         | 11,331                        | 87%        | \$425,961,451          | 1,239                        | 9%         | \$319,903,927          | 298                      | 2%         | \$155,316,872        | 12,868                  | 99%        | \$901,182,250          |
| Town of Bridgeton             | 326            | 232                           | 71%        | \$8,668,570            | 70                           | 21%        | \$5,767,927            | 10                       | 3%         | \$826,335            | 312                     | 96%        | \$15,262,831           |
| Town of Cove City             | 294            | 252                           | 86%        | \$5,312,475            | 29                           | 10%        | \$1,201,302            | 12                       | 4%         | \$2,147,733          | 293                     | 100%       | \$8,661,510            |
| Town of Dover                 | 299            | 276                           | 92%        | \$7,101,454            | 6                            | 2%         | \$383,124              | 17                       | 6%         | \$2,223,935          | 299                     | 100%       | \$9,708,514            |
| Town of River Bend            | 1,553          | 1,516                         | 98%        | \$47,790,485           | 25                           | 2%         | \$5,865,469            | 3                        | 0%         | \$565,642            | 1,544                   | 99%        | \$54,221,595           |
| Town of Trent Woods           | 1,918          | 1,868                         | 97%        | \$99,669,833           | 20                           | 1%         | \$3,555,296            | 21                       | 1%         | \$8,687,397          | 1,909                   | 100%       | \$111,912,526          |
| Town of Vanceboro             | 522            | 411                           | 79%        | \$9,339,296            | 76                           | 15%        | \$4,876,547            | 33                       | 6%         | \$5,748,893          | 520                     | 100%       | \$19,964,736           |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89%</b> | <b>\$1,516,677,284</b> | <b>3,866</b>                 | <b>8%</b>  | <b>\$630,131,783</b>   | <b>847</b>               | <b>2%</b>  | <b>\$525,730,111</b> | <b>47,562</b>           | <b>99%</b> | <b>\$2,672,539,177</b> |
| <b>Pamlico</b>                |                |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88%        | \$172,756,064          | 483                          | 8%         | \$16,409,906           | 70                       | 1%         | \$6,135,077          | 6,233                   | 97%        | \$195,301,047          |
| Town of Alliance              | 577            | 484                           | 84%        | \$12,993,215           | 78                           | 14%        | \$5,084,591            | 14                       | 2%         | \$1,052,023          | 576                     | 100%       | \$19,129,829           |
| Town of Arapahoe              | 430            | 386                           | 90%        | \$5,987,102            | 26                           | 6%         | \$1,403,265            | 16                       | 4%         | \$3,408,106          | 428                     | 100%       | \$10,798,474           |
| Town of Bayboro               | 515            | 408                           | 79%        | \$12,403,430           | 74                           | 14%        | \$5,325,983            | 31                       | 6%         | \$13,595,612         | 513                     | 100%       | \$31,325,025           |
| Town of Grantsboro            | 584            | 527                           | 90%        | \$8,254,685            | 36                           | 6%         | \$3,636,909            | 17                       | 3%         | \$3,180,747          | 580                     | 99%        | \$15,072,342           |
| Town of Mesic                 | 186            | 170                           | 91%        | \$4,775,687            | 10                           | 5%         | \$254,272              | 5                        | 3%         | \$179,154            | 185                     | 99%        | \$5,209,112            |
| Town of Minnesott Beach       | 403            | 385                           | 96%        | \$22,452,693           | 14                           | 3%         | \$2,593,087            | 2                        | 0%         | \$167,727            | 401                     | 100%       | \$25,213,507           |
| Town of Oriental              | 1,378          | 1,205                         | 87%        | \$69,190,741           | 100                          | 7%         | \$4,764,418            | 13                       | 1%         | \$1,306,943          | 1,318                   | 96%        | \$75,262,102           |
| Town of Stonewall             | 227            | 199                           | 88%        | \$7,746,597            | 21                           | 9%         | \$1,232,522            | 6                        | 3%         | \$1,281,900          | 226                     | 100%       | \$10,261,019           |
| Town of Vandemere             | 192            | 133                           | 69%        | \$4,018,972            | 1                            | 1%         | \$5,969                | 6                        | 3%         | \$354,072            | 140                     | 73%        | \$4,379,013            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88%</b> | <b>\$320,579,186</b>   | <b>843</b>                   | <b>8%</b>  | <b>\$40,710,922</b>    | <b>180</b>               | <b>2%</b>  | <b>\$30,661,361</b>  | <b>10,600</b>           | <b>97%</b> | <b>\$391,951,470</b>   |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74%</b> | <b>\$5,926,646,983</b> | <b>10,856</b>                | <b>7%</b>  | <b>\$1,350,506,526</b> | <b>2,433</b>             | <b>2%</b>  | <b>\$964,088,499</b> | <b>130,710</b>          | <b>82%</b> | <b>\$8,241,242,007</b> |

Source: NCEM Risk Management Tool

## SECTION 4: RISK ASSESSMENT

Property damage due to erosion typically only results in conjunction with large storm events which also bring wind and water damages. These events can cause scour and weaken foundations, which may undermine affected buildings' structural integrity.

Rip current is unlikely to result in any property damages, though it may result in indirect damages to watercrafts by pushing them into jetties or sandbars.

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### ENVIRONMENT

Hurricane winds can cause massive damage to the natural environment, uprooting trees and other debris within the storm's path. Animals can either be killed directly by the storm or impacted indirectly through changes in habitat and food availability caused by high winds and intense rainfall. Endangered species can be dramatically impacted. Forests can be completely defoliated by strong winds.

Erosion can change the shape and characteristics of coastal shorelines and riverine floodplains. Eroded material may clog waterways and decrease drainage capacity. Erosion can also negatively impact water quality by increasing sediment loads in waterways.

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### CONSEQUENCE ANALYSIS

Table 4.67 summarizes the potential negative consequences of hurricanes and coastal hazards.

**Table 4.67 - Consequence Analysis - Hurricane and Tropical Storm**

| Category  | Consequences  |
|---|---|
| Public  | Impacts from hurricane winds include injury or death, loss of property, outbreak of diseases, mental trauma and loss of livelihoods. Residential, commercial, and public buildings, as well as critical infrastructure such as transportation, water, energy, and communication systems may be damaged or destroyed, resulting in cascading impacts on the public. Erosion is unlikely to impact public health and safety. Rip currents may cause injuries or fatalities. |
| Responders  | Impacts to responders and response capabilities may occur during severe storms. If properly trained, responders are unlikely to be impacted by rip currents. Erosion is unlikely to require immediate response or rescue operations.  |
| Continuity of Operations (including Continued Delivery of Services) | Damage to facilities/personnel from wind may require temporary relocation of some operations. Operations may be interrupted by power outages. Disruption of roads and/or utilities may postpone delivery of some services. Regulatory waivers may be needed locally. Fulfillment of some contracts may be difficult. Impact may reduce deliveries. Erosion and rip tides would not impact public continuity of operations.  |
| Property, Facilities and Infrastructure                             | Structural damage to buildings may occur; loss of glass windows and doors by high winds and debris; loss of roof coverings, partial wall collapses, and other damages requiring significant repairs are possible in a major (category 3 to 5) hurricane. Erosion can result in property damage if it is severe enough or if scour occurs that undermines the integrity of structural foundations. Rip current is unlikely to damage property.                             |
| Environment   | Hurricanes can devastate wooded ecosystems and remove the foliage from tree canopies, and they can drastically change habitats such that the indigenous animal populations suffer. Foods can be taken away as high winds will often strip fruits, seeds and berries from bushes and trees. Secondary impacts may  |

**SECTION 4: RISK ASSESSMENT**

| Category   | Consequences   |
|--|--|
|  | occur; for example, high winds and debris may damage an above-ground fuel tank, resulting in a chemical spill. Erosion can increase sediment loads in waterbodies and change riverine and coastal topography. Rip current will not have severe environmental consequences.   |
| Economic Condition of the Jurisdiction             | Local economy and finances may be adversely affected, possibly for an extended period of time, depending on damages. Intangible impacts, including business interruption and additional living expenses, may also occur. Rip current and severe erosion can negatively impact tourist economies. Beach nourishment projects to counter erosion are extremely costly. |
| Public Confidence in the Jurisdiction's Governance | Public confidence may be affected by a major storm event requiring substantial response and long-term recovery effort. Erosion and rip current are unlikely to affect public confidence.   |

**HAZARD SUMMARY BY JURISDICTION**

The following table summarizes hurricane and tropical storm hazard risk by jurisdiction. Most aspects of hurricane risk do not vary substantially by jurisdiction. While hurricanes have the possibility of being catastrophic across all jurisdictions, certain areas may be even more vulnerable. Mobile home units are more vulnerable to wind damage; therefore, Beaufort and Pamlico Counties, which have higher rates of mobile homes, may experience more severe impacts.

| Jurisdiction              | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|---------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Beaufort County           | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| City of Washington        | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Aurora            | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Bath              | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Belhaven          | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Chocowinity       | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Pantego           | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Washington Park   | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Carteret County           | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Atlantic Beach    | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Beaufort          | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Bogue             | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Cape Carteret     | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Cedar Point       | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Emerald Isle      | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Indian Beach      | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Morehead City     | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Newport           | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Peletier          | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Pine Knoll Shores | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Craven County             | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| City of Havelock          | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| City of New Bern          | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Bridgeton         | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Cove City         | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction            | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|-------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Town of Dover           | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of River Bend      | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Trent Woods     | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Vanceboro       | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Pamlico County          | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Alliance        | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Arapahoe        | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Bayboro         | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Grantsboro      | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Mesic           | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Minnesott Beach | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Oriental        | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Stonewall       | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |
| Town of Vandemere       | 4           | 4      | 4              | 1            | 3        | 3.6   | H        |

The following table summarizes coastal hazard risk by jurisdiction. Where priority ratings vary between erosion and rip current, these scores represent an average rating. Risk to coastal hazards varies based on the presence and type of coastal areas. For example, jurisdictions without oceanfront do not experience rip currents. Jurisdictions with more frequented beaches are likely to see a higher impact due to rip current or could currently be experiencing a slower rate of erosion due to more regular beach nourishment.

| Jurisdiction              | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|---------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Beaufort County           | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| City of Washington        | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Aurora            | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Bath              | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Belhaven          | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Chocowinity       | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Pantego           | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Washington Park   | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Carteret County           | 4           | 2      | 1              | 2            | 3        | 2.5   | M        |
| Town of Atlantic Beach    | 4           | 2      | 1              | 2            | 3        | 2.5   | M        |
| Town of Beaufort          | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Bogue             | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Cape Carteret     | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Cedar Point       | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Emerald Isle      | 4           | 2      | 1              | 2            | 3        | 2.5   | M        |
| Town of Indian Beach      | 4           | 2      | 1              | 2            | 3        | 2.5   | M        |
| Town of Morehead City     | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Newport           | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Peletier          | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |
| Town of Pine Knoll Shores | 4           | 2      | 1              | 2            | 3        | 2.5   | M        |
| Craven County             | 3           | 2      | 1              | 1            | 3        | 2.1   | M        |

**SECTION 4: RISK ASSESSMENT**

| <b>Jurisdiction</b>     | <b>Probability</b> | <b>Impact</b> | <b>Spatial Extent</b> | <b>Warning Time</b> | <b>Duration</b> | <b>Score</b> | <b>Priority</b> |
|-------------------------|--------------------|---------------|-----------------------|---------------------|-----------------|--------------|-----------------|
| City of Havelock        | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| City of New Bern        | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| Town of Bridgeton       | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| Town of Cove City       | 1                  | 1             | 1                     | 1                   | 3               | 1.5          | L               |
| Town of Dover           | 1                  | 1             | 1                     | 1                   | 3               | 1.5          | L               |
| Town of River Bend      | 1                  | 1             | 1                     | 1                   | 3               | 1.5          | L               |
| Town of Trent Woods     | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| Town of Vanceboro       | 1                  | 1             | 1                     | 1                   | 3               | 1.5          | L               |
| Pamlico County          | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| Town of Alliance        | 1                  | 1             | 1                     | 1                   | 3               | 1.5          | L               |
| Town of Arapahoe        | 1                  | 1             | 1                     | 1                   | 3               | 1.5          | L               |
| Town of Bayboro         | 1                  | 1             | 1                     | 1                   | 3               | 1.5          | L               |
| Town of Grantsboro      | 1                  | 1             | 1                     | 1                   | 3               | 1.5          | L               |
| Town of Mesic           | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| Town of Minnesott Beach | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| Town of Oriental        | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| Town of Stonewall       | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |
| Town of Vandemere       | 3                  | 2             | 1                     | 1                   | 3               | 2.1          | M               |

### 4.5.7 SEVERE WINTER WEATHER

#### HAZARD BACKGROUND

Winter weather can range from a moderate snow over a period of a few hours to blizzard conditions with blinding wind-driven snow that lasts for several days. Events may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Some winter storms might be large enough to affect several states, while others might affect only localized areas. Occasionally, heavy snow might also cause significant property damages, such as roof collapses on older buildings.

All winter storm events have the potential to present dangerous conditions to the affected area. Larger snowfalls pose a greater risk, reducing visibility due to blowing snow and making driving conditions treacherous. A heavy snow event is defined by the National Weather Service as an accumulation of 4 or more inches in 12 hours or less. A blizzard is the most severe form of winter storm. It combines low temperatures, heavy snow, and winds of 35 miles per hour or more, which reduces visibility to a quarter mile or less for at least 3 hours. Winter storms are often accompanied by sleet, freezing rain, or an ice storm. Such freeze events are particularly hazardous as they create treacherous surfaces.

Ice storms are defined as storms with significant amounts of freezing rain and are a result of cold air damming (CAD). CAD is a shallow, surface-based layer of relatively cold, stably-stratified air entrenched against the eastern slopes of the Appalachian Mountains. With warmer air above, falling precipitation in the form of snow melts, then becomes either super-cooled (liquid below the melting point of water) or re-freezes. In the former case, super-cooled droplets can freeze on impact (freezing rain), while in the latter case, the re-frozen water particles are ice pellets (or sleet). Sleet is defined as partially frozen raindrops or refrozen snowflakes that form into small ice pellets before reaching the ground. They typically bounce when they hit the ground and do not stick to the surface. However, it does accumulate like snow, posing similar problems and has the potential to accumulate into a layer of ice on surfaces. Freezing rain, conversely, usually sticks to the ground, creating a sheet of ice on the roadways and other surfaces.

All of the winter storm elements – snow, low temperatures, sleet, ice, etcetera – have the potential to cause significant hazard to a community. Even small accumulations can down power lines and trees limbs and create hazardous driving conditions. Furthermore, communication and power may be disrupted for days.

*Warning Time: 1 – More than 24 hours*

Advancements in meteorology and forecasting usually allow for mostly accurate forecasting a few days in advance of an impending storm.

*Duration: 3 – Less than 1 week*

Most storms have a duration of a few hours; however, impacts can last a few days after the initial incident until cleanup is completed.

#### LOCATION

Severe winter storms are usually a regional hazard, impacting the entire planning area at the same time. The risk of a severe winter storm occurring is generally uniform across the Region.

*Spatial Extent: 4 – Large*

#### EXTENT

Severe winter storms often involve a mix of hazardous weather conditions. The magnitude of an event can be defined based on the severity of each of the involved factors, including precipitation type, precipitation accumulation amounts, temperature, and wind.



NOAA uses the Regional Snowfall Index (RSI) to assess the societal impact of winter storms in the six easternmost regions in the United States. The index makes use of population and regional differences to assess the impact of snowfall. For example, areas which receive very little snowfall on average may be more adversely affected than other regions, resulting in a higher severity. The Region may experience any level on the RSI scale. During the snowstorm of February 28 to March 3, 1980, which produced the greatest one-day snowfall amounts the region has experienced, the Region was classified as a Category 4 on the RSI scale. It is possible that more severe events and impacts could be felt in the future.

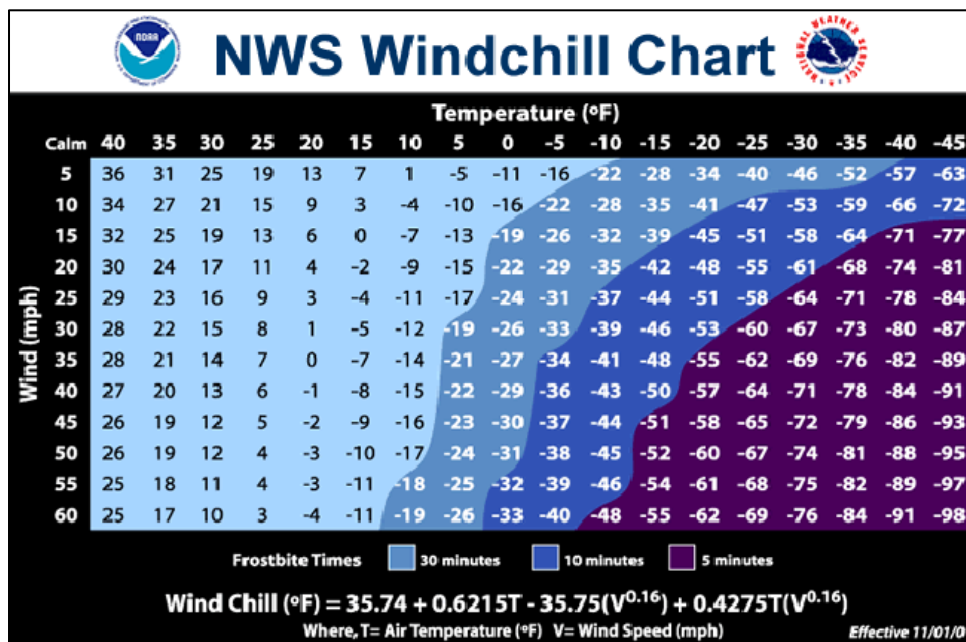
**Table 4.68 - Regional Snowfall Index (RSI) Values**

| Category | RSI Value | Description |
|----------|-----------|-------------|
| 1        | 1-3       | Notable     |
| 2        | 3-6       | Significant |
| 3        | 6-10      | Major       |
| 4        | 10-18     | Crippling   |
| 5        | 18+       | Extreme     |

Source: NOAA

The NWS Wind Chill Temperature Index, shown in Figure 4.43, provides a formula for calculating the dangers of winter winds and freezing temperatures.

**Figure 4.43 - NWS Wind Chill Temperature Index**



Source: <https://www.weather.gov/safety/cold-wind-chill-chart>

Table 4.69 notes greatest recorded one-day snowfall totals for each county in the Pamlico Sound Region.

**Table 4.69 - Greatest One-Day Snowfall by County**

| County   | Inches   | Location      | Date             |
|----------|----------|---------------|------------------|
| Beaufort | 16.4 in. | Belhaven      | March 3, 1980    |
| Carteret | 22.0 in. | Morehead City | March 3, 1980    |
| Craven   | 12.5 in. | New Bern      | January 30, 1965 |
| Pamlico  | 18.0 in. | Bayboro       | March 3, 1980    |

Source: NCEI/North Carolina Climate Office

The most significant recorded snow depth over the last 20 years took place in February 2014, with recorded depths averaging 4-8 inches across the four-county area.

*Impact: 2 – Limited*

The entirety of North Carolina is susceptible to winter storm and freeze events. Some ice and winter storms may be large enough to affect several states, while others might affect limited, localized areas. The degree of exposure typically depends on the normal expected severity of local winter weather. The Pamlico Sound Region is accustomed to moderate winter weather due to nor'easters originating in the Gulf Stream and producing frozen precipitation. Given the atmospheric nature of the hazard, the entire planning area has uniform exposure to a winter storm.

## HISTORICAL OCCURRENCES

To get a full picture of the range of impacts of a severe winter storm, data for the following weather types as defined by the National Weather Service (NWS) Raleigh Forecast Office and tracked by NCEI were collected:

- **Blizzard** – A winter storm which produces the following conditions for 3 consecutive hours or longer: (1) sustained winds or frequent gusts 30 knots (35 mph) or greater, and (2) falling and/or blowing snow reducing visibility frequently to less than 1/4 mile.
- **Cold/Wind Chill** – Period of low temperatures or wind chill temperatures reaching or exceeding locally/regionally defined advisory conditions of 0°F to -14°F with wind speeds 10 mph (9 kt) or greater.
- **Extreme Cold/Wind Chill** – A period of extremely low temperatures or wind chill temperatures reaching or exceeding locally/regionally defined warning criteria, defined as wind chill -15°F or lower with wind speeds 10 mph (9 kt) or greater.
- **Frost/Freeze** – A surface air temperature of 32°F or lower, or the formation of ice crystals on the ground or other surfaces, for a period of time long enough to cause human or economic impact, during the locally defined growing season.
- **Heavy Snow** – Snow accumulation meeting or exceeding 12 and/or 24 hour warning criteria of 3 and 4 inches, respectively.
- **Ice Storm** – Ice accretion meeting or exceeding locally/regionally defined warning criteria of ¼ inch or greater resulting in significant, widespread power outages, tree damage and dangerous travel. Issued only in those rare instances where just heavy freezing rain is expected and there will be no "mixed bag" precipitation meaning no snow, sleet or rain.
- **Sleet** – Sleet accumulations meeting or exceeding locally/regionally defined warning criteria of ½ inch or more.
- **Winter Storm** – A winter weather event that has more than one significant hazard and meets or exceeds locally/regionally defined 12 and/or 24 hour warning criteria for at least one of the precipitation elements. Defined by NWS Raleigh Forecast Office as snow accumulations 3 inches or greater in 12 hours (4 inches or more in 24 hours); Freezing rain accumulations ¼ inch (6 mm) or greater; Sleet accumulations ½ inch (13 mm) or more. Issued when there is at least a 60% forecast confidence of any one of the three criteria being met.
- **Winter Weather** – A winter precipitation event that causes a death, injury, or a significant impact to commerce or transportation, but does not meet locally/regionally defined warning criteria.

Table 4.70 summarizes the recorded severe winter storm events that have impacted each county in the Pamlico Sound Region according to NCEI Storm Events data for the 25-year period from 1999 through 2023. Note that many events impacted all or multiple counties. There were 28 unique reported incidents related to severe winter storms in the Pamlico Sound Region during this time. There was no reported property or crop damage resulting from these incidents; however, damages may have occurred that were

**SECTION 4: RISK ASSESSMENT**

not reported, and property and crop damages are possible impacts of future events. Similarly, there were no reported fatalities or injuries directly attributed to these events, but these types of impacts are possible in future events. No blizzard, cold/wind chill, extreme cold/wind chill, or sleet events were recorded.

**Table 4.70 - Total Severe Winter Storm Impacts in the Pamlico Sound Region, 1999-2023**

| Event Type                  | Count of Recorded Events | Total Fatalities | Total Injuries | Total Property Damage | Total Crop Damage |
|-----------------------------|--------------------------|------------------|----------------|-----------------------|-------------------|
| <b>Beaufort County</b>      |                          |                  |                |                       |                   |
| Winter Storm                | 15                       | 0                | 0              | \$0                   | \$0               |
| Winter Weather              | 4                        | 0                | 0              | \$0                   | \$0               |
| Ice Storm                   | 1                        | 0                | 0              | \$0                   | \$0               |
| Heavy Snow                  | 4                        | 0                | 0              | \$0                   | \$0               |
| Frost/Freeze                | 1                        | 0                | 0              | \$0                   | \$0               |
| <b>Carteret County</b>      |                          |                  |                |                       |                   |
| Winter Storm                | 8                        | 0                | 0              | \$0                   | \$0               |
| Winter Weather              | 2                        | 0                | 0              | \$0                   | \$0               |
| Ice Storm                   | 2                        | 0                | 0              | \$0                   | \$0               |
| Heavy Snow                  | 3                        | 0                | 0              | \$0                   | \$0               |
| Frost/Freeze                | 1                        | 0                | 0              | \$0                   | \$0               |
| <b>Craven County</b>        |                          |                  |                |                       |                   |
| Winter Storm                | 10                       | 0                | 0              | \$0                   | \$0               |
| Winter Weather              | 5                        | 0                | 0              | \$0                   | \$0               |
| Ice Storm                   | 3                        | 0                | 0              | \$0                   | \$0               |
| Heavy Snow                  | 6                        | 0                | 0              | \$0                   | \$0               |
| Frost/Freeze                | 1                        | 0                | 0              | \$0                   | \$0               |
| <b>Pamlico County</b>       |                          |                  |                |                       |                   |
| Winter Storm                | 9                        | 0                | 0              | \$0                   | \$0               |
| Winter Weather              | 2                        | 0                | 0              | \$0                   | \$0               |
| Ice Storm                   | 1                        | 0                | 0              | \$0                   | \$0               |
| Heavy Snow                  | 4                        | 0                | 0              | \$0                   | \$0               |
| Frost/Freeze                | 1                        | 0                | 0              | \$0                   | \$0               |
| <b>Pamlico Sound Region</b> |                          |                  |                |                       |                   |
| Winter Storm                | 15                       | 0                | 0              | \$0                   | \$0               |
| Winter Weather              | 7                        | 0                | 0              | \$0                   | \$0               |
| Ice Storm                   | 4                        | 0                | 0              | \$0                   | \$0               |
| Heavy Snow                  | 6                        | 0                | 0              | \$0                   | \$0               |
| Frost/Freeze                | 1                        | 0                | 0              | \$0                   | \$0               |
| <b>Total</b>                | <b>28</b>                | <b>0</b>         | <b>0</b>       | <b>\$0</b>            | <b>\$0</b>        |

Source: NCEI

A list of specific events that have impacted the Pamlico Sound Region are recorded in Table 4.71.

**Table 4.71 - Recorded Severe Winter Storm Impacts in the Pamlico Sound Region, 1999-2023**

| Date      | Event Type     | Fatalities | Injuries | Property Damage | Crop Damage |
|-----------|----------------|------------|----------|-----------------|-------------|
| 12/3/2000 | Heavy Snow     | 0          | 0        | \$0             | \$0         |
| 1/3/2002  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 1/23/2003 | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 1/9/2004  | Winter Weather | 0          | 0        | \$0             | \$0         |

**SECTION 4: RISK ASSESSMENT**

| Date       | Event Type     | Fatalities | Injuries | Property Damage | Crop Damage |
|------------|----------------|------------|----------|-----------------|-------------|
| 1/25/2004  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 1/26/2004  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 2/16/2004  | Winter Weather | 0          | 0        | \$0             | \$0         |
| 2/26/2004  | Winter Weather | 0          | 0        | \$0             | \$0         |
| 3/23/2004  | Frost/Freeze   | 0          | 0        | \$0             | \$0         |
| 12/20/2004 | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 12/26/2004 | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 1/20/2009  | Heavy Snow     | 0          | 0        | \$0             | \$0         |
| 1/30/2010  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 2/12/2010  | Heavy Snow     | 0          | 0        | \$0             | \$0         |
| 12/26/2010 | Heavy Snow     | 0          | 0        | \$0             | \$0         |
| 1/10/2011  | Heavy Snow     | 0          | 0        | \$0             | \$0         |
| 1/22/2011  | Heavy Snow     | 0          | 0        | \$0             | \$0         |
| 1/28/2014  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 2/11/2014  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 1/9/2015   | Winter Weather | 0          | 0        | \$0             | \$0         |
| 2/16/2015  | Ice Storm      | 0          | 0        | \$0             | \$0         |
| 2/24/2015  | Ice Storm      | 0          | 0        | \$0             | \$0         |
| 2/12/2016  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 1/3/2018   | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 1/17/2018  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 2/20/2020  | Winter Storm   | 0          | 0        | \$0             | \$0         |
| 1/28/2021  | Winter Weather | 0          | 0        | \$0             | \$0         |
| 1/21/2022  | Winter Storm   | 0          | 0        | \$0             | \$0         |

Source: NCEI

Several storm impacts from NCEI are summarized below:

**February 12, 2010** – A strong low pressure system moved northeast well offshore of the coast early February 13th. Widespread snow developed over the region during the evening of February 12th and continued into the morning of February 13th. Most of eastern North Carolina received between 4 and 7 inches of snowfall from this system. The Pamlico Sound Region saw 4 to 8 inches of snowfall.

**February 11, 2014** – Low pressure developed along a stalled cold front off the NC coast during the day on February 11. All snow was reported on the northern coast, with a mesoscale snow band producing a corridor of 4-8 inches of snow from Jones County to central Outer Banks Dare County. Roads became snow and ice covered, and travel became treacherous through the day Tuesday. Precipitation came to an end Tuesday night, though temperatures remained well below freezing with roadways remaining treacherous. A second wave of wintry weather developed the morning of February 12. Minor accumulations of snow and freezing rain occurred inland, especially across the coastal plain, before changing to all rain during the afternoon.

**January 11, 2018** – Low pressure deepening off the North Carolina coast produced significant snowfall over most of eastern North Carolina during the late evening of January 17th through the early morning of January 18th. Across the Pamlico Sound four-county region, snowfall ranged from less than 1 inch to 6 inches or more over the north coast. Roads were snow and ice covered, creating hazardous travel conditions.

**February 20, 2020** – Low pressure developed well off the North Carolina coast February 20th and lifted northeast through February 21st. Rain developed during the afternoon of February 20th and gradually

mixed with and changed to snow during the evening over the mainland counties. The snow continues through early morning hours of February 21st before ending.

**January 21, 2022** – A cold front moved through the area late in the day of January 20th. As the front moved through rain changed over to a wintry mix of snow, sleet and freezing rain on the evening of January 20th through early morning on the 21st before ending. Significant amounts of ice fell toward the Crystal Coast, with a general 2 to 6 of snow mixed with sleet farther north and west. The icing amounts of a quarter to a half of an inch toward the Crystal Coast were the highest amounts of ice this area has experienced, over the widest area, since the late 1990s.

The Pamlico Sound Region received one emergency declaration and one presidential disaster declaration since 1968 for incidents related to severe winter storms. As a state, North Carolina received eight disaster declarations related to severe winter storms during this timeframe.

**Table 4.72 – Emergency & Disaster Declarations in Pamlico Sound Region due to Severe Winter Storms**

| Disaster Number | Date | Disaster Type    | Incident Start | Incident End |
|-----------------|------|------------------|----------------|--------------|
| 234             | 1968 | Severe Ice Storm | 2/10/1968      | 2/10/1968    |
| 3110            | 1993 | Snowstorm        | 3/13/1993      | 3/17/1993    |

Source: FEMA, September 25, 2024

## PROBABILITY OF FUTURE OCCURRENCE

NCEI records 28 severe winter storm related events during the 25-year period from 1999 through 2023, which equates to an average of 1.12 events per year or more than 100 percent likelihood of an occurrence in any given year.

*Probability: 4 – Highly Likely*

## CLIMATE CHANGE

According to the 2023 North Carolina Hazard Mitigation Plan, there is uncertainty associated with climate change impacts on future severe winter storms. Global temperature rise could cause shorter and warmer winters in many areas; however, the likelihood of dangerously low temperatures may increase due to continuing trends of temperature extremes. Warmer winters, however, mean that precipitation that would normally fall as snow may begin to fall as rain or freezing rain instead.

## VULNERABILITY ASSESSMENT

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### PEOPLE

Winter storms are considered deceptive killers because most deaths are indirectly related to the storm event. The leading cause of death during winter storms is from automobile or other transportation accidents due to poor visibility and/or slippery roads. Additionally, exhaustion and heart attacks caused by overexertion may result from winter storms.

Power outages during very cold winter storm conditions can also create potentially dangerous situations. Elderly people account for the largest percentage of hypothermia victims. In addition, if the power is out for an extended period, residents are forced to find alternative means to heat their homes. The danger arises from carbon monoxide released from improperly ventilated heating sources such as space or kerosene heaters, furnaces, and blocked chimneys. House fires also occur more frequently in the winter due to lack of proper safety precautions when using an alternative heating source.

**PROPERTY**

According to reported data of storm impacts recorded by the NCEI, between 1999 and 2018, the Pamlico Sound Region experienced no property damage related to the impacts of severe winter storm. Losses due to severe weather may not have been reported but should be expected during severe winter weather incidents.

Potential losses associated with winter storms include the cost of the removal of snow from roadways, debris cleanup, and indirect losses from power outages, lost productivity, and other factors. Additionally, severe ice is often associated with winter storms; and an icy roadway on a bridge or at a busy intersection, for example, threatens the safety of residents and visitors. Ice accumulation can also cause power outages and have a significant impact on public utilities.

**ENVIRONMENT**

Winter storm events may include ice or snow accumulation on trees which can cause large limbs, or even whole trees, to snap and potentially fall on buildings, cars, or power lines. This potential for winter debris creates a dangerous environment to be outside in; significant injury or fatality may occur if a large limb snaps while a local resident is out driving or walking underneath it.

**CONSEQUENCE ANALYSIS**

Table 4.73 summarizes the potential negative consequences of severe winter storm.

**Table 4.73 - Consequence Analysis - Severe Winter Storm**

| <b>Category</b>   | <b>Consequences</b>  |
|---|--|
| Public  | Localized impact expected to be severe for affected areas and moderate to light for other less affected areas.                       |
| Responders  | Adverse impact expected to be severe for unprotected personnel and moderate to light for trained, equipped, and protected personnel. |
| Continuity of Operations (including Continued Delivery of Services) | Localized disruption of roads and/or utilities caused by incident may postpone delivery of some services.                            |
| Property, Facilities and Infrastructure                             | Localized impact to facilities and infrastructure in the areas of the incident. Power lines and roads most adversely affected.       |
| Environment   | Environmental damage to trees, bushes, etc.  |
| Economic Condition of the Jurisdiction                              | Local economy and finances may be adversely affected, depending on damage.   |
| Public Confidence in the Jurisdiction's Governance                  | Ability to respond and recover may be questioned and challenged if planning, response, and recovery not timely and effective.        |

**HAZARD SUMMARY BY JURISDICTION**

The following table summarizes severe winter storm hazard risk by jurisdiction. Severe winter storm risk does not vary substantially by jurisdiction because these events are typically regional in nature.

| <b>Jurisdiction</b>      | <b>Probability</b> | <b>Impact</b> | <b>Spatial Extent</b> | <b>Warning Time</b> | <b>Duration</b> | <b>Score</b> | <b>Priority</b> |
|--------------------------|--------------------|---------------|-----------------------|---------------------|-----------------|--------------|-----------------|
| <i>All jurisdictions</i> | 4                  | 2             | 4                     | 1                   | 3               | 3.0          | H               |

## 4.5.8 TORNADOES & THUNDERSTORMS

### HAZARD BACKGROUND

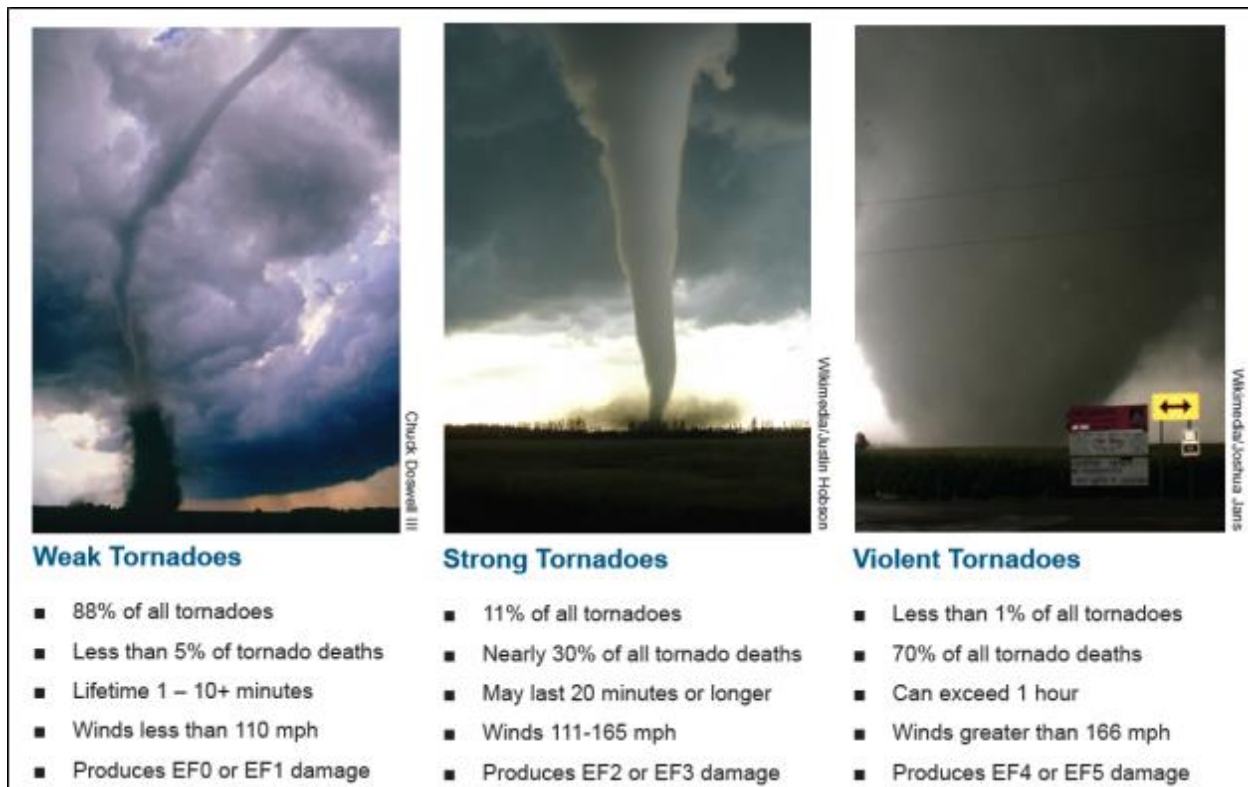
#### TORNADOES

According to the Glossary of Meteorology (AMS 2000), a tornado is "a violently rotating column of air, pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud." Tornadoes can appear from any direction. Most move from southwest to northeast, or west to east. Some tornadoes have changed direction or even backtracked.

Tornadoes are commonly produced by land falling tropical cyclones. Those making landfall along the Gulf coast traditionally produce more tornadoes than those making landfall along the Atlantic coast. Tornadoes that form within hurricanes are more common in the right front quadrant with respect to the forward direction but can occur in other areas as well. According to the NHC, about 10% of the tropical cyclone-related fatalities are caused by tornadoes. Tornadoes are more likely to be spawned within 24 hours of landfall and are usually within 30 miles of the tropical cyclone’s center.

Tornadoes have the potential to produce winds in excess of 200 mph (EF5 on the Enhanced Fujita Scale) and can be very expansive – some in the Great Plains have exceeded two miles in width. Tornadoes associated with tropical cyclones, however, tend to be of lower intensity (EF0 to EF2) and much smaller in size than ones that form in the Great Plains. Figure 4.44 provides a description and breakdown of tornadoes by severity. Violent tornadoes, as described below, are unlikely in the Pamlico Sound Region.

**Figure 4.44 - Tornadoes by Severity**



Source: NOAA National Weather Service

Figure 4.45 shows tornado activity in the United States based on the number of recorded tornadoes per 1,000 square miles. North Carolina has averaged 1 to 5 tornadoes per 1,000 square miles.

**Figure 4.45 – Tornado Activity in the U.S.**

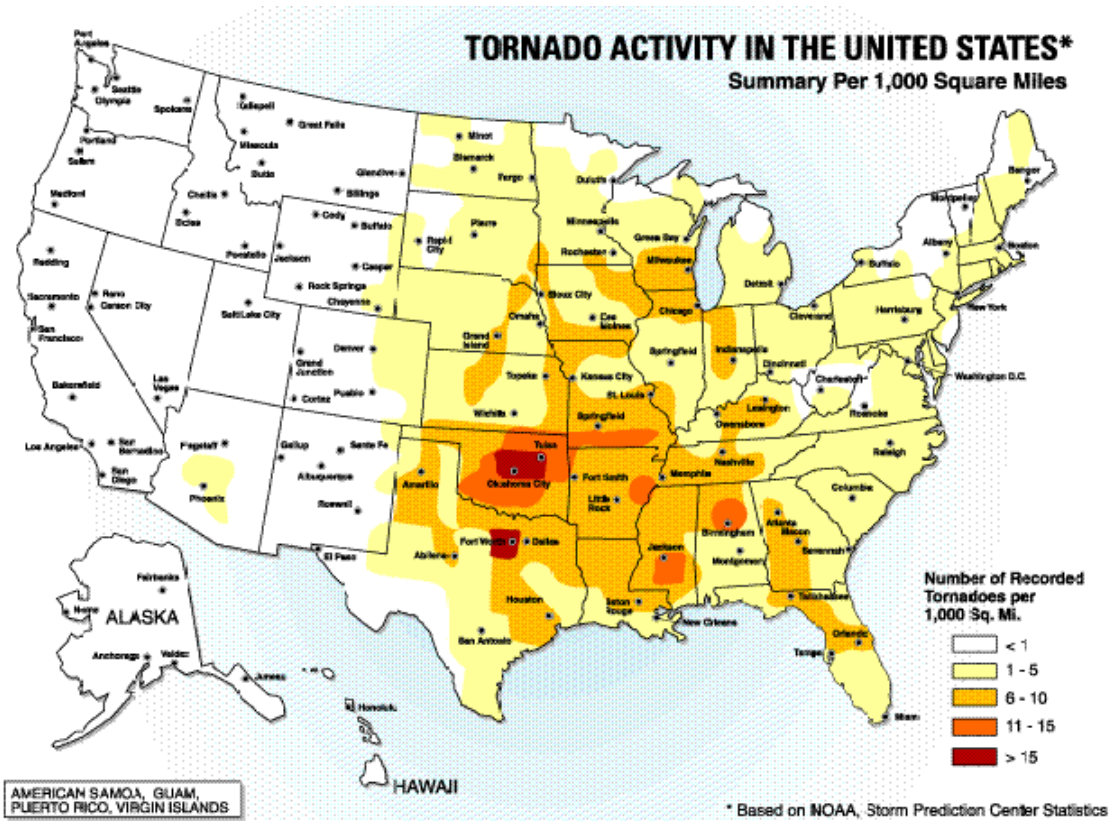


Figure 1.1 The number of tornadoes recorded per 1,000 square miles

Source: American Society of Civil Engineers

### THUNDERSTORM WINDS

Thunderstorms result from the rapid upward movement of warm, moist air. They can occur inside warm, moist air masses and at fronts. As the warm, moist air moves upward, it cools, condenses, and forms cumulonimbus clouds that can reach heights of greater than 35,000 ft. As the rising air reaches its dew point, water droplets and ice form and begin falling the long distance through the clouds towards earth's surface. As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft of air that spreads out at earth's surface and causes strong winds associated with thunderstorms.

There are four ways in which thunderstorms can organize: single cell, multi-cell cluster, multi-cell lines (squall lines), and supercells. Even though supercell thunderstorms are most frequently associated with severe weather phenomena, thunderstorms most frequently organize into clusters or lines. Warm, humid conditions are favorable for the development of thunderstorms. The average single cell thunderstorm is approximately 15 miles in diameter and lasts less than 30 minutes at a single location. However, thunderstorms, especially when organized into clusters or lines, can travel intact for distances exceeding 600 miles.

Thunderstorms are responsible for the development and formation of many severe weather phenomena, posing great hazards to the population and landscape. Damage that results from thunderstorms is mainly



inflicted by downburst winds, large hailstones, and flash flooding caused by heavy precipitation. Stronger thunderstorms are capable of producing tornadoes and waterspouts. While conditions for thunderstorm conditions may be anticipated within a few hours, severe conditions are difficult to predict. Regardless of severity, storms generally pass within a few hours.

*Warning Time: 4 – Less than six hours*

*Duration: 1 – Less than six hours*

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### LIGHTNING

Lightning is a sudden electrical discharge released from the atmosphere that follows a course from cloud to ground, cloud to cloud, or cloud to surrounding air, with light illuminating its path. Lightning's unpredictable nature causes it to be one of the most feared weather elements.

All thunderstorms produce lightning, which often strikes outside of the area where it is raining and is known to fall more than 10 miles away from the rainfall area. When lightning strikes, electricity shoots through the air and causes vibrations creating the sound of thunder. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Nationwide, lightning kills 75 to 100 people each year. Lightning strikes can also start building fires and wildland fires, and damage electrical systems and equipment.

The watch/warning time for a given storm is usually a few hours. There is no warning time for any given lightning strike. Lightning strikes are instantaneous. Storms that cause lightning usually pass within a few hours.

*Warning Time: 4 – Less than 6 hours*

*Duration: 1 – Less than 6 hours*

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### HAIL

According to the National Oceanic and Atmospheric Administration (NOAA), hail is precipitation that is formed when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere causing them to freeze. The raindrops form into small frozen droplets and then continue to grow as they come into contact with super-cooled water which will freeze on contact with the frozen rain droplet. This frozen rain droplet can continue to grow and form hail. As long as the updraft forces can support or suspend the weight of the hailstone, hail can continue to grow.

At the time when the updraft can no longer support the hailstone, it will fall down to the earth. For example, a ¼" diameter or pea sized hail requires updrafts of 24 mph, while a 2 ¾" diameter or baseball sized hail requires an updraft of 81 mph. The largest hailstone recorded in the United States was found in Vivian, South Dakota on July 23, 2010; it measured eight inches in diameter, almost the size of a soccer ball. While soccer-ball-sized hail is the exception, but even small pea sized hail can do damage.

Hailstorms in North Carolina cause damage to property, crops, and the environment, and kill and injure livestock. In the United States, hail causes more than \$1 billion in damage to property and crops each year. Much of the damage inflicted by hail is to crops. Even relatively small hail can shred plants to ribbons in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are the other things most commonly damaged by hail. Hail has been known to cause injury to humans; occasionally, these injuries can be fatal.

The onset of thunderstorms with hail is generally rapid. However, advancements in meteorological forecasting allow for some warning. Storms usually pass in a few hours.

*Warning Time: 4 – Less than 6 hours*

*Duration: 1 – Less than 6 hours*

**LOCATION**

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**TORNADOES**

Tornadoes and thunderstorms can occur anywhere in the region and do not have a defined vulnerability zone. Tornadoes typically impact a small area, but damage may be extensive. Tornado locations are completely random, meaning risk to tornado isn't increased in one area of the county versus another. Tornadoes can be spawned by tropical cyclones; however, these tornadoes typically occur up to 2 days before and as many as 3 days after landfall of the tropical cyclone.

*Spatial Extent: 2 – Small*

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**THUNDERSTORM WINDS**

Thunderstorm winds, lightning, and hail events do not have a defined vulnerability zone. The average single cell thunderstorm is approximately 15 miles in diameter and lasts less than 30 minutes at a single location. However, thunderstorms can travel intact for distances exceeding 600 miles, especially when organized into clusters or lines. Any given thunderstorm event may be expected to impact a large portion of the Pamlico Sound Region.

*Spatial Extent: 3 – Moderate*

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**LIGHTNING AND HAIL**

The scope of lightning and hail is generally defined to the footprint of its associated thunderstorm. However, large-scale hail tends to occur in a more localized area within the storm, and lightning strikes and associated damages are highly localized. It should be noted that while lightning is most often affiliated with severe thunderstorms, it may also strike outside of heavy rain and might occur as far as 10 miles away from any rainfall. The entire Pamlico Sound Region is uniformly exposed to each of these hazards.

*Spatial Extent: 1 – Negligible*

**EXTENT**

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**TORNADOES**

Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita (EF) scale. Both scales are sets of wind estimates (not measurements) based on damage. The EF scale provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis with better correlation between damage and wind speed. It is also more precise because it considers the materials affected and the construction of structures damaged by a tornado. Table 4.74 shows the wind speeds associated with the Enhanced Fujita scale ratings and the damage that could result at different levels of intensity.

**Table 4.74 – Enhanced Fujita Scale**

| EF Number | 3 Second Gust (mph) | Damage   |
|-----------|---------------------|--|
| 0         | 65-85               | <b>Light damage.</b> Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.  |
| 1         | 96-110              | <b>Moderate damage.</b> Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken. |

## SECTION 4: RISK ASSESSMENT

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| EF Number | 3 Second Gust (mph) | Damage   |
|-----------|---------------------|--|
| 2         | 111-135             | <b>Considerable damage.</b> Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.   |
| 3         | 136-165             | <b>Severe damage.</b> Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance. |
| 4         | 166-200             | <b>Devastating damage.</b> Well-constructed houses and whole frame houses completely leveled; cars thrown, and small missiles generated.   |
| 5         | Over 200            | <b>Incredible damage.</b> Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m; high-rise buildings have significant structural deformation; incredible phenomena will occur.                          |

The most intense tornado to pass through the Pamlico Sound Region in the past 25 years was an EF3 in April 2014. This tornado resulted in 16 injuries and \$15,000,000 in property damage.

*Impact: 3 – Critical*

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### THUNDERSTORM WINDS

The magnitude of a thunderstorm event can be defined by the storm’s maximum wind speed and its impacts. NCEI divides wind events into several types including High Wind, Strong Wind, Thunderstorm Wind, Tornado, and Hurricane. For this severe weather risk assessment, High Wind, Strong Wind and Thunderstorm Wind data was collected. Tornado is discussed above, and Hurricane Wind is addressed as a separate hazard. The following definitions come from the NCEI Storm Data Preparation document.

**High Wind** – Sustained non-convective winds of 40mph or greater lasting for one hour or longer or winds (sustained or gusts) of 58 mph for any duration on a widespread or localized basis.

**Strong Wind** – Non-convective winds gusting less than 58 mph, or sustained winds less than 40 mph, resulting in a fatality, injury, or damage.

**Thunderstorm Wind** – Winds, arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 58 mph, or winds of any speed (non-severe thunderstorm winds below 58 mph) producing a fatality, injury or damage.

The strongest recorded thunderstorm wind event in the county occurred on June 9, 2007 with a measured gust of 92 mph at Harkers Island and estimated gusts of 70 mph elsewhere across the region. Overall, the event caused \$105,000 in property damage, including downed power poles and a structure fire due to lightning.

*Impact: 2 – Limited*

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### LIGHTNING

Lightning is measured by the Lightning Activity Level (LAL) scale, created by the National Weather Service to define lightning activity into a specific categorical scale. The LAL is a common parameter that is part of fire weather forecasts nationwide.

**Table 4.75 – Lightning Activity Level Scale**

| <b>Lightning Activity Level Scale</b> |  |
|---------------------------------------|--|
| LAL 1                                 | No thunderstorms   |
| LAL 2                                 | Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground lightning strikes in a five-minute period                            |
| LAL 3                                 | Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a five-minute period                                   |
| LAL 4                                 | Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud to ground strikes in a five-minute period   |
| LAL 5                                 | Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a five-minute period  |
| LAL 6                                 | Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag warning |

Source: National Weather Service

With the right conditions in place, the entire county is susceptible to each lightning activity level as defined by the LAL. Most lightning strikes cause limited damage to specific structures in a limited area, and cause very few injuries or fatalities, and minimal disruption on quality of life.

*Impact: 1 – Minor*

**HAIL**

The NWS classifies hail by diameter size, and corresponding everyday objects to help relay scope and severity to the population. Table 4.76 indicates the hailstone measurements utilized by the NWS.

**Table 4.76 – Hailstone Measurement Comparison Chart**

| <b>Average Diameter</b> | <b>Corresponding Household Object</b> |
|-------------------------|---------------------------------------|
| .25 inch                | Pea                                   |
| .5 inch                 | Marble/Mothball                       |
| .75 inch                | Dime/Penny                            |
| .875 inch               | Nickel                                |
| 1.0 inch                | Quarter                               |
| 1.5 inch                | Ping-pong ball                        |
| 1.75 inch               | Golf ball                             |
| 2.0 inch                | Hen egg                               |
| 2.5 inch                | Tennis ball                           |
| 2.75 inch               | Baseball                              |
| 3.00 inch               | Teacup                                |
| 4.00 inch               | Grapefruit                            |
| 4.5 inch                | Softball                              |

The Tornado and Storm Research Organization (TORRO) has further described hail sizes by their typical damage impacts. Table 4.77 describes typical intensity and damage impacts of the various sizes of hail.

**Table 4.77 – Tornado and Storm Research Organization Hailstorm Intensity Scale**

| <b>Intensity Category</b> | <b>Diameter (mm)</b> | <b>Diameter (inches)</b> | <b>Size Description</b> | <b>Typical Damage Impacts</b> |
|---------------------------|----------------------|--------------------------|-------------------------|-------------------------------|
| Hard Hail                 | 5-9                  | 0.2-0.4                  | Pea                     | No damage                     |

**SECTION 4: RISK ASSESSMENT**

| <b>Intensity Category</b> | <b>Diameter (mm)</b> | <b>Diameter (inches)</b> | <b>Size Description</b>    | <b>Typical Damage Impacts</b>  |
|---------------------------|----------------------|--------------------------|----------------------------|--|
| Potentially Damaging      | 10-15                | 0.4-0.6                  | Mothball                   | Slight general damage to plants, crops   |
| Significant               | 16-20                | 0.6-0.8                  | Marble, grape              | Significant damage to fruit, crops, vegetation   |
| Severe                    | 21-30                | 0.8-1.2                  | Walnut                     | Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored  |
| Severe                    | 31-40                | 1.2-1.6                  | Pigeon's egg > squash ball | Widespread glass damage, vehicle bodywork damage   |
| Destructive               | 41-50                | 1.6-2.0                  | Golf ball > Pullet's egg   | Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries              |
| Destructive               | 51-60                | 2.0-2.4                  | Hen's egg                  | Bodywork of grounded aircraft dented, brick walls pitted   |
| Destructive               | 61-75                | 2.4-3.0                  | Tennis ball > cricket ball | Severe roof damage, risk of serious injuries   |
| Destructive               | 76-90                | 3.0-3.5                  | Large orange > softball    | Severe damage to aircraft bodywork   |
| Super Hailstorms          | 91-100               | 3.6-3.9                  | Grapefruit                 | Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open |
| Super Hailstorms          | >100                 | 4.0+                     | Melon                      | Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open |

Source: Tornado and Storm Research Organization (TORRO), Department of Geography, Oxford Brookes University

It should be noted that in addition to hail diameter, factors including number and density of hailstones, hail fall speed, and surface wind speeds affect severity.

The average hailstone size recorded between 1999 and 2023 in the Pamlico Sound Region was a little over 1” in diameter. The largest hailstones recorded during this period were 2.75”, recorded on four separate dates. The worst instance occurred on July 28, 2014 in Havelock, where many cars suffered damages from cracked or broken windshields and windows and mobile homes sustained broken windows and severe damage to siding.

*Impact: 1 – Minor*

**HISTORICAL OCCURRENCES**

**TORNADOES**

NCEI storm reports were reviewed from 1999 through 2023 to assess whether recent trends varied from the longer historical record. According to NCEI, the Pamlico Sound Region experienced 112 tornado incidents between 1999 and 2023, causing no fatalities, 35 injuries, \$34 million in property damage and no reported crop damage. Table 4.78 shows historical tornadoes in the Pamlico Sound Region during this time period while Figure 4.46 reflects the tracks of past tornadoes that passed through the Region.

**Table 4.78 – Recorded Tornadoes in Pamlico Sound Region, 1999-2023**

| <b>Location</b>  | <b>Date</b> | <b>Time</b> | <b>Magnitude</b> | <b>Deaths/Injuries</b> | <b>Property Damage</b> |
|------------------|-------------|-------------|------------------|------------------------|------------------------|
| Dover, Tuscarora | 4/11/99     | 15:38       | F0               | 0/0                    | \$0                    |

**SECTION 4: RISK ASSESSMENT**

| Location                            | Date     | Time  | Magnitude | Deaths/Injuries | Property Damage |
|-------------------------------------|----------|-------|-----------|-----------------|-----------------|
| Bridgeton                           | 4/15/99  | 21:45 | F0        | 0/0             | \$0             |
| Davis                               | 4/15/99  | 22:05 | F1        | 0/0             | \$500,000       |
| Region                              | 9/15/99  | 15:15 | F2        | 0/0             | \$1,000,000     |
| Tuscarora                           | 3/17/00  | 00:10 | F0        | 0/0             | \$50,000        |
| Cape Carteret                       | 4/15/00  | 11:45 | F0        | 0/0             | \$20,000        |
| Bridgeton                           | 4/15/00  | 12:17 | F1        | 0/1             | \$700,000       |
| Morehead City                       | 4/15/00  | 12:45 | F0        | 0/0             | \$0             |
| Stella                              | 9/18/00  | 15:37 | F0        | 0/0             | \$0             |
| Cape Carteret                       | 4/1/01   | 15:30 | F0        | 0/0             | \$0             |
| Morehead City                       | 4/17/01  | 15:00 | F1        | 0/0             | \$100,000       |
| Sealevel                            | 4/17/01  | 15:16 | F0        | 0/0             | \$0             |
| Pantego                             | 10/11/02 | 16:38 | F2        | 0/0             | \$3,000,000     |
| Belhaven                            | 10/11/02 | 17:45 | F0        | 0/0             | \$20,000        |
| Atlantic                            | 10/11/02 | 18:40 | F0        | 0/0             | \$0             |
| Washington                          | 5/10/03  | 20:42 | F0        | 0/0             | \$0             |
| Newport & Atlantic Beach            | 7/2/03   | 09:55 | F0        | 0/0             | \$2,000         |
| Vanceboro                           | 7/2/03   | 13:40 | F0        | 0/0             | \$2,000         |
| Aurora                              | 8/6/03   | 11:30 | F0        | 0/0             | \$0             |
| Morehead City                       | 8/6/03   | 16:45 | F0        | 0/0             | \$50,000        |
| Cedar Is                            | 8/14/03  | 11:01 | F0        | 0/0             | \$0             |
| Morehead City                       | 4/13/04  | 13:35 | F0        | 0/0             | \$10,000        |
| Stacy & Williston                   | 6/7/04   | 10:53 | F0        | 0/0             | \$0             |
| Dover, New Bern & Bayboro           | 6/23/04  | 19:35 | F0        | 0/0             | \$0             |
| Atlantic Beach                      | 7/17/04  | 16:19 | F1        | 0/0             | \$80,000        |
| Stella & Bath                       | 8/13/04  | 04:53 | F1        | 0/3             | \$384,000       |
| Harlowe & North Harlowe             | 8/15/04  | 13:23 | F0        | 0/0             | \$0             |
| James City, Grantsboro, & Merritt   | 10/13/04 | 12:20 | F0        | 0/0             | \$2,000         |
| Atlantic Beach                      | 6/25/05  | 17:40 | F0        | 0/0             | \$1,000         |
| Broad Creek                         | 7/13/05  | 12:35 | F0        | 0/0             | \$500           |
| Salter Path                         | 8/27/05  | 14:15 | F0        | 0/0             | \$0             |
| Atlantic Beach                      | 6/14/06  | 11:40 | F0        | 0/0             | \$25,000        |
| Sealevel                            | 7/1/06   | 11:30 | F0        | 0/0             | \$0             |
| Stacy                               | 8/27/06  | 14:29 | F0        | 0/0             | \$5,000         |
| Morehead City & Stacy               | 8/31/06  | 17:25 | F0        | 0/0             | \$10,000        |
| Smyrna                              | 3/2/07   | 08:40 | EFO       | 0/0             | \$1,000         |
| Old Ford                            | 7/11/07  | 18:00 | EFl       | 0/0             | \$250,000       |
| Old Ford                            | 2/18/08  | 04:38 | EFl       | 0/0             | \$50,000        |
| Bunyan & Chocowinity                | 4/20/08  | 14:45 | EFO       | 0/0             | \$0             |
| Leechville                          | 4/28/08  | 16:25 | EFO       | 0/0             | \$0             |
| Newport, Crab Pt. Village, Beaufort | 5/11/08  | 19:06 | EFl       | 0/0             | \$40,000        |
| Alligoods                           | 4/11/09  | 01:40 | EFO       | 0/0             | \$100,000       |
| Honolulu                            | 5/5/09   | 16:25 | EFO       | 0/0             | \$0             |
| Vanceboro                           | 5/7/09   | 17:25 | EFO       | 0/0             | \$10,000        |
| Alligoods & Bunyon                  | 7/17/09  | 16:23 | EFO       | 0/0             | \$0             |

**SECTION 4: RISK ASSESSMENT**

| Location  | Date     | Time  | Magnitude | Deaths/Injuries | Property Damage      |
|---|----------|-------|-----------|-----------------|----------------------|
| Vanceboro, Bath, Riverdale, Kennel Beach              | 4/16/11  | 18:40 | EF2       | 0/7             | \$4,004,000          |
| Ft Barnwell, Pungo                                    | 4/28/11  | 15:20 | EFO       | 0/0             | \$0                  |
| Leechville  | 8/26/11  | 20:12 | EF1       | 0/0             | \$200,000            |
| Truttneys Lndg  | 5/30/12  | 09:34 | EF1       | 0/0             | \$600,000            |
| Core Creek  | 12/26/12 | 14:58 | EF1       | 0/0             | \$10,000             |
| Camp Glenn  | 11/26/13 | 22:15 | EF2       | 0/2             | \$6,500,000          |
| Pantego   | 4/7/14   | 14:49 | EF2       | 0/5             | \$1,000,000          |
| Chocowinity   | 4/25/14  | 18:35 | EF3       | 0/16            | \$15,000,000         |
| Cove City   | 4/29/14  | 13:25 | EFO       | 0/0             | \$0                  |
| Davis   | 2/16/16  | 08:51 | EF1       | 0/0             | \$100,000            |
| Ocean   | 6/25/16  | 12:45 | EFO       | 0/1             | \$50,000             |
| Straits, Marshallberg                                 | 9/2/16   | 20:20 | EF1       | 0/0             | \$225,000            |
| Lowland, Cherry Pt. Lndg, Bettie, David, Otway, Kuhns | 9/13/18  | 10:23 | EF1       | 0/0             | \$0                  |
| Atlantic Beach  | 11/13/18 | 04:45 | EF1       | 0/0             | \$0                  |
| Cape Carteret, Broad Creek, & Mill Creek              | 11/24/18 | 14:06 | EF2       | 0/0             | \$0                  |
| Broad Creek   | 11/24/18 | 14:10 | EF2       | 0/0             | \$0                  |
| Mill Creek  | 11/24/18 | 14:40 | EFO       | 0/0             | \$0                  |
| Cape Carteret   | 9/5/19   | 8:02  | EF2       | 0/0             | \$0                  |
| Vanceboro, James City                                 | 9/5/19   | 13:30 | EFO       | 0/0             | \$0                  |
| Vanceboro   | 10/22/19 | 18:43 | EFO       | 0/0             | \$0                  |
| Truttneys Lndg  | 11/1/19  | 00:15 | EFO       | 0/0             | \$0                  |
| Bayview   | 4/13/20  | 9:15  | EFO       | 0/0             | \$0                  |
| Cherry Pt USNR  | 4/13/20  | 9:20  | EFO       | 0/0             | \$0                  |
| Surry, Acre Station, Burbage Xrd                      | 8/3/20   | 23:18 | EF1       | 0/0             | \$0                  |
| Kennel Beach  | 8/3/20   | 22:23 | EF1       | 0/0             | \$0                  |
| Merrimon  | 9/17/20  | 20:16 | EF1       | 0/0             | \$0                  |
| Hobucken  | 9/18/20  | 00:33 | EFO       | 0/0             | \$0                  |
| Hymans  | 5/16/22  | 19:20 | EF1       | 0/0             | \$0                  |
| South Creek   | 9/30/22  | 14:22 | EFU       | 0/0             | \$0                  |
| Bayview   | 1/4/23   | 14:49 | EF1       | 0/0             | \$0                  |
| <b>Total</b>  |          |       |           | <b>0/35</b>     | <b>\$ 34,101,500</b> |

Source: NCEI

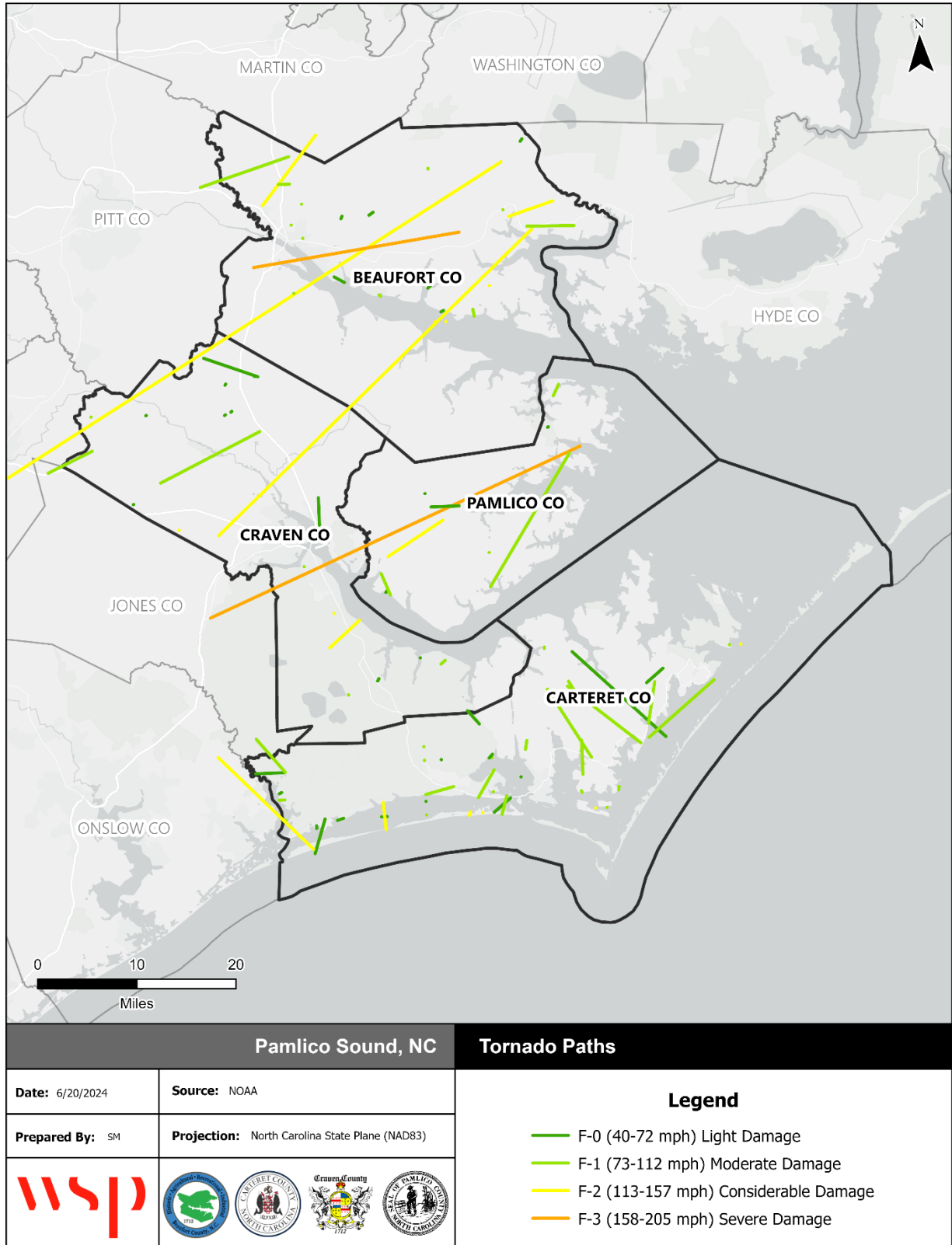
Of the sixteen tornadoes recorded by NCEI between 2019 and 2023, seven were categorized as EF0, and seven tornadoes were categorized as EF1. Table 4.79 summarizes these occurrences by county.

**Table 4.79 - Recorded Tornadoes, 2019-2023**

| County          | Total Recorded Occurrences |
|-----------------|----------------------------|
| Beaufort County | 6                          |
| Carteret County | 3                          |
| Craven County   | 5                          |
| Pamlico County  | 2                          |
| <b>Total</b>    | <b>16</b>                  |

Source: NCEI

Figure 4.46 - Tornado Paths Through Pamlico Sound Region, 1950-2023



Source: NOAA/NWS Storm Prediction Center



Specific incidents with some level of impact include:

**April 16, 2011** – An EF2 tornado in the Pamlico Sound Region touched down in the Croatan Forest to the west of Highway 70, crossed Highway 70, and damaged numerous trees with winds of 125 mph and a damage width of 200 yards. Numerous homes were severely damaged with several having the second story or roof removed. The tornado continued to track northeast across the Neuse River. The tornado caused an estimated \$4 million in damage.

**November 26, 2013** – A waterspout moved ashore off Bogue Sound and produced a 200-yard-wide EF1 tornado that tracked across parts of Morehead City. The tornado first impacted the Carteret Community College causing structural damage to several buildings. The tornado then lifted and dropped, causing damage to the Carteret General Hospital and several vehicles in the parking lot. The tornado moved into residential areas where many homes were directly damaged or damaged by uprooted trees. The tornado also damaged Crab Point north of Morehead City. Damage was estimated at \$4 million.

**April 25, 2014** – A tornado in Beaufort touched down west of Chocowinity along Taylor Road causing damage to trees and mobile homes. The tornado then strengthened to an EF2 and impacted homes and businesses from U.S. Highway 17 and North Carolina Highway 33 eastward for about 1 mile. The tornado intensified to an EF3 with winds estimated at 150 mph and damaged homes along this path. Many homes, vehicles, and boats in this area were severely damaged or destroyed. The tornado then moved near Shorewood Drive and Daniels Drive after crossing the Pamlico River. Strong EF2 damage occurred along a path more than an additional 15 miles. Damages were extensive to structures and trees. Overall, the storm caused an estimated \$15 million in damage and injured 16 people.

**November 13, 2018** – A supercell thunderstorm came ashore across Carteret County and produced a variety of severe weather. A waterspout formed offshore and came on land as a tornado. Severe thunderstorm winds also occurred in association with the same storm. Another severe thunderstorm produced wind damage in Beaufort County.

**April 13, 2020** – A line of strong to severe thunderstorms with embedded tornadoes swept through Eastern North Carolina during the morning hours between sunrise and noon. Widespread reports of wind damage, including tornadoes, were observed. Six total tornadoes occurred, 5 EF0's, and 1 EF1.

**January 4, 2023** – A very warm and humid air mass combined to produce an unstable atmosphere out ahead of a strong cold front. The front moved through the early evening, while out ahead of it, several lines of severe thunderstorms raced across Eastern North Carolina during the afternoon hours during the peak heating of the day. Multiple reports of damage to homes occurred, along with reports of trees and powerlines blown down with estimated thunderstorm wind gusts of 60 to 70 mph. Within a particular line of thunderstorms, a brief tornado formed and touched down in Bayview before quickly lifting as it exited the community.

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### **THUNDERSTORM WINDS**

Between January 1, 1999 and December 31, 2023, the NCEI recorded 532 separate incidents of high winds (41), strong winds (10), and thunderstorm winds (481), occurring on 239 separate days. These events caused \$ 698000 in recorded property damage, 41 injuries and 2 fatalities. The recorded gusts averaged 60 mph, with the highest gust recorded at 92 mph. Of these events, 44 caused property damage. Wind gusts with property damage recorded averaged \$15,800 in damage, with two gusts causing a reported \$100,000 in damage each (in Beaufort County on March 8, 2005 and in Carteret County on June 9, 2007). All incidents causing property damage are recorded below:

**SECTION 4: RISK ASSESSMENT**
**Table 4.80 – Recorded Wind Events with Property Damages in the Pamlico Sound Region, 1999-2023**

| Location             | Date       | Time | Wind Speed (mph) | Fatalities | Injuries | Property Damage |
|----------------------|------------|------|------------------|------------|----------|-----------------|
| Grantsboro           | 5/22/2000  | 2128 | 77               | 0          | 0        | \$20,000        |
| Cherry Pt Lndg       | 5/28/2000  | 1423 | -                | 0          | 0        | \$15,000        |
| Beaufort             | 5/28/2000  | 1521 | -                | 0          | 0        | \$10,000        |
| Blounts Creek Statio | 7/16/2000  | 1553 | 75               | 0          | 0        | \$10,000        |
| Florence             | 8/16/2000  | 2315 | -                | 0          | 0        | \$30,000        |
| Havelock             | 8/18/2000  | 1855 | -                | 0          | 0        | \$50,000        |
| Cove City            | 5/28/2001  | 1030 | 70               | 0          | 0        | \$1,000         |
| New Bern             | 5/28/2001  | 1030 | 75               | 0          | 0        | \$10,000        |
| Washington Park      | 5/13/2002  | 2035 | 60               | 0          | 0        | \$3,000         |
| Belhaven             | 7/10/2002  | 1421 | 71               | 0          | 0        | \$4,000         |
| Atlantic Beach       | 12/10/2003 | 2245 | 58               | 0          | 0        | \$1,000         |
| New Bern             | 12/10/2003 | 2255 | 72               | 0          | 0        | \$7,000         |
| Beaufort (Zone)      | 3/7/2004   | 2215 | 58               | 0          | 0        | \$5,000         |
| Craven (Zone)        | 3/7/2004   | 2215 | 58               | 0          | 0        | \$4,000         |
| Atlantic Beach       | 4/13/2004  | 1325 | 60               | 0          | 0        | \$10,000        |
| Countywide           | 3/8/2005   | 1125 | 62               | 0          | 0        | \$75,000        |
| Countywide           | 3/8/2005   | 1130 | 85               | 0          | 0        | \$100,000       |
| Countywide           | 3/8/2005   | 1138 | 58               | 0          | 0        | \$10,000        |
| Countywide           | 3/8/2005   | 1142 | 63               | 0          | 0        | \$10,000        |
| Newport              | 5/20/2005  | 2015 | 58               | 0          | 0        | \$5,000         |
| Dover                | 7/28/2006  | 1716 | 63               | 0          | 0        | \$5,000         |
| Washington           | 7/28/2006  | 2120 | 60               | 0          | 0        | \$10,000        |
| Harkers Is           | 6/9/2007   | 1530 | 64               | 0          | 0        | \$100,000       |
| Otway                | 6/9/2007   | 1530 | 69               | 0          | 0        | \$5,000         |
| Trent Woods          | 1/7/2009   | 1842 | 63               | 0          | 0        | \$10,000        |
| Aurora               | 6/26/2009  | 1524 | 69               | 0          | 0        | \$5,000         |
| Beaufort (Zone)      | 2/10/2010  | 800  | 52               | 0          | 0        | \$500           |
| Craven (Zone)        | 2/10/2010  | 830  | 52               | 0          | 0        | \$500           |
| Pamlico (Zone)       | 2/10/2010  | 1120 | 52               | 0          | 0        | \$500           |
| Acre Station         | 6/29/2010  | 1441 | 63               | 0          | 0        | \$500           |
| New Bern             | 6/29/2010  | 1731 | 63               | 0          | 0        | \$5,000         |
| Beaufort             | 6/20/2011  | 200  | 76               | 0          | 0        | \$15,000        |
| Beaufort Moorehd Arp | 6/20/2011  | 203  | 75               | 0          | 0        | \$50,000        |
| Pinetown             | 7/23/2012  | 720  | 58               | 0          | 0        | \$1,000         |
| Atlantic Beach       | 12/26/2012 | 1450 | 81               | 0          | 0        | \$3,000         |
| Granthams            | 1/31/2013  | 237  | 63               | 0          | 0        | \$25,000        |
| Alliance             | 1/31/2013  | 247  | 58               | 0          | 0        | \$3,000         |
| Carteret (Zone)      | 3/6/2013   | 1500 | 49               | 0          | 0        | \$500           |
| Bayview              | 6/27/2013  | 1722 | 58               | 0          | 0        | \$500           |
| Beaufort Moorehd Arp | 2/16/2016  | 840  | 69               | 0          | 0        | \$5,000         |
| Lennoxville          | 2/16/2016  | 855  | 63               | 0          | 0        | \$10,000        |
| Bettie               | 2/16/2016  | 857  | 81               | 0          | 0        | \$10,000        |

**SECTION 4: RISK ASSESSMENT**

| Location     | Date      | Time | Wind Speed (mph) | Fatalities | Injuries | Property Damage  |
|--------------|-----------|------|------------------|------------|----------|------------------|
| Bettie       | 2/16/2016 | 858  | 85               | 0          | 0        | \$50,000         |
| Granthams    | 7/5/2016  | 2014 | 58               | 0          | 0        | \$3,000          |
| <b>Total</b> |           |      |                  | <b>0</b>   | <b>0</b> | <b>\$687,000</b> |

Source: NCEI

Of all 532 wind events during this period, there were 3 incidents that directly caused deaths or injuries. These incidents are recorded below:

**Table 4.81 – Recorded Wind Events with Injuries and/or Fatalities, 1999-2018**

| Location              | Event Type        | Date     | Wind Speed (mph) | Fatalities | Injuries  | Property Damage |
|-----------------------|-------------------|----------|------------------|------------|-----------|-----------------|
| Mc Connell            | Thunderstorm Wind | 7/1/2012 | 69               | 2          | 0         | \$0             |
| Washington Arpt       | Thunderstorm Wind | 7/1/2012 | 69               | 0          | 40        | \$0             |
| Blounts Creek Station | Thunderstorm Wind | 6/5/2014 | 58               | 0          | 1         | \$0             |
| <b>Total</b>          |                   |          |                  | <b>2</b>   | <b>41</b> | <b>\$0</b>      |

Source: NCEI

**LIGHTNING**

According to NCEI data, there were 7 lightning strikes reported between 1999 and 2023. Of these, five events caused recorded property damage totaling over \$6.1 million, with one event responsible for the majority of that damage. Two additional events directly caused two fatalities and one injury. No crop damage was recorded by these strikes. It should be noted that lightning events recorded by the NCEI are only those that are reported; it is certain that additional lightning incidents have occurred in the Region. Table 4.82 details NCEI-recorded lightning strikes from 1999 through 2023.

**Table 4.82 – Recorded Lightning Strikes in the Pamlico Sound Region, 1999-2023**

| Location       | Date       | Time | Fatalities | Injuries | Property Damage    |
|----------------|------------|------|------------|----------|--------------------|
| Washington     | 7/25/2001  | 1610 | 0          | 0        | \$2,000            |
| Pantego        | 10/11/2002 | 1830 | 0          | 0        | \$100,000          |
| North Harlowe  | 6/19/2003  | 1915 | 1          | 1        | \$0                |
| Cherry Pt Mcas | 6/8/2006   | 1400 | 1          | 0        | \$0                |
| Newport        | 6/9/2007   | 1515 | 0          | 0        | \$5,000            |
| Oriental       | 7/21/2010  | 2124 | 0          | 0        | \$6,000,000        |
| Granthams      | 7/20/2012  | 1645 | 0          | 0        | \$500              |
| <b>Total</b>   |            |      | <b>2</b>   | <b>1</b> | <b>\$6,107,500</b> |

Source: NCEI

The following are a selection of narrative descriptions recorded in NCEI for lightning events that occurred in the Pamlico Sound Region:

**July 25, 2001** – Lightning struck a tree which then fell onto a residence late in the afternoon. The residence suffered minor structural damage from the weight of the tree.

**October 11, 2002** – Lightning struck a historic church near Pantego causing it to burn completely to the ground.

**June 19, 2003** – Craven County Emergency Management reported a lightning fatality which occurred on Adams Creek in the Harlowe area of southeastern Craven County.

**June 8, 2006** – Mother and unborn child killed by lightning strike just outside of Marine Squadron 1 Transport Building.

**July 21, 2010** – House struck by lightning and burned in the River Dunes community in Oriental.

Most recorded property damage attributed to lightning was due to structure fires ignited by lightning. The highest rate of property damage recorded for a single incident was \$6,000,000.

**HAIL**

NCEI records 351 separate hail incidents across 129 days between January 1, 1999 and December 31, 2023 in the Pamlico Sound Region. Of these, eight events were reported to have directly caused property damage; there were no reported deaths, injuries or crop damage. The largest diameter hail recorded in the Region was 2.75 inches; hail this size fell on four separate occasions, in Beaufort, Craven, and Pamlico Counties. The average hail size in all storms was a little over one inch in diameter. Table 4.83 summarizes hail occurrences by county from 1999 through 2023.

**Table 4.83 – Summary of Hail Occurrences by County, 1999-2023**

| <b>County</b>   | <b>Number of Occurrences</b> | <b>Average Hail Diameter</b> | <b>Total Property Damage</b> |
|-----------------|------------------------------|------------------------------|------------------------------|
| Beaufort County | 113                          | 1.09"                        | \$150,000                    |
| Carteret County | 63                           | 0.93"                        | \$0                          |
| Craven County   | 141                          | 1.07"                        | \$745,000                    |
| Pamlico County  | 34                           | 1.07"                        | \$25,000                     |
| <b>Total</b>    | <b>351</b>                   | <b>1.04"</b>                 | <b>\$920,000</b>             |

The following narratives provide detail on select hailstorms from the above list of NCEI recorded events:

**May 21, 2000** – Widespread golf ball size hail damaged numerous automobiles in and around New Bern.

**June 12, 2006** – Hail up to baseball size broke windows in cars and homes.

**March 28, 2007** – A cold front moved slowly south across eastern North Carolina during the late morning and afternoon hours on March 28th. Ahead of the front temperatures warmed into the 80s leading to an unstable atmosphere. Scattered thunderstorms developed over mainly the northern counties during the afternoon and few produce large hail up to 2 inches in diameter. The large hail fell mainly over the cities of Washington and Greenville and resulted in dents on cars and a few reports of cracked windshields.

**July 28, 2014** – Numerous showers and thunderstorms developed over during the afternoon and evening of July 28th along the North Carolina coast. Several of the storms became severe producing strong winds and very large hail. Baseball size hail in Havelock damaged many vehicle and structures.

**August 10, 2019** – A cold front that was near the Virginia/North Carolina state line early in the morning of the 10th moved into Eastern North Carolina by early afternoon. Between this front and the daily sea breeze, high instability and shear led to the formation of numerous thunderstorms during the afternoon and evening. Some storms produced damaging winds and large hail.

**May 9, 2023** – A cold front sagged into Eastern NC during the afternoon hours. An unstable atmosphere with strong shear in place ahead of the front primed the region for severe thunderstorm development. The timing of the front coincided with peak afternoon heating, allowing for multiple rounds of supercells that produced scattered to numerous severe storm reports during the mid-afternoon hours all the way through the mid evening hours. Hail up to two inches in diameter, and wind gusts of 60 to 70 mph occurred with the strongest thunderstorms. The severe hail fell all the way to the coast, which is quite rare.

Most hail damage reported was associated with dents and broken windows on cars; some reports indicated damage to siding and roofs on structures.

### PROBABILITY OF FUTURE OCCURRENCE

Based on historical occurrences recorded by NCEI for the 25-year period from 1999 through 2023, the Pamlico Sound Region averages 9.5 days with thunderstorm wind events per year. The region experienced 112 tornadoes during this period, which equates to roughly 4.5 tornadoes per year on average. Over this same period, 7 lightning events were reported as having caused death, injury, or property damage, which equates to a 28 percent annual chance of a damaging lightning strike. Additionally, the region has averaged over 5 days with reported hail incidents per year.

Based on these historical occurrences, there is a 100% chance that the Region will experience tornadoes and/or thunderstorms each year. The probability of a damaging impacts is also highly likely.

*Probability: 4 – Highly Likely*

### CLIMATE CHANGE

According to the National Aeronautics and Space Administration (NASA), thunderstorm events in the future are likely to become more frequent in the southeast as a result of weather extremes. Thunderstorm potential is measured by an index that NASA created called the Convective Available Potential Energy (CAPE) index. This measures how warm and moist the air is, which is a major contributing factor in thunderstorm/tornado formation. NASA projects that by the period of 2072-2099, the CAPE in the southeastern United States will increase dramatically. Parts of North Carolina are in an area that will likely experience the greatest increase in CAPE in the United States and all of the state is likely to experience at least some increase. This indicates that there will potentially be even more frequent thunderstorms in the state going forward.

According to NOAA and NWS, the number of annual tornado days is decreasing, but the number of tornadoes that occur on tornado days is increasing. Research suggests there is a greater risk of more off-season tornadoes in a warmer future climate, which could mean more tornadic activity at a time of year when people are least expecting it. Results are inconclusive for whether tornadoes frequency could change during the traditional severe weather season. Based on studies from NASA's Earth Observatory, meteorologists are unsure why some thunderstorms generate tornadoes and others don't, beyond knowing that they require a certain type of wind shear. Tornadoes spawn from approximately one percent of thunderstorms, usually supercell thunderstorms that are in a wind shear environment that promotes rotation. Some studies show a potential for a decrease in wind shear in mid-latitude areas. Many tornadoes along the coast are spawned by tropical cyclones; therefore, climate change impacts on tropical cyclones may affect tornado activity in the Pamlico Sound Region. The potential influence of climate change on tornadoes will continue to be revisited over time.

### VULNERABILITY ASSESSMENT

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#### PEOPLE

People and populations exposed to the elements are most vulnerable to severe weather. A common hazard associated with wind events is falling trees and branches. Risk of being struck by lightning is greater in open areas, at higher elevations, and on the water. Lightning can also cause cascading hazards, including power loss. Loss of power could critically impact those relying on energy to service, including those that need powered medical devices. Additionally, ignition of fires is always a concern with lightning strikes.

The availability of sheltered locations such as basements, buildings constructed using hail-resistant materials and methods, and public storm shelters, all reduce the exposure of the population. Individuals who work outdoors may face increased risk during severe weather events. Residents living in mobile

**SECTION 4: RISK ASSESSMENT**

homes are also more vulnerable to hail events due to the lack of shelter locations and the vulnerability of the housing unit to damages. Table 4.84 summarizes estimates of occupied mobile home units in the Pamlico Sound Region by jurisdiction as of 2022. Vulnerability based on housing type is highest in the following communities, where over 20% of the occupied housing stock is mobile homes: Beaufort County, Belhaven, Bogue, Cedar Point, Indian Beach, Peletier, Bridgeton, Cove City, Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, and Vandemere. Vulnerability based on housing type is lowest in the following communities where less than 5% of the occupied housing stock is in mobile homes: Washington, Bath, Washington Park, Beaufort, Morehead City, Newport, Pine Knoll Shores, River Bend, Trent Woods, and Oriental.

**Table 4.84 - Mobile Home Units in the Pamlico Sound Region, 2022**

| <b>Jurisdiction</b>       | <b>Occupied Mobile Home Units</b> | <b>Total Occupied Housing Units</b> | <b>Percent of Occupied Housing</b> |
|---------------------------|-----------------------------------|-------------------------------------|------------------------------------|
| Beaufort County           | 6,240                             | 24,299                              | 25.7%                              |
| City of Washington        | 173                               | 5,058                               | 3.4%                               |
| Town of Aurora            | 26                                | 287                                 | 9.1%                               |
| Town of Bath              | 0                                 | 167                                 | 0.0%                               |
| Town of Belhaven          | 211                               | 838                                 | 25.2%                              |
| Town of Chocowinity       | 54                                | 489                                 | 11.0%                              |
| Town of Pantego           | 15                                | 106                                 | 14.2%                              |
| Town of Washington Park   | 0                                 | 254                                 | 0.0%                               |
| Carteret County           | 8,554                             | 51,096                              | 16.7%                              |
| Town of Atlantic Beach    | 954                               | 5,174                               | 18.4%                              |
| Town of Beaufort          | 27                                | 3,042                               | 0.9%                               |
| Town of Bogue             | 83                                | 354                                 | 23.4%                              |
| Town of Cape Carteret     | 66                                | 1,267                               | 5.2%                               |
| Town of Cedar Point       | 239                               | 1,158                               | 20.6%                              |
| Town of Emerald Isle      | 888                               | 6,739                               | 13.2%                              |
| Town of Indian Beach      | 781                               | 1,808                               | 43.2%                              |
| Town of Morehead City     | 292                               | 6,320                               | 4.6%                               |
| Town of Newport           | 51                                | 1,849                               | 2.8%                               |
| Town of Peletier          | 241                               | 562                                 | 42.9%                              |
| Town of Pine Knoll Shores | 12                                | 2,167                               | 0.6%                               |
| Craven County             | 6,662                             | 47,051                              | 14.2%                              |
| City of Havelock          | 364                               | 5,855                               | 6.2%                               |
| City of New Bern          | 1,002                             | 16,265                              | 6.2%                               |
| Town of Bridgeton         | 58                                | 245                                 | 23.7%                              |
| Town of Cove City         | 101                               | 268                                 | 37.7%                              |
| Town of Dover             | 37                                | 204                                 | 18.1%                              |
| Town of River Bend        | 7                                 | 1,590                               | 0.4%                               |
| Town of Trent Woods       | 43                                | 1,813                               | 2.4%                               |
| Town of Vanceboro         | 32                                | 450                                 | 7.1%                               |
| Pamlico County            | 1,652                             | 7,206                               | 22.9%                              |
| Town of Alliance          | 108                               | 394                                 | 27.4%                              |
| Town of Arapahoe          | 60                                | 185                                 | 32.4%                              |
| Town of Bayboro           | 96                                | 369                                 | 26.0%                              |
| Town of Grantsboro        | 69                                | 273                                 | 25.3%                              |
| Town of Mesic             | 28                                | 111                                 | 25.2%                              |

## SECTION 4: RISK ASSESSMENT

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| Jurisdiction            | Occupied Mobile Home Units | Total Occupied Housing Units | Percent of Occupied Housing |
|-------------------------|----------------------------|------------------------------|-----------------------------|
| Town of Minnesott Beach | 27                         | 363                          | 7.4%                        |
| Town of Oriental        | 16                         | 811                          | 2.0%                        |
| Town of Stonewall       | 18                         | 171                          | 10.5%                       |
| Town of Vandemere       | 61                         | 146                          | 41.8%                       |

Source: American Community Survey 2018-2022 5-Year Estimates

Since 1999, the NCEI records two fatalities and one injury attributed to lightning in the Pamlico Sound Region. NCEI records 2 fatalities and 41 injuries attributed to wind events in the Region. There are no injuries or fatalities attributed to hail. There have been 35 injuries attributed to tornadoes in the Region during this period, which were attributed to tornadoes rated as low as EF0, illustrating the destructive power of tornadoes and the dangers they pose to exposed populations without proper shelter.

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### PROPERTY

Property damage caused by lightning usually occurs in one of two ways – either by direct damages through fires ignited by lightning, or by secondary impacts due to power loss. According to data collected on lightning strikes in the Region, most recorded property damage was due to structure fires.

NCEI records \$6,107,500 in property damages caused by lightning over the 20-year period from 1999-2023, which equates to an annualized loss of \$244,300.

General damages to property from hail are direct, including destroyed windows, dented cars, and building, roof and siding damage in areas exposed to hail. Hail can also cause enough damage to cars to cause them to be totaled. The level of damage is commensurate with both a material's ability to withstand hail impacts, and the size of the hailstones that are falling. Construction practices and building codes can help maximize the resistance of the structures to damage. Large amounts of hail may need to be physically cleared from roadways and sidewalks, depending on accumulation. Hail can cause other cascading impacts, including power loss. During the 25-year span of 1999 through 2023, NCEI reported \$920,000 in damages caused by hail in the Pamlico Sound Region, which equates to an annualized loss of \$36,800. It should be noted that property damage due to hail is usually insured loss, with damages covered under most major comprehensive insurance plans. Because of this, hail losses are notoriously underreported by the NCEI. It is difficult to find another accurate repository of hail damages, thus the NCEI is still used to form a baseline.

When strong enough, wind events can cause significant direct damage to buildings and infrastructure. NCEM's IRISK database estimates damages from tornadoes and thunderstorms by storm magnitude. Table 4.85 through Table 4.89 detail the estimated buildings impacted from tornado events of magnitudes ranging from EF0 to EF4. Damages from increasing magnitudes of thunderstorm wind events are detailed in Table 4.90 through Table 4.94. Note that all of these tables provide an estimate of building damages should all exposed property be impacted by an event of the stated magnitude. Actual damages resulting from a tornado or thunderstorm event of each magnitude would be lower because any one event would impact only a portion of the region. These tables should only be used to understand the range of damage potential relative to storms of varying degrees of severity.

**SECTION 4: RISK ASSESSMENT**

**Table 4.85 - Estimated Buildings Impacted by EFO Tornado**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|--------------------------------|---------------|-------------------------------|------------|----------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Beaufort</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Beaufort County | 20,577        | 17,896                        | 87         | \$149,119,025        | 2,004                        | 10         | \$37,641,013        | 353                      | 2          | \$11,323,642        | 20,253                  | 98         | \$198,083,680        |
| City of Washington             | 5,790         | 4,833                         | 83         | \$46,949,001         | 709                          | 12         | \$41,070,344        | 197                      | 3          | \$8,483,523         | 5,739                   | 99         | \$96,502,868         |
| Town of Aurora                 | 579           | 440                           | 76         | \$3,476,743          | 85                           | 15         | \$1,665,987         | 33                       | 6          | \$833,707           | 558                     | 96         | \$5,976,437          |
| Town of Bath                   | 561           | 471                           | 84         | \$5,157,198          | 51                           | 9          | \$1,137,260         | 31                       | 6          | \$663,226           | 553                     | 99         | \$6,957,683          |
| Town of Belhaven               | 1,087         | 918                           | 84         | \$6,932,169          | 94                           | 9          | \$1,623,756         | 25                       | 2          | \$471,113           | 1,037                   | 95         | \$9,027,038          |
| Town of Chocowinity            | 398           | 330                           | 83         | \$4,188,263          | 36                           | 9          | \$1,971,184         | 28                       | 7          | \$759,513           | 394                     | 99         | \$6,918,959          |
| Town of Pantego                | 132           | 108                           | 82         | \$868,037            | 11                           | 8          | \$286,276           | 7                        | 5          | \$162,516           | 126                     | 95         | \$1,316,829          |
| Town of Washington Park        | 232           | 216                           | 93         | \$2,468,792          | 13                           | 6          | \$190,551           | 0                        | 0          | \$0                 | 229                     | 99         | \$2,659,343          |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>25,212</b>                 | <b>86</b>  | <b>\$219,159,228</b> | <b>3,003</b>                 | <b>10</b>  | <b>\$85,586,371</b> | <b>674</b>               | <b>2</b>   | <b>\$22,697,240</b> | <b>28,889</b>           | <b>98</b>  | <b>\$327,442,837</b> |
| <b>Carteret</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Carteret County | 29,284        | 14,032                        | 48         | \$101,850,307        | 1,028                        | 4          | \$15,267,853        | 234                      | 1          | \$7,303,599         | 15,294                  | 52         | \$124,421,758        |
| Town of Atlantic Beach         | 4,141         | 3,240                         | 78         | \$32,361,998         | 153                          | 4          | \$2,655,413         | 9                        | 0          | \$100,465           | 3,402                   | 82         | \$35,117,877         |
| Town of Beaufort               | 4,605         | 2,909                         | 63         | \$23,359,400         | 283                          | 6          | \$11,873,311        | 79                       | 2          | \$3,157,514         | 3,271                   | 71         | \$38,390,225         |
| Town of Bogue                  | 642           | 324                           | 50         | \$2,407,180          | 31                           | 5          | \$403,122           | 8                        | 1          | \$141,297           | 363                     | 57         | \$2,951,600          |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$7,623,949          | 91                           | 5          | \$1,782,501         | 26                       | 1          | \$480,916           | 989                     | 56         | \$9,887,365          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$9,516,260          | 101                          | 5          | \$2,074,110         | 10                       | 1          | \$195,544           | 1,367                   | 71         | \$11,785,913         |
| Town of Emerald Isle           | 7,154         | 5,524                         | 77         | \$72,846,062         | 159                          | 2          | \$2,721,187         | 19                       | 0          | \$350,420           | 5,702                   | 80         | \$75,917,669         |
| Town of Indian Beach           | 1,138         | 864                           | 76         | \$7,577,501          | 24                           | 2          | \$506,050           | 7                        | 1          | \$58,040            | 895                     | 79         | \$8,141,591          |
| Town of Morehead City          | 10,811        | 6,745                         | 62         | \$58,810,925         | 841                          | 8          | \$23,523,071        | 214                      | 2          | \$10,057,201        | 7,800                   | 72         | \$92,391,197         |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$22,625,216         | 347                          | 6          | \$5,170,611         | 97                       | 2          | \$2,284,052         | 4,080                   | 75         | \$30,079,879         |
| Town of Peletier               | 943           | 469                           | 50         | \$2,614,948          | 52                           | 6          | \$1,293,254         | 8                        | 1          | \$133,142           | 529                     | 56         | \$4,041,345          |
| Town of Pine Knoll Shores      | 2,253         | 1,644                         | 73         | \$23,986,191         | 80                           | 4          | \$1,910,825         | 29                       | 1          | \$410,702           | 1,753                   | 78         | \$26,307,718         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>41,515</b>                 | <b>59</b>  | <b>\$365,579,937</b> | <b>3,190</b>                 | <b>5</b>   | <b>\$69,181,308</b> | <b>740</b>               | <b>1</b>   | <b>\$24,672,892</b> | <b>45,445</b>           | <b>65</b>  | <b>\$459,434,137</b> |



**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|-------------------------------|----------------|-------------------------------|------------|----------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Craven</b>                 |                |                               |            |                      |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Craven County  | 24,876         | 22,277                        | 90         | \$164,264,296        | 2,040                        | 8          | \$41,461,519         | 305                      | 1          | \$13,955,948         | 24,622                  | 99         | \$219,681,764          |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$31,027,060         | 367                          | 7          | \$16,017,998         | 148                      | 3          | \$21,755,088         | 5,359                   | 99         | \$68,800,146           |
| City of New Bern              | 13,049         | 11,367                        | 87         | \$88,998,949         | 1,240                        | 10         | \$72,130,762         | 298                      | 2          | \$20,540,922         | 12,905                  | 99         | \$181,670,632          |
| Town of Bridgeton             | 326            | 235                           | 72         | \$1,310,199          | 70                           | 21         | \$1,118,257          | 10                       | 3          | \$96,538             | 315                     | 97         | \$2,524,995            |
| Town of Cove City             | 294            | 252                           | 86         | \$1,353,614          | 29                           | 10         | \$238,837            | 12                       | 4          | \$303,591            | 293                     | 100        | \$1,896,042            |
| Town of Dover                 | 299            | 276                           | 92         | \$1,632,463          | 6                            | 2          | \$66,657             | 17                       | 6          | \$191,739            | 299                     | 100        | \$1,890,859            |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$11,876,259         | 25                           | 2          | \$3,953,857          | 3                        | 0          | \$82,529             | 1,544                   | 99         | \$15,912,645           |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$21,663,906         | 20                           | 1          | \$1,078,002          | 21                       | 1          | \$1,049,042          | 1,909                   | 100        | \$23,790,949           |
| Town of Vanceboro             | 522            | 411                           | 79         | \$2,659,801          | 76                           | 15         | \$1,396,338          | 33                       | 6          | \$1,394,882          | 520                     | 100        | \$5,451,021            |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>43,046</b>                 | <b>89</b>  | <b>\$324,786,547</b> | <b>3,873</b>                 | <b>8</b>   | <b>\$137,462,227</b> | <b>847</b>               | <b>2</b>   | <b>\$59,370,279</b>  | <b>47,766</b>           | <b>99</b>  | <b>\$521,619,053</b>   |
| <b>Pamlico</b>                |                |                               |            |                      |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Pamlico County | 6,428          | 5,803                         | 90         | \$34,411,036         | 503                          | 8          | \$4,293,833          | 70                       | 1          | \$647,289            | 6,376                   | 99         | \$39,352,158           |
| Town of Alliance              | 577            | 484                           | 84         | \$2,545,613          | 78                           | 14         | \$1,048,970          | 14                       | 2          | \$105,744            | 576                     | 100        | \$3,700,328            |
| Town of Arapahoe              | 430            | 386                           | 90         | \$2,008,582          | 26                           | 6          | \$263,957            | 16                       | 4          | \$353,208            | 428                     | 100        | \$2,625,747            |
| Town of Bayboro               | 515            | 408                           | 79         | \$2,119,093          | 74                           | 14         | \$923,686            | 31                       | 6          | \$1,517,737          | 513                     | 100        | \$4,560,517            |
| Town of Grantsboro            | 584            | 527                           | 90         | \$2,401,531          | 36                           | 6          | \$840,439            | 17                       | 3          | \$363,840            | 580                     | 99         | \$3,605,810            |
| Town of Mesic                 | 186            | 170                           | 91         | \$932,960            | 10                           | 5          | \$41,326             | 5                        | 3          | \$27,108             | 185                     | 99         | \$1,001,395            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$3,286,587          | 14                           | 3          | \$951,273            | 2                        | 0          | \$20,689             | 401                     | 100        | \$4,258,549            |
| Town of Oriental              | 1,378          | 1,255                         | 91         | \$9,530,805          | 107                          | 8          | \$1,217,645          | 14                       | 1          | \$150,660            | 1,376                   | 100        | \$10,899,111           |
| Town of Stonewall             | 227            | 199                           | 88         | \$1,050,094          | 21                           | 9          | \$216,652            | 6                        | 3          | \$255,795            | 226                     | 100        | \$1,522,542            |
| Town of Vandemere             | 192            | 168                           | 88         | \$1,008,581          | 8                            | 4          | \$147,292            | 14                       | 7          | \$71,152             | 190                     | 99         | \$1,227,025            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,785</b>                  | <b>90</b>  | <b>\$59,294,882</b>  | <b>877</b>                   | <b>8</b>   | <b>\$9,945,073</b>   | <b>189</b>               | <b>2</b>   | <b>\$3,513,222</b>   | <b>10,851</b>           | <b>99</b>  | <b>\$72,753,182</b>    |
| <b>Region Total</b>           | <b>158,620</b> | <b>119,558</b>                | <b>75</b>  | <b>\$968,820,594</b> | <b>10,943</b>                | <b>7</b>   | <b>\$302,174,979</b> | <b>2,450</b>             | <b>2</b>   | <b>\$110,253,633</b> | <b>132,951</b>          | <b>84</b>  | <b>\$1,381,249,209</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.86 - Estimated Buildings Impacted by EFI Tornado**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|--------------------------------|---------------|-------------------------------|------------|------------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Beaufort</b>                |               |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Beaufort County | 20,577        | 17,896                        | 87         | \$1,063,564,394        | 2,004                        | 10         | \$244,972,737        | 353                      | 2          | \$73,714,348         | 20,253                  | 98         | \$1,382,251,479        |
| City of Washington             | 5,790         | 4,833                         | 83         | \$330,375,770          | 709                          | 12         | \$258,857,066        | 197                      | 3          | \$53,721,372         | 5,739                   | 99         | \$642,954,208          |
| Town of Aurora                 | 579           | 440                           | 76         | \$24,179,818           | 85                           | 15         | \$9,816,081          | 33                       | 6          | \$4,950,598          | 558                     | 96         | \$38,946,496           |
| Town of Bath                   | 561           | 471                           | 84         | \$36,882,598           | 51                           | 9          | \$6,517,855          | 31                       | 6          | \$3,621,238          | 553                     | 99         | \$47,021,691           |
| Town of Belhaven               | 1,087         | 918                           | 84         | \$48,932,663           | 94                           | 9          | \$10,750,235         | 25                       | 2          | \$3,149,610          | 1,037                   | 95         | \$62,832,508           |
| Town of Chocowinity            | 398           | 330                           | 83         | \$29,017,390           | 36                           | 9          | \$11,424,596         | 28                       | 7          | \$4,618,740          | 394                     | 99         | \$45,060,726           |
| Town of Pantego                | 132           | 108                           | 82         | \$6,143,164            | 11                           | 8          | \$1,877,363          | 7                        | 5          | \$943,054            | 126                     | 95         | \$8,963,581            |
| Town of Washington Park        | 232           | 216                           | 93         | \$18,215,080           | 13                           | 6          | \$1,078,727          | 0                        | 0          | \$0                  | 229                     | 99         | \$19,293,807           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>25,212</b>                 | <b>86</b>  | <b>\$1,557,310,877</b> | <b>3,003</b>                 | <b>10</b>  | <b>\$545,294,660</b> | <b>674</b>               | <b>2</b>   | <b>\$144,718,960</b> | <b>28,889</b>           | <b>98</b>  | <b>\$2,247,324,496</b> |
| <b>Carteret</b>                |               |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Carteret County | 29,284        | 14,032                        | 48         | \$722,412,970          | 1,028                        | 4          | \$99,037,775         | 234                      | 1          | \$39,975,326         | 15,294                  | 52         | \$861,426,071          |
| Town of Atlantic Beach         | 4,141         | 3,240                         | 78         | \$225,615,838          | 153                          | 4          | \$17,575,193         | 9                        | 0          | \$808,807            | 3,402                   | 82         | \$243,999,839          |
| Town of Beaufort               | 4,605         | 2,909                         | 63         | \$165,606,758          | 283                          | 6          | \$75,519,767         | 79                       | 2          | \$17,994,170         | 3,271                   | 71         | \$259,120,694          |
| Town of Bogue                  | 642           | 324                           | 50         | \$17,180,664           | 31                           | 5          | \$2,568,137          | 8                        | 1          | \$1,104,496          | 363                     | 57         | \$20,853,297           |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$54,254,859           | 91                           | 5          | \$13,443,900         | 26                       | 1          | \$2,632,267          | 989                     | 56         | \$70,331,025           |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$65,622,992           | 101                          | 5          | \$12,518,724         | 10                       | 1          | \$1,574,251          | 1,367                   | 71         | \$79,715,968           |
| Town of Emerald Isle           | 7,154         | 5,524                         | 77         | \$515,204,899          | 159                          | 2          | \$17,890,268         | 19                       | 0          | \$2,821,093          | 5,702                   | 80         | \$535,916,260          |
| Town of Indian Beach           | 1,138         | 864                           | 76         | \$51,075,726           | 24                           | 2          | \$3,339,729          | 7                        | 1          | \$467,258            | 895                     | 79         | \$54,882,713           |
| Town of Morehead City          | 10,811        | 6,745                         | 62         | \$412,766,246          | 841                          | 8          | \$146,303,948        | 214                      | 2          | \$64,075,919         | 7,800                   | 72         | \$623,146,113          |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$159,961,449          | 347                          | 6          | \$32,682,605         | 97                       | 2          | \$12,898,955         | 4,080                   | 75         | \$205,543,009          |
| Town of Peletier               | 943           | 469                           | 50         | \$18,113,426           | 52                           | 6          | \$10,117,415         | 8                        | 1          | \$1,071,875          | 529                     | 56         | \$29,302,716           |
| Town of Pine Knoll Shores      | 2,253         | 1,644                         | 73         | \$163,164,052          | 80                           | 4          | \$14,477,377         | 29                       | 1          | \$3,306,398          | 1,753                   | 78         | \$180,947,828          |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>41,515</b>                 | <b>59</b>  | <b>\$2,570,979,879</b> | <b>3,190</b>                 | <b>5</b>   | <b>\$445,474,838</b> | <b>740</b>               | <b>1</b>   | <b>\$148,730,815</b> | <b>45,445</b>           | <b>65</b>  | <b>\$3,165,185,533</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|-------------------------------|----------------|-------------------------------|------------|------------------------|------------------------------|------------|------------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Craven</b>                 |                |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Craven County  | 24,876         | 22,277                        | 90         | \$1,186,662,247        | 2,040                        | 8          | \$258,000,535          | 305                      | 1          | \$83,974,786         | 24,622                  | 99         | \$1,528,637,568        |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$224,759,346          | 367                          | 7          | \$89,002,528           | 148                      | 3          | \$142,124,983        | 5,359                   | 99         | \$455,886,857          |
| City of New Bern              | 13,049         | 11,367                        | 87         | \$645,153,672          | 1,240                        | 10         | \$415,070,642          | 298                      | 2          | \$127,343,720        | 12,905                  | 99         | \$1,187,568,034        |
| Town of Bridgeton             | 326            | 235                           | 72         | \$9,520,717            | 70                           | 21         | \$6,868,965            | 10                       | 3          | \$706,142            | 315                     | 97         | \$17,095,825           |
| Town of Cove City             | 294            | 252                           | 86         | \$9,698,959            | 29                           | 10         | \$1,176,683            | 12                       | 4          | \$2,444,136          | 293                     | 100        | \$13,319,778           |
| Town of Dover                 | 299            | 276                           | 92         | \$11,705,745           | 6                            | 2          | \$332,248              | 17                       | 6          | \$1,543,823          | 299                     | 100        | \$13,581,815           |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$87,326,336           | 25                           | 2          | \$21,660,548           | 3                        | 0          | \$664,408            | 1,544                   | 99         | \$109,651,291          |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$159,870,167          | 20                           | 1          | \$6,520,181            | 21                       | 1          | \$6,202,212          | 1,909                   | 100        | \$172,592,560          |
| Town of Vanceboro             | 522            | 411                           | 79         | \$18,792,206           | 76                           | 15         | \$6,913,378            | 33                       | 6          | \$6,552,384          | 520                     | 100        | \$32,257,967           |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>43,046</b>                 | <b>89</b>  | <b>\$2,353,489,395</b> | <b>3,873</b>                 | <b>8</b>   | <b>\$805,545,708</b>   | <b>847</b>               | <b>2</b>   | <b>\$371,556,594</b> | <b>47,766</b>           | <b>99</b>  | <b>\$3,530,591,695</b> |
| <b>Pamlico</b>                |                |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Pamlico County | 6,428          | 5,803                         | 90         | \$248,402,578          | 503                          | 8          | \$32,538,234           | 70                       | 1          | \$5,211,068          | 6,376                   | 99         | \$286,151,880          |
| Town of Alliance              | 577            | 484                           | 84         | \$18,126,994           | 78                           | 14         | \$5,642,406            | 14                       | 2          | \$775,094            | 576                     | 100        | \$24,544,494           |
| Town of Arapahoe              | 430            | 386                           | 90         | \$14,427,287           | 26                           | 6          | \$1,710,430            | 16                       | 4          | \$2,193,177          | 428                     | 100        | \$18,330,894           |
| Town of Bayboro               | 515            | 408                           | 79         | \$15,237,963           | 74                           | 14         | \$5,723,805            | 31                       | 6          | \$9,133,692          | 513                     | 100        | \$30,095,460           |
| Town of Grantsboro            | 584            | 527                           | 90         | \$17,083,916           | 36                           | 6          | \$5,159,114            | 17                       | 3          | \$2,733,715          | 580                     | 99         | \$24,976,746           |
| Town of Mesic                 | 186            | 170                           | 91         | \$6,743,403            | 10                           | 5          | \$261,378              | 5                        | 3          | \$218,239            | 185                     | 99         | \$7,223,020            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$23,643,771           | 14                           | 3          | \$7,655,018            | 2                        | 0          | \$166,557            | 401                     | 100        | \$31,465,346           |
| Town of Oriental              | 1,378          | 1,255                         | 91         | \$69,353,148           | 107                          | 8          | \$7,640,016            | 14                       | 1          | \$1,212,903          | 1,376                   | 100        | \$78,206,067           |
| Town of Stonewall             | 227            | 199                           | 88         | \$7,556,066            | 21                           | 9          | \$1,416,517            | 6                        | 3          | \$1,144,199          | 226                     | 100        | \$10,116,783           |
| Town of Vandemere             | 192            | 168                           | 88         | \$7,313,319            | 8                            | 4          | \$1,023,283            | 14                       | 7          | \$572,820            | 190                     | 99         | \$8,909,422            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,785</b>                  | <b>90</b>  | <b>\$427,888,445</b>   | <b>877</b>                   | <b>8</b>   | <b>\$68,770,201</b>    | <b>189</b>               | <b>2</b>   | <b>\$23,361,464</b>  | <b>10,851</b>           | <b>99</b>  | <b>\$520,020,112</b>   |
| <b>Region Total</b>           | <b>158,620</b> | <b>119,558</b>                | <b>75</b>  | <b>\$6,909,668,596</b> | <b>10,943</b>                | <b>7</b>   | <b>\$1,865,085,407</b> | <b>2,450</b>             | <b>2</b>   | <b>\$688,367,833</b> | <b>132,951</b>          | <b>84</b>  | <b>\$9,463,121,836</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.87 – Estimated Buildings Impacted by EF2 Tornado**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|--------------------------------|---------------|-------------------------------|------------|------------------------|------------------------------|------------|------------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Beaufort</b>                |               |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Beaufort County | 20,577        | 17,896                        | 87         | \$1,927,215,705        | 2,004                        | 10         | \$519,453,738          | 353                      | 2          | \$228,131,424        | 20,253                  | 98         | \$2,674,800,868        |
| City of Washington             | 5,790         | 4,833                         | 83         | \$661,829,371          | 709                          | 12         | \$597,995,157          | 197                      | 3          | \$165,010,983        | 5,739                   | 99         | \$1,424,835,511        |
| Town of Aurora                 | 579           | 440                           | 76         | \$49,943,433           | 85                           | 15         | \$21,104,046           | 33                       | 6          | \$16,091,183         | 558                     | 96         | \$87,138,662           |
| Town of Bath                   | 561           | 471                           | 84         | \$68,177,418           | 51                           | 9          | \$15,413,472           | 31                       | 6          | \$11,325,429         | 553                     | 99         | \$94,916,320           |
| Town of Belhaven               | 1,087         | 918                           | 84         | \$92,568,954           | 94                           | 9          | \$28,307,434           | 25                       | 2          | \$10,731,432         | 1,037                   | 95         | \$131,607,821          |
| Town of Chocowinity            | 398           | 330                           | 83         | \$60,149,054           | 36                           | 9          | \$24,470,223           | 28                       | 7          | \$14,914,776         | 394                     | 99         | \$99,534,053           |
| Town of Pantego                | 132           | 108                           | 82         | \$12,460,220           | 11                           | 8          | \$3,856,371            | 7                        | 5          | \$3,034,422          | 126                     | 95         | \$19,351,013           |
| Town of Washington Park        | 232           | 216                           | 93         | \$34,640,539           | 13                           | 6          | \$2,524,134            | 0                        | 0          | \$0                  | 229                     | 99         | \$37,164,674           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>25,212</b>                 | <b>86</b>  | <b>\$2,906,984,694</b> | <b>3,003</b>                 | <b>10</b>  | <b>\$1,213,124,575</b> | <b>674</b>               | <b>2</b>   | <b>\$449,239,649</b> | <b>28,889</b>           | <b>98</b>  | <b>\$4,569,348,922</b> |
| <b>Carteret</b>                |               |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Carteret County | 29,284        | 14,032                        | 48         | \$1,255,987,524        | 1,028                        | 4          | \$227,825,010          | 234                      | 1          | \$125,171,564        | 15,294                  | 52         | \$1,608,984,099        |
| Town of Atlantic Beach         | 4,141         | 3,240                         | 78         | \$433,015,222          | 153                          | 4          | \$43,254,054           | 9                        | 0          | \$2,926,723          | 3,402                   | 82         | \$479,195,999          |
| Town of Beaufort               | 4,605         | 2,909                         | 63         | \$335,156,814          | 283                          | 6          | \$168,315,116          | 79                       | 2          | \$57,427,492         | 3,271                   | 71         | \$560,899,422          |
| Town of Bogue                  | 642           | 324                           | 50         | \$31,341,438           | 31                           | 5          | \$5,825,152            | 8                        | 1          | \$3,962,504          | 363                     | 57         | \$41,129,094           |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$97,422,147           | 91                           | 5          | \$29,189,432           | 26                       | 1          | \$8,242,263          | 989                     | 56         | \$134,853,841          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$111,492,344          | 101                          | 5          | \$29,112,339           | 10                       | 1          | \$5,696,534          | 1,367                   | 71         | \$146,301,216          |
| Town of Emerald Isle           | 7,154         | 5,524                         | 77         | \$968,156,099          | 159                          | 2          | \$39,887,960           | 19                       | 0          | \$10,208,313         | 5,702                   | 80         | \$1,018,252,373        |
| Town of Indian Beach           | 1,138         | 864                           | 76         | \$94,920,072           | 24                           | 2          | \$7,230,776            | 7                        | 1          | \$1,690,805          | 895                     | 79         | \$103,841,653          |
| Town of Morehead City          | 10,811        | 6,745                         | 62         | \$800,313,721          | 841                          | 8          | \$334,644,877          | 214                      | 2          | \$213,704,374        | 7,800                   | 72         | \$1,348,662,973        |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$285,605,244          | 347                          | 6          | \$74,081,413           | 97                       | 2          | \$40,982,012         | 4,080                   | 75         | \$400,668,669          |
| Town of Peletier               | 943           | 469                           | 50         | \$34,393,138           | 52                           | 6          | \$20,514,906           | 8                        | 1          | \$3,878,653          | 529                     | 56         | \$58,786,697           |
| Town of Pine Knoll Shores      | 2,253         | 1,644                         | 73         | \$341,136,519          | 80                           | 4          | \$29,116,851           | 29                       | 1          | \$11,964,423         | 1,753                   | 78         | \$382,217,793          |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>41,515</b>                 | <b>59</b>  | <b>\$4,788,940,282</b> | <b>3,190</b>                 | <b>5</b>   | <b>\$1,008,997,886</b> | <b>740</b>               | <b>1</b>   | <b>\$485,855,660</b> | <b>45,445</b>           | <b>65</b>  | <b>\$6,283,793,829</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                         | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                        | Total Buildings at Risk |            |                         |
|-------------------------------|----------------|-------------------------------|------------|-------------------------|------------------------------|------------|------------------------|--------------------------|------------|------------------------|-------------------------|------------|-------------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages       | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages      | Num                     | % of Total | Estimated Damages       |
| <b>Craven</b>                 |                |                               |            |                         |                              |            |                        |                          |            |                        |                         |            |                         |
| Unincorporated Craven County  | 24,876         | 22,277                        | 90         | \$2,152,776,215         | 2,040                        | 8          | \$627,866,419          | 305                      | 1          | \$273,451,965          | 24,622                  | 99         | \$3,054,094,599         |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$431,790,960           | 367                          | 7          | \$240,375,352          | 148                      | 3          | \$479,714,495          | 5,359                   | 99         | \$1,151,880,808         |
| City of New Bern              | 13,049         | 11,367                        | 87         | \$1,242,313,550         | 1,240                        | 10         | \$1,049,225,255        | 298                      | 2          | \$400,354,473          | 12,905                  | 99         | \$2,691,893,278         |
| Town of Bridgeton             | 326            | 235                           | 72         | \$18,036,982            | 70                           | 21         | \$17,793,879           | 10                       | 3          | \$2,481,684            | 315                     | 97         | \$38,312,545            |
| Town of Cove City             | 294            | 252                           | 86         | \$17,275,132            | 29                           | 10         | \$3,604,344            | 12                       | 4          | \$8,844,280            | 293                     | 100        | \$29,723,757            |
| Town of Dover                 | 299            | 276                           | 92         | \$20,962,785            | 6                            | 2          | \$1,086,071            | 17                       | 6          | \$5,586,480            | 299                     | 100        | \$27,635,336            |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$167,417,830           | 25                           | 2          | \$51,473,290           | 3                        | 0          | \$2,404,204            | 1,544                   | 99         | \$221,295,324           |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$302,912,574           | 20                           | 1          | \$14,351,303           | 21                       | 1          | \$20,121,378           | 1,909                   | 100        | \$337,385,255           |
| Town of Vanceboro             | 522            | 411                           | 79         | \$35,481,453            | 76                           | 15         | \$20,129,617           | 33                       | 6          | \$18,869,183           | 520                     | 100        | \$74,480,253            |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>43,046</b>                 | <b>89</b>  | <b>\$4,388,967,481</b>  | <b>3,873</b>                 | <b>8</b>   | <b>\$2,025,905,530</b> | <b>847</b>               | <b>2</b>   | <b>\$1,211,828,142</b> | <b>47,766</b>           | <b>99</b>  | <b>\$7,626,701,155</b>  |
| <b>Pamlico</b>                |                |                               |            |                         |                              |            |                        |                          |            |                        |                         |            |                         |
| Unincorporated Pamlico County | 6,428          | 5,803                         | 90         | \$448,473,131           | 503                          | 8          | \$67,852,149           | 70                       | 1          | \$18,856,599           | 6,376                   | 99         | \$535,181,879           |
| Town of Alliance              | 577            | 484                           | 84         | \$32,854,047            | 78                           | 14         | \$15,390,685           | 14                       | 2          | \$2,725,849            | 576                     | 100        | \$50,970,580            |
| Town of Arapahoe              | 430            | 386                           | 90         | \$26,005,045            | 26                           | 6          | \$4,087,223            | 16                       | 4          | \$7,263,039            | 428                     | 100        | \$37,355,307            |
| Town of Bayboro               | 515            | 408                           | 79         | \$27,593,351            | 74                           | 14         | \$14,669,440           | 31                       | 6          | \$29,857,892           | 513                     | 100        | \$72,120,683            |
| Town of Grantsboro            | 584            | 527                           | 90         | \$29,742,210            | 36                           | 6          | \$13,244,961           | 17                       | 3          | \$9,689,875            | 580                     | 99         | \$52,677,045            |
| Town of Mesic                 | 186            | 170                           | 91         | \$12,393,412            | 10                           | 5          | \$597,926              | 5                        | 3          | \$789,714              | 185                     | 99         | \$13,781,051            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$44,894,966            | 14                           | 3          | \$14,865,598           | 2                        | 0          | \$602,698              | 401                     | 100        | \$60,363,262            |
| Town of Oriental              | 1,378          | 1,255                         | 91         | \$132,792,728           | 107                          | 8          | \$17,784,626           | 14                       | 1          | \$4,388,971            | 1,376                   | 100        | \$154,966,325           |
| Town of Stonewall             | 227            | 199                           | 88         | \$13,442,763            | 21                           | 9          | \$3,122,180            | 6                        | 3          | \$3,193,227            | 226                     | 100        | \$19,758,170            |
| Town of Vandemere             | 192            | 168                           | 88         | \$13,252,398            | 8                            | 4          | \$2,222,519            | 14                       | 7          | \$2,072,788            | 190                     | 99         | \$17,547,705            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,785</b>                  | <b>90</b>  | <b>\$781,444,051</b>    | <b>877</b>                   | <b>8</b>   | <b>\$153,837,307</b>   | <b>189</b>               | <b>2</b>   | <b>\$79,440,652</b>    | <b>10,851</b>           | <b>99</b>  | <b>\$1,014,722,007</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>119,558</b>                | <b>75</b>  | <b>\$12,866,336,508</b> | <b>10,943</b>                | <b>7</b>   | <b>\$4,401,865,298</b> | <b>2,450</b>             | <b>2</b>   | <b>\$2,226,364,103</b> | <b>132,951</b>          | <b>84</b>  | <b>\$19,494,565,913</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.88 - Estimated Buildings Impacted by EF3 Tornado**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|--------------------------------|---------------|-------------------------------|------------|------------------------|------------------------------|------------|------------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Beaufort</b>                |               |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Beaufort County | 20,577        | 17,896                        | 87         | \$2,287,375,440        | 2,004                        | 10         | \$621,469,157          | 353                      | 2          | \$339,972,627        | 20,253                  | 98         | \$3,248,817,224        |
| City of Washington             | 5,790         | 4,833                         | 83         | \$839,343,230          | 709                          | 12         | \$742,389,206          | 197                      | 3          | \$248,063,814        | 5,739                   | 99         | \$1,829,796,250        |
| Town of Aurora                 | 579           | 440                           | 76         | \$70,682,904           | 85                           | 15         | \$25,904,598           | 33                       | 6          | \$25,186,905         | 558                     | 96         | \$121,774,407          |
| Town of Bath                   | 561           | 471                           | 84         | \$82,065,681           | 51                           | 9          | \$20,161,108           | 31                       | 6          | \$17,616,429         | 553                     | 99         | \$119,843,218          |
| Town of Belhaven               | 1,087         | 918                           | 84         | \$113,203,835          | 94                           | 9          | \$39,551,507           | 25                       | 2          | \$16,920,584         | 1,037                   | 95         | \$169,675,926          |
| Town of Chocowinity            | 398           | 330                           | 83         | \$78,053,101           | 36                           | 9          | \$33,159,861           | 28                       | 7          | \$23,245,521         | 394                     | 99         | \$134,458,483          |
| Town of Pantego                | 132           | 108                           | 82         | \$15,415,140           | 11                           | 8          | \$4,476,937            | 7                        | 5          | \$4,741,982          | 126                     | 95         | \$24,634,058           |
| Town of Washington Park        | 232           | 216                           | 93         | \$40,681,435           | 13                           | 6          | \$3,299,154            | 0                        | 0          | \$0                  | 229                     | 99         | \$43,980,589           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>25,212</b>                 | <b>86</b>  | <b>\$3,526,820,766</b> | <b>3,003</b>                 | <b>10</b>  | <b>\$1,490,411,528</b> | <b>674</b>               | <b>2</b>   | <b>\$675,747,862</b> | <b>28,889</b>           | <b>98</b>  | <b>\$5,692,980,155</b> |
| <b>Carteret</b>                |               |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Carteret County | 29,284        | 14,032                        | 48         | \$1,461,205,510        | 1,028                        | 4          | \$291,947,695          | 234                      | 1          | \$194,739,802        | 15,294                  | 52         | \$1,947,893,006        |
| Town of Atlantic Beach         | 4,141         | 3,240                         | 78         | \$570,879,237          | 153                          | 4          | \$61,318,697           | 9                        | 0          | \$4,655,279          | 3,402                   | 82         | \$636,853,214          |
| Town of Beaufort               | 4,605         | 2,909                         | 63         | \$449,319,787          | 283                          | 6          | \$215,797,237          | 79                       | 2          | \$89,624,986         | 3,271                   | 71         | \$754,742,010          |
| Town of Bogue                  | 642           | 324                           | 50         | \$37,864,874           | 31                           | 5          | \$7,123,771            | 8                        | 1          | \$6,295,153          | 363                     | 57         | \$51,283,799           |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$116,523,776          | 91                           | 5          | \$35,808,805           | 26                       | 1          | \$12,823,187         | 989                     | 56         | \$165,155,768          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$135,425,775          | 101                          | 5          | \$37,254,962           | 10                       | 1          | \$9,060,970          | 1,367                   | 71         | \$181,741,708          |
| Town of Emerald Isle           | 7,154         | 5,524                         | 77         | \$1,229,081,175        | 159                          | 2          | \$51,877,508           | 19                       | 0          | \$16,237,457         | 5,702                   | 80         | \$1,297,196,140        |
| Town of Indian Beach           | 1,138         | 864                           | 76         | \$132,979,860          | 24                           | 2          | \$9,721,850            | 7                        | 1          | \$2,689,413          | 895                     | 79         | \$145,391,123          |
| Town of Morehead City          | 10,811        | 6,745                         | 62         | \$1,056,563,106        | 841                          | 8          | \$435,634,243          | 214                      | 2          | \$335,383,391        | 7,800                   | 72         | \$1,827,580,740        |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$343,824,190          | 347                          | 6          | \$95,444,733           | 97                       | 2          | \$63,948,006         | 4,080                   | 75         | \$503,216,929          |
| Town of Peletier               | 943           | 469                           | 50         | \$46,005,507           | 52                           | 6          | \$24,048,718           | 8                        | 1          | \$6,169,429          | 529                     | 56         | \$76,223,654           |
| Town of Pine Knoll Shores      | 2,253         | 1,644                         | 73         | \$507,481,993          | 80                           | 4          | \$37,839,305           | 29                       | 1          | \$19,030,745         | 1,753                   | 78         | \$564,352,044          |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>41,515</b>                 | <b>59</b>  | <b>\$6,087,154,790</b> | <b>3,190</b>                 | <b>5</b>   | <b>\$1,303,817,524</b> | <b>740</b>               | <b>1</b>   | <b>\$760,657,818</b> | <b>45,445</b>           | <b>65</b>  | <b>\$8,151,630,135</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                         | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                        | Total Buildings at Risk |            |                         |
|-------------------------------|----------------|-------------------------------|------------|-------------------------|------------------------------|------------|------------------------|--------------------------|------------|------------------------|-------------------------|------------|-------------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages       | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages      | Num                     | % of Total | Estimated Damages       |
| <b>Craven</b>                 |                |                               |            |                         |                              |            |                        |                          |            |                        |                         |            |                         |
| Unincorporated Craven County  | 24,876         | 22,277                        | 90         | \$2,509,035,402         | 2,040                        | 8          | \$782,590,430          | 305                      | 1          | \$427,959,545          | 24,622                  | 99         | \$3,719,585,377         |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$533,006,832           | 367                          | 7          | \$336,780,374          | 148                      | 3          | \$755,330,616          | 5,359                   | 99         | \$1,625,117,822         |
| City of New Bern              | 13,049         | 11,367                        | 87         | \$1,533,372,600         | 1,240                        | 10         | \$1,380,628,929        | 298                      | 2          | \$617,889,816          | 12,905                  | 99         | \$3,531,891,344         |
| Town of Bridgeton             | 326            | 235                           | 72         | \$21,796,371            | 70                           | 21         | \$22,811,568           | 10                       | 3          | \$3,930,939            | 315                     | 97         | \$48,538,877            |
| Town of Cove City             | 294            | 252                           | 86         | \$20,072,346            | 29                           | 10         | \$5,211,968            | 12                       | 4          | \$14,067,821           | 293                     | 100        | \$39,352,134            |
| Town of Dover                 | 299            | 276                           | 92         | \$24,251,975            | 6                            | 2          | \$1,604,501            | 17                       | 6          | \$8,885,965            | 299                     | 100        | \$34,742,441            |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$200,792,906           | 25                           | 2          | \$75,403,765           | 3                        | 0          | \$3,824,154            | 1,544                   | 99         | \$280,020,825           |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$354,073,929           | 20                           | 1          | \$19,927,096           | 21                       | 1          | \$31,485,754           | 1,909                   | 100        | \$405,486,780           |
| Town of Vanceboro             | 522            | 411                           | 79         | \$45,175,597            | 76                           | 15         | \$28,563,815           | 33                       | 6          | \$28,930,259           | 520                     | 100        | \$102,669,671           |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>43,046</b>                 | <b>89</b>  | <b>\$5,241,577,958</b>  | <b>3,873</b>                 | <b>8</b>   | <b>\$2,653,522,446</b> | <b>847</b>               | <b>2</b>   | <b>\$1,892,304,869</b> | <b>47,766</b>           | <b>99</b>  | <b>\$9,787,405,271</b>  |
| <b>Pamlico</b>                |                |                               |            |                         |                              |            |                        |                          |            |                        |                         |            |                         |
| Unincorporated Pamlico County | 6,428          | 5,803                         | 90         | \$521,433,426           | 503                          | 8          | \$79,910,928           | 70                       | 1          | \$29,993,516           | 6,376                   | 99         | \$631,337,870           |
| Town of Alliance              | 577            | 484                           | 84         | \$39,286,076            | 78                           | 14         | \$21,635,128           | 14                       | 2          | \$4,318,115            | 576                     | 100        | \$65,239,319            |
| Town of Arapahoe              | 430            | 386                           | 90         | \$30,563,858            | 26                           | 6          | \$5,206,715            | 16                       | 4          | \$11,402,046           | 428                     | 100        | \$47,172,619            |
| Town of Bayboro               | 515            | 408                           | 79         | \$32,396,626            | 74                           | 14         | \$20,149,527           | 31                       | 6          | \$46,777,797           | 513                     | 100        | \$99,323,950            |
| Town of Grantsboro            | 584            | 527                           | 90         | \$34,336,323            | 36                           | 6          | \$18,025,872           | 17                       | 3          | \$15,367,563           | 580                     | 99         | \$67,729,759            |
| Town of Mesic                 | 186            | 170                           | 91         | \$14,668,173            | 10                           | 5          | \$712,297              | 5                        | 3          | \$1,256,127            | 185                     | 99         | \$16,636,598            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$55,484,405            | 14                           | 3          | \$19,651,072           | 2                        | 0          | \$958,658              | 401                     | 100        | \$76,094,135            |
| Town of Oriental              | 1,378          | 1,255                         | 91         | \$161,779,484           | 107                          | 8          | \$23,367,191           | 14                       | 1          | \$6,981,146            | 1,376                   | 100        | \$192,127,821           |
| Town of Stonewall             | 227            | 199                           | 88         | \$15,502,428            | 21                           | 9          | \$3,608,081            | 6                        | 3          | \$4,867,240            | 226                     | 100        | \$23,977,749            |
| Town of Vandemere             | 192            | 168                           | 88         | \$15,326,256            | 8                            | 4          | \$2,430,462            | 14                       | 7          | \$3,297,000            | 190                     | 99         | \$21,053,718            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,785</b>                  | <b>90</b>  | <b>\$920,777,055</b>    | <b>877</b>                   | <b>8</b>   | <b>\$194,697,273</b>   | <b>189</b>               | <b>2</b>   | <b>\$125,219,208</b>   | <b>10,851</b>           | <b>99</b>  | <b>\$1,240,693,538</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>119,558</b>                | <b>75</b>  | <b>\$15,776,330,569</b> | <b>10,943</b>                | <b>7</b>   | <b>\$5,642,448,771</b> | <b>2,450</b>             | <b>2</b>   | <b>\$3,453,929,757</b> | <b>132,951</b>          | <b>84</b>  | <b>\$24,872,709,099</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.89 - Estimated Buildings Impacted by EF4 Tornado**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|--------------------------------|---------------|-------------------------------|------------|------------------------|------------------------------|------------|------------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Beaufort</b>                |               |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Beaufort County | 20,577        | 17,896                        | 87         | \$2,306,529,950        | 2,004                        | 10         | \$638,733,475          | 353                      | 2          | \$357,298,688        | 20,253                  | 98         | \$3,302,562,113        |
| City of Washington             | 5,790         | 4,833                         | 83         | \$859,201,666          | 709                          | 12         | \$766,611,665          | 197                      | 3          | \$261,777,797        | 5,739                   | 99         | \$1,887,591,128        |
| Town of Aurora                 | 579           | 440                           | 76         | \$73,639,990           | 85                           | 15         | \$26,626,616           | 33                       | 6          | \$26,834,322         | 558                     | 96         | \$127,100,928          |
| Town of Bath                   | 561           | 471                           | 84         | \$82,948,373           | 51                           | 9          | \$21,552,227           | 31                       | 6          | \$18,973,973         | 553                     | 99         | \$123,474,573          |
| Town of Belhaven               | 1,087         | 918                           | 84         | \$114,997,945          | 94                           | 9          | \$41,316,107           | 25                       | 2          | \$17,799,310         | 1,037                   | 95         | \$174,113,362          |
| Town of Chocowinity            | 398           | 330                           | 83         | \$80,593,053           | 36                           | 9          | \$34,351,729           | 28                       | 7          | \$24,568,923         | 394                     | 99         | \$139,513,705          |
| Town of Pantego                | 132           | 108                           | 82         | \$15,672,540           | 11                           | 8          | \$4,549,101            | 7                        | 5          | \$5,066,373          | 126                     | 95         | \$25,288,014           |
| Town of Washington Park        | 232           | 216                           | 93         | \$40,727,088           | 13                           | 6          | \$3,463,056            | 0                        | 0          | \$0                  | 229                     | 99         | \$44,190,144           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>25,212</b>                 | <b>86</b>  | <b>\$3,574,310,605</b> | <b>3,003</b>                 | <b>10</b>  | <b>\$1,537,203,976</b> | <b>674</b>               | <b>2</b>   | <b>\$712,319,386</b> | <b>28,889</b>           | <b>98</b>  | <b>\$5,823,833,967</b> |
| <b>Carteret</b>                |               |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Carteret County | 29,284        | 14,032                        | 48         | \$1,468,681,645        | 1,028                        | 4          | \$301,880,109          | 234                      | 1          | \$209,674,947        | 15,294                  | 52         | \$1,980,236,701        |
| Town of Atlantic Beach         | 4,141         | 3,240                         | 78         | \$588,355,297          | 153                          | 4          | \$65,315,723           | 9                        | 0          | \$4,822,336          | 3,402                   | 82         | \$658,493,357          |
| Town of Beaufort               | 4,605         | 2,909                         | 63         | \$463,265,283          | 283                          | 6          | \$223,134,866          | 79                       | 2          | \$95,976,255         | 3,271                   | 71         | \$782,376,403          |
| Town of Bogue                  | 642           | 324                           | 50         | \$38,296,466           | 31                           | 5          | \$7,347,585            | 8                        | 1          | \$6,535,004          | 363                     | 57         | \$52,179,055           |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$117,681,699          | 91                           | 5          | \$36,947,631           | 26                       | 1          | \$13,806,607         | 989                     | 56         | \$168,435,937          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$137,872,967          | 101                          | 5          | \$38,829,426           | 10                       | 1          | \$9,386,128          | 1,367                   | 71         | \$186,088,521          |
| Town of Emerald Isle           | 7,154         | 5,524                         | 77         | \$1,255,905,840        | 159                          | 2          | \$53,953,366           | 19                       | 0          | \$16,820,148         | 5,702                   | 80         | \$1,326,679,353        |
| Town of Indian Beach           | 1,138         | 864                           | 76         | \$139,055,356          | 24                           | 2          | \$10,110,446           | 7                        | 1          | \$2,785,924          | 895                     | 79         | \$151,951,727          |
| Town of Morehead City          | 10,811        | 6,745                         | 62         | \$1,087,833,631        | 841                          | 8          | \$452,548,916          | 214                      | 2          | \$354,475,720        | 7,800                   | 72         | \$1,894,858,268        |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$348,034,643          | 347                          | 6          | \$98,947,818           | 97                       | 2          | \$68,565,624         | 4,080                   | 75         | \$515,548,086          |
| Town of Peletier               | 943           | 469                           | 50         | \$47,555,656           | 52                           | 6          | \$24,601,569           | 8                        | 1          | \$6,390,822          | 529                     | 56         | \$78,548,048           |
| Town of Pine Knoll Shores      | 2,253         | 1,644                         | 73         | \$533,917,223          | 80                           | 4          | \$38,601,693           | 29                       | 1          | \$19,713,674         | 1,753                   | 78         | \$592,232,591          |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>41,515</b>                 | <b>59</b>  | <b>\$6,226,455,706</b> | <b>3,190</b>                 | <b>5</b>   | <b>\$1,352,219,148</b> | <b>740</b>               | <b>1</b>   | <b>\$808,953,189</b> | <b>45,445</b>           | <b>65</b>  | <b>\$8,387,628,047</b> |



**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                         | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                        | Total Buildings at Risk |            |                         |
|-------------------------------|----------------|-------------------------------|------------|-------------------------|------------------------------|------------|------------------------|--------------------------|------------|------------------------|-------------------------|------------|-------------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages       | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages      | Num                     | % of Total | Estimated Damages       |
| <b>Craven</b>                 |                |                               |            |                         |                              |            |                        |                          |            |                        |                         |            |                         |
| Unincorporated Craven County  | 24,876         | 22,277                        | 90         | \$2,515,590,487         | 2,040                        | 8          | \$817,340,089          | 305                      | 1          | \$455,143,805          | 24,622                  | 99         | \$3,788,074,382         |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$540,245,427           | 367                          | 7          | \$360,262,508          | 148                      | 3          | \$796,318,145          | 5,359                   | 99         | \$1,696,826,080         |
| City of New Bern              | 13,049         | 11,367                        | 87         | \$1,553,838,564         | 1,240                        | 10         | \$1,451,628,611        | 298                      | 2          | \$656,324,162          | 12,905                  | 99         | \$3,661,791,337         |
| Town of Bridgeton             | 326            | 235                           | 72         | \$21,989,792            | 70                           | 21         | \$24,048,251           | 10                       | 3          | \$4,102,000            | 315                     | 97         | \$50,140,043            |
| Town of Cove City             | 294            | 252                           | 86         | \$20,139,418            | 29                           | 10         | \$5,685,777            | 12                       | 4          | \$14,572,646           | 293                     | 100        | \$40,397,840            |
| Town of Dover                 | 299            | 276                           | 92         | \$24,314,583            | 6                            | 2          | \$1,747,604            | 17                       | 6          | \$9,204,807            | 299                     | 100        | \$35,266,994            |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$202,043,799           | 25                           | 2          | \$79,159,197           | 3                        | 0          | \$3,961,386            | 1,544                   | 99         | \$285,164,381           |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$354,143,023           | 20                           | 1          | \$20,802,720           | 21                       | 1          | \$33,562,694           | 1,909                   | 100        | \$408,508,437           |
| Town of Vanceboro             | 522            | 411                           | 79         | \$46,195,927            | 76                           | 15         | \$30,926,317           | 33                       | 6          | \$31,943,132           | 520                     | 100        | \$109,065,377           |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>43,046</b>                 | <b>89</b>  | <b>\$5,278,501,020</b>  | <b>3,873</b>                 | <b>8</b>   | <b>\$2,791,601,074</b> | <b>847</b>               | <b>2</b>   | <b>\$2,005,132,777</b> | <b>47,766</b>           | <b>99</b>  | <b>\$10,075,234,871</b> |
| <b>Pamlico</b>                |                |                               |            |                         |                              |            |                        |                          |            |                        |                         |            |                         |
| Unincorporated Pamlico County | 6,428          | 5,803                         | 90         | \$522,581,793           | 503                          | 8          | \$81,528,168           | 70                       | 1          | \$31,069,851           | 6,376                   | 99         | \$635,179,811           |
| Town of Alliance              | 577            | 484                           | 84         | \$39,653,965            | 78                           | 14         | \$23,067,724           | 14                       | 2          | \$4,505,248            | 576                     | 100        | \$67,226,937            |
| Town of Arapahoe              | 430            | 386                           | 90         | \$30,720,175            | 26                           | 6          | \$5,474,051            | 16                       | 4          | \$12,085,786           | 428                     | 100        | \$48,280,012            |
| Town of Bayboro               | 515            | 408                           | 79         | \$32,551,569            | 74                           | 14         | \$21,042,783           | 31                       | 6          | \$49,758,889           | 513                     | 100        | \$103,353,240           |
| Town of Grantsboro            | 584            | 527                           | 90         | \$34,445,554            | 36                           | 6          | \$18,919,601           | 17                       | 3          | \$16,001,540           | 580                     | 99         | \$69,366,695            |
| Town of Mesic                 | 186            | 170                           | 91         | \$14,749,640            | 10                           | 5          | \$737,651              | 5                        | 3          | \$1,301,204            | 185                     | 99         | \$16,788,495            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$56,292,160            | 14                           | 3          | \$20,039,078           | 2                        | 0          | \$993,060              | 401                     | 100        | \$77,324,298            |
| Town of Oriental              | 1,378          | 1,255                         | 91         | \$163,439,592           | 107                          | 8          | \$24,434,699           | 14                       | 1          | \$7,231,668            | 1,376                   | 100        | \$195,105,959           |
| Town of Stonewall             | 227            | 199                           | 88         | \$15,518,966            | 21                           | 9          | \$3,695,709            | 6                        | 3          | \$5,428,248            | 226                     | 100        | \$24,642,922            |
| Town of Vandemere             | 192            | 168                           | 88         | \$15,333,295            | 8                            | 4          | \$2,446,116            | 14                       | 7          | \$3,415,315            | 190                     | 99         | \$21,194,727            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,785</b>                  | <b>90</b>  | <b>\$925,286,709</b>    | <b>877</b>                   | <b>8</b>   | <b>\$201,385,580</b>   | <b>189</b>               | <b>2</b>   | <b>\$131,790,809</b>   | <b>10,851</b>           | <b>99</b>  | <b>\$1,258,463,096</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>119,558</b>                | <b>75</b>  | <b>\$16,004,554,040</b> | <b>10,943</b>                | <b>7</b>   | <b>\$5,882,409,778</b> | <b>2,450</b>             | <b>2</b>   | <b>\$3,658,196,161</b> | <b>132,951</b>          | <b>84</b>  | <b>\$25,545,159,981</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.90 – Estimated Buildings Impacted by 25-Year Thunderstorm Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                     | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                    | Total Buildings at Risk |            |                     |
|--------------------------------|---------------|-------------------------------|------------|---------------------|------------------------------|------------|---------------------|--------------------------|------------|--------------------|-------------------------|------------|---------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages   | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages  | Num                     | % of Total | Estimated Damages   |
| <b>Beaufort</b>                |               |                               |            |                     |                              |            |                     |                          |            |                    |                         |            |                     |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85         | \$8,822,968         | 2,003                        | 10         | \$1,552,828         | 353                      | 2          | \$975,417          | 19,912                  | 97         | \$11,351,214        |
| City of Washington             | 5,790         | 4,828                         | 83         | \$3,027,323         | 709                          | 12         | \$16,057,757        | 197                      | 3          | \$766,881          | 5,734                   | 99         | \$19,851,961        |
| Town of Aurora                 | 579           | 440                           | 76         | \$257,266           | 85                           | 15         | \$29,464            | 33                       | 6          | \$54,497           | 558                     | 96         | \$341,227           |
| Town of Bath                   | 561           | 471                           | 84         | \$351,825           | 51                           | 9          | \$21,006            | 31                       | 6          | \$38,291           | 553                     | 99         | \$411,123           |
| Town of Belhaven               | 1,087         | 857                           | 79         | \$372,602           | 93                           | 9          | \$45,097            | 24                       | 2          | \$27,898           | 974                     | 90         | \$445,597           |
| Town of Chocowinity            | 398           | 330                           | 83         | \$197,900           | 36                           | 9          | \$55,524            | 28                       | 7          | \$35,279           | 394                     | 99         | \$288,703           |
| Town of Pantego                | 132           | 108                           | 82         | \$66,562            | 11                           | 8          | \$2,598             | 7                        | 5          | \$9,799            | 126                     | 95         | \$78,960            |
| Town of Washington Park        | 232           | 171                           | 74         | \$95,536            | 13                           | 6          | \$46,429            | 0                        | 0          | \$0                | 184                     | 79         | \$141,965           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84</b>  | <b>\$13,191,982</b> | <b>3,001</b>                 | <b>10</b>  | <b>\$17,810,703</b> | <b>673</b>               | <b>2</b>   | <b>\$1,908,062</b> | <b>28,435</b>           | <b>97</b>  | <b>\$32,910,750</b> |
| <b>Carteret</b>                |               |                               |            |                     |                              |            |                     |                          |            |                    |                         |            |                     |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46         | \$5,059,245         | 1,000                        | 3          | \$366,366           | 229                      | 1          | \$783,503          | 14,792                  | 51         | \$6,209,114         |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78         | \$1,481,308         | 153                          | 4          | \$388,558           | 9                        | 0          | \$2,108            | 3,382                   | 82         | \$1,871,974         |
| Town of Beaufort               | 4,605         | 2,878                         | 62         | \$1,525,099         | 280                          | 6          | \$317,863           | 78                       | 2          | \$160,823          | 3,236                   | 70         | \$2,003,784         |
| Town of Bogue                  | 642           | 324                           | 50         | \$99,064            | 31                           | 5          | \$4,205             | 8                        | 1          | \$3,861            | 363                     | 57         | \$107,131           |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$256,126           | 91                           | 5          | \$18,607            | 26                       | 1          | \$5,691            | 989                     | 56         | \$280,424           |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$318,399           | 101                          | 5          | \$46,923            | 10                       | 1          | \$8,115            | 1,367                   | 71         | \$373,437           |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72         | \$3,288,236         | 156                          | 2          | \$27,158            | 19                       | 0          | \$48,108           | 5,307                   | 74         | \$3,363,502         |
| Town of Indian Beach           | 1,138         | 790                           | 69         | \$504,492           | 24                           | 2          | \$6,183             | 6                        | 1          | \$1,738            | 820                     | 72         | \$512,413           |
| Town of Morehead City          | 10,811        | 6,703                         | 62         | \$2,847,416         | 832                          | 8          | \$183,931           | 214                      | 2          | \$278,072          | 7,749                   | 72         | \$3,309,420         |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$905,514           | 347                          | 6          | \$107,219           | 97                       | 2          | \$46,437           | 4,080                   | 75         | \$1,059,170         |
| Town of Peletier               | 943           | 469                           | 50         | \$113,802           | 52                           | 6          | \$108,352           | 8                        | 1          | \$9,957            | 529                     | 56         | \$232,111           |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62         | \$1,644,746         | 79                           | 4          | \$30,220            | 29                       | 1          | \$25,410           | 1,499                   | 67         | \$1,700,377         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57</b>  | <b>\$18,043,447</b> | <b>3,146</b>                 | <b>4</b>   | <b>\$1,605,585</b>  | <b>733</b>               | <b>1</b>   | <b>\$1,373,823</b> | <b>44,113</b>           | <b>63</b>  | <b>\$21,022,857</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                     | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                     |
|-------------------------------|----------------|-------------------------------|------------|---------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|---------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages   | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages   |
| <b>Craven</b>                 |                |                               |            |                     |                              |            |                     |                          |            |                     |                         |            |                     |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89         | \$6,826,582         | 2,034                        | 8          | \$2,042,811         | 305                      | 1          | \$662,011           | 24,458                  | 98         | \$9,531,404         |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$1,018,316         | 367                          | 7          | \$567,803           | 148                      | 3          | \$3,982,661         | 5,359                   | 99         | \$5,568,779         |
| City of New Bern              | 13,049         | 11,331                        | 87         | \$3,044,301         | 1,239                        | 9          | \$4,599,101         | 298                      | 2          | \$2,034,163         | 12,868                  | 99         | \$9,677,565         |
| Town of Bridgeton             | 326            | 232                           | 71         | \$43,004            | 70                           | 21         | \$10,729            | 10                       | 3          | \$1,524             | 312                     | 96         | \$55,256            |
| Town of Cove City             | 294            | 252                           | 86         | \$93,912            | 29                           | 10         | \$3,620             | 12                       | 4          | \$31,951            | 293                     | 100        | \$129,483           |
| Town of Dover                 | 299            | 276                           | 92         | \$69,465            | 6                            | 2          | \$716               | 17                       | 6          | \$8,096             | 299                     | 100        | \$78,278            |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$502,093           | 25                           | 2          | \$85,523            | 3                        | 0          | \$2,238             | 1,544                   | 99         | \$589,854           |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$731,758           | 20                           | 1          | \$15,133            | 21                       | 1          | \$20,074            | 1,909                   | 100        | \$766,965           |
| Town of Vanceboro             | 522            | 411                           | 79         | \$139,469           | 76                           | 15         | \$95,768            | 33                       | 6          | \$66,184            | 520                     | 100        | \$301,421           |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89</b>  | <b>\$12,468,900</b> | <b>3,866</b>                 | <b>8</b>   | <b>\$7,421,204</b>  | <b>847</b>               | <b>2</b>   | <b>\$6,808,902</b>  | <b>47,562</b>           | <b>99</b>  | <b>\$26,699,005</b> |
| <b>Pamlico</b>                |                |                               |            |                     |                              |            |                     |                          |            |                     |                         |            |                     |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88         | \$1,940,873         | 483                          | 8          | \$80,233            | 70                       | 1          | \$13,975            | 6,233                   | 97         | \$2,035,081         |
| Town of Alliance              | 577            | 484                           | 84         | \$180,908           | 78                           | 14         | \$12,121            | 14                       | 2          | \$2,574             | 576                     | 100        | \$195,602           |
| Town of Arapahoe              | 430            | 386                           | 90         | \$72,517            | 26                           | 6          | \$6,201             | 16                       | 4          | \$12,662            | 428                     | 100        | \$91,380            |
| Town of Bayboro               | 515            | 408                           | 79         | \$169,265           | 74                           | 14         | \$20,116            | 31                       | 6          | \$25,135            | 513                     | 100        | \$214,516           |
| Town of Grantsboro            | 584            | 527                           | 90         | \$137,982           | 36                           | 6          | \$17,898            | 17                       | 3          | \$16,369            | 580                     | 99         | \$172,250           |
| Town of Mesic                 | 186            | 170                           | 91         | \$48,422            | 10                           | 5          | \$487               | 5                        | 3          | \$473               | 185                     | 99         | \$49,382            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$250,462           | 14                           | 3          | \$29,674            | 2                        | 0          | \$623               | 401                     | 100        | \$280,759           |
| Town of Oriental              | 1,378          | 1,205                         | 87         | \$690,722           | 100                          | 7          | \$14,257            | 13                       | 1          | \$3,205             | 1,318                   | 96         | \$708,183           |
| Town of Stonewall             | 227            | 199                           | 88         | \$86,906            | 21                           | 9          | \$3,734             | 6                        | 3          | \$4,252             | 226                     | 100        | \$94,891            |
| Town of Vandemere             | 192            | 133                           | 69         | \$43,719            | 1                            | 1          | \$25                | 6                        | 3          | \$1,030             | 140                     | 73         | \$44,774            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88</b>  | <b>\$3,621,776</b>  | <b>843</b>                   | <b>8</b>   | <b>\$184,746</b>    | <b>180</b>               | <b>2</b>   | <b>\$80,298</b>     | <b>10,600</b>           | <b>97</b>  | <b>\$3,886,818</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74</b>  | <b>\$47,326,105</b> | <b>10,856</b>                | <b>7</b>   | <b>\$27,022,238</b> | <b>2,433</b>             | <b>2</b>   | <b>\$10,171,085</b> | <b>130,710</b>          | <b>82</b>  | <b>\$84,519,430</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.91 – Estimated Buildings Impacted by 50-Year Thunderstorm Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                     | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                    | Total Buildings at Risk |            |                     |
|--------------------------------|---------------|-------------------------------|------------|---------------------|------------------------------|------------|---------------------|--------------------------|------------|--------------------|-------------------------|------------|---------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages   | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages  | Num                     | % of Total | Estimated Damages   |
| <b>Beaufort</b>                |               |                               |            |                     |                              |            |                     |                          |            |                    |                         |            |                     |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85         | \$14,003,851        | 2,003                        | 10         | \$2,725,464         | 353                      | 2          | \$1,713,789        | 19,912                  | 97         | \$18,443,103        |
| City of Washington             | 5,790         | 4,828                         | 83         | \$4,927,522         | 709                          | 12         | \$22,615,112        | 197                      | 3          | \$1,339,553        | 5,734                   | 99         | \$28,882,188        |
| Town of Aurora                 | 579           | 440                           | 76         | \$435,012           | 85                           | 15         | \$57,065            | 33                       | 6          | \$107,515          | 558                     | 96         | \$599,591           |
| Town of Bath                   | 561           | 471                           | 84         | \$552,101           | 51                           | 9          | \$41,159            | 31                       | 6          | \$71,885           | 553                     | 99         | \$665,144           |
| Town of Belhaven               | 1,087         | 857                           | 79         | \$595,820           | 93                           | 9          | \$91,909            | 24                       | 2          | \$49,750           | 974                     | 90         | \$737,480           |
| Town of Chocowinity            | 398           | 330                           | 83         | \$326,632           | 36                           | 9          | \$100,895           | 28                       | 7          | \$72,274           | 394                     | 99         | \$499,802           |
| Town of Pantego                | 132           | 108                           | 82         | \$103,261           | 11                           | 8          | \$5,172             | 7                        | 5          | \$19,261           | 126                     | 95         | \$127,694           |
| Town of Washington Park        | 232           | 171                           | 74         | \$146,954           | 13                           | 6          | \$75,424            | 0                        | 0          | \$0                | 184                     | 79         | \$222,378           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84</b>  | <b>\$21,091,153</b> | <b>3,001</b>                 | <b>10</b>  | <b>\$25,712,200</b> | <b>673</b>               | <b>2</b>   | <b>\$3,374,027</b> | <b>28,435</b>           | <b>97</b>  | <b>\$50,177,380</b> |
| <b>Carteret</b>                |               |                               |            |                     |                              |            |                     |                          |            |                    |                         |            |                     |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46         | \$8,051,606         | 1,000                        | 3          | \$661,540           | 229                      | 1          | \$1,369,678        | 14,792                  | 51         | \$10,082,823        |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78         | \$3,288,944         | 153                          | 4          | \$727,046           | 9                        | 0          | \$5,178            | 3,382                   | 82         | \$4,021,167         |
| Town of Beaufort               | 4,605         | 2,878                         | 62         | \$2,451,267         | 280                          | 6          | \$560,001           | 78                       | 2          | \$311,348          | 3,236                   | 70         | \$3,322,617         |
| Town of Bogue                  | 642           | 324                           | 50         | \$170,328           | 31                           | 5          | \$8,261             | 8                        | 1          | \$6,887            | 363                     | 57         | \$185,475           |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$418,482           | 91                           | 5          | \$34,150            | 26                       | 1          | \$11,262           | 989                     | 56         | \$463,894           |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$514,004           | 101                          | 5          | \$95,599            | 10                       | 1          | \$16,411           | 1,367                   | 71         | \$626,015           |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72         | \$5,474,689         | 156                          | 2          | \$55,019            | 19                       | 0          | \$86,572           | 5,307                   | 74         | \$5,616,281         |
| Town of Indian Beach           | 1,138         | 790                           | 69         | \$816,141           | 24                           | 2          | \$14,145            | 6                        | 1          | \$3,838            | 820                     | 72         | \$834,124           |
| Town of Morehead City          | 10,811        | 6,703                         | 62         | \$5,807,669         | 832                          | 8          | \$520,830           | 214                      | 2          | \$840,960          | 7,749                   | 72         | \$7,169,459         |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$1,413,704         | 347                          | 6          | \$195,167           | 97                       | 2          | \$92,504           | 4,080                   | 75         | \$1,701,375         |
| Town of Peletier               | 943           | 469                           | 50         | \$179,935           | 52                           | 6          | \$197,655           | 8                        | 1          | \$20,668           | 529                     | 56         | \$398,258           |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62         | \$2,843,190         | 79                           | 4          | \$62,323            | 29                       | 1          | \$55,216           | 1,499                   | 67         | \$2,960,729         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57</b>  | <b>\$31,429,959</b> | <b>3,146</b>                 | <b>4</b>   | <b>\$3,131,736</b>  | <b>733</b>               | <b>1</b>   | <b>\$2,820,522</b> | <b>44,113</b>           | <b>63</b>  | <b>\$37,382,217</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                     | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|-------------------------------|----------------|-------------------------------|------------|---------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages   | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Craven</b>                 |                |                               |            |                     |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89         | \$10,970,488        | 2,034                        | 8          | \$3,650,682         | 305                      | 1          | \$1,190,423         | 24,458                  | 98         | \$15,811,592         |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$1,685,986         | 367                          | 7          | \$1,090,575         | 148                      | 3          | \$7,329,010         | 5,359                   | 99         | \$10,105,571         |
| City of New Bern              | 13,049         | 11,331                        | 87         | \$5,063,039         | 1,239                        | 9          | \$7,935,709         | 298                      | 2          | \$3,668,030         | 12,868                  | 99         | \$16,666,778         |
| Town of Bridgeton             | 326            | 232                           | 71         | \$74,204            | 70                           | 21         | \$21,377            | 10                       | 3          | \$2,682             | 312                     | 96         | \$98,262             |
| Town of Cove City             | 294            | 252                           | 86         | \$136,939           | 29                           | 10         | \$8,129             | 12                       | 4          | \$62,110            | 293                     | 100        | \$207,178            |
| Town of Dover                 | 299            | 276                           | 92         | \$111,736           | 6                            | 2          | \$1,715             | 17                       | 6          | \$18,069            | 299                     | 100        | \$131,520            |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$846,945           | 25                           | 2          | \$148,059           | 3                        | 0          | \$4,810             | 1,544                   | 99         | \$999,814            |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$1,212,744         | 20                           | 1          | \$27,740            | 21                       | 1          | \$36,351            | 1,909                   | 100        | \$1,276,835          |
| Town of Vanceboro             | 522            | 411                           | 79         | \$213,167           | 76                           | 15         | \$154,427           | 33                       | 6          | \$132,001           | 520                     | 100        | \$499,595            |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89</b>  | <b>\$20,315,248</b> | <b>3,866</b>                 | <b>8</b>   | <b>\$13,038,413</b> | <b>847</b>               | <b>2</b>   | <b>\$12,443,486</b> | <b>47,562</b>           | <b>99</b>  | <b>\$45,797,145</b>  |
| <b>Pamlico</b>                |                |                               |            |                     |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88         | \$3,032,070         | 483                          | 8          | \$152,918           | 70                       | 1          | \$29,217            | 6,233                   | 97         | \$3,214,205          |
| Town of Alliance              | 577            | 484                           | 84         | \$271,487           | 78                           | 14         | \$25,040            | 14                       | 2          | \$5,240             | 576                     | 100        | \$301,767            |
| Town of Arapahoe              | 430            | 386                           | 90         | \$113,947           | 26                           | 6          | \$11,457            | 16                       | 4          | \$20,426            | 428                     | 100        | \$145,830            |
| Town of Bayboro               | 515            | 408                           | 79         | \$253,036           | 74                           | 14         | \$41,339            | 31                       | 6          | \$52,349            | 513                     | 100        | \$346,724            |
| Town of Grantsboro            | 584            | 527                           | 90         | \$201,293           | 36                           | 6          | \$33,791            | 17                       | 3          | \$28,582            | 580                     | 99         | \$263,667            |
| Town of Mesic                 | 186            | 170                           | 91         | \$76,464            | 10                           | 5          | \$1,142             | 5                        | 3          | \$931               | 185                     | 99         | \$78,537             |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$391,000           | 14                           | 3          | \$49,200            | 2                        | 0          | \$1,457             | 401                     | 100        | \$441,658            |
| Town of Oriental              | 1,378          | 1,205                         | 87         | \$1,098,440         | 100                          | 7          | \$30,834            | 13                       | 1          | \$7,134             | 1,318                   | 96         | \$1,136,408          |
| Town of Stonewall             | 227            | 199                           | 88         | \$135,252           | 21                           | 9          | \$9,446             | 6                        | 3          | \$9,601             | 226                     | 100        | \$154,298            |
| Town of Vandemere             | 192            | 133                           | 69         | \$67,016            | 1                            | 1          | \$60                | 6                        | 3          | \$2,107             | 140                     | 73         | \$69,183             |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88</b>  | <b>\$5,640,005</b>  | <b>843</b>                   | <b>8</b>   | <b>\$355,227</b>    | <b>180</b>               | <b>2</b>   | <b>\$157,044</b>    | <b>10,600</b>           | <b>97</b>  | <b>\$6,152,277</b>   |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74</b>  | <b>\$78,476,365</b> | <b>10,856</b>                | <b>7</b>   | <b>\$42,237,576</b> | <b>2,433</b>             | <b>2</b>   | <b>\$18,795,079</b> | <b>130,710</b>          | <b>82</b>  | <b>\$139,509,019</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.92 – Estimated Buildings Impacted by 100-Year Thunderstorm Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                     | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                    | Total Buildings at Risk |            |                     |
|--------------------------------|---------------|-------------------------------|------------|---------------------|------------------------------|------------|---------------------|--------------------------|------------|--------------------|-------------------------|------------|---------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages   | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages  | Num                     | % of Total | Estimated Damages   |
| <b>Beaufort</b>                |               |                               |            |                     |                              |            |                     |                          |            |                    |                         |            |                     |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85         | \$22,779,851        | 2,003                        | 10         | \$4,566,138         | 353                      | 2          | \$2,950,710        | 19,912                  | 97         | \$30,296,700        |
| City of Washington             | 5,790         | 4,828                         | 83         | \$7,776,421         | 709                          | 12         | \$29,894,639        | 197                      | 3          | \$2,171,789        | 5,734                   | 99         | \$39,842,849        |
| Town of Aurora                 | 579           | 440                           | 76         | \$726,186           | 85                           | 15         | \$109,543           | 33                       | 6          | \$198,749          | 558                     | 96         | \$1,034,477         |
| Town of Bath                   | 561           | 471                           | 84         | \$890,513           | 51                           | 9          | \$81,290            | 31                       | 6          | \$131,153          | 553                     | 99         | \$1,102,956         |
| Town of Belhaven               | 1,087         | 857                           | 79         | \$1,560,724         | 93                           | 9          | \$386,269           | 24                       | 2          | \$147,776          | 974                     | 90         | \$2,094,769         |
| Town of Chocowinity            | 398           | 330                           | 83         | \$549,962           | 36                           | 9          | \$175,698           | 28                       | 7          | \$140,930          | 394                     | 99         | \$866,591           |
| Town of Pantego                | 132           | 108                           | 82         | \$259,783           | 11                           | 8          | \$20,194            | 7                        | 5          | \$57,509           | 126                     | 95         | \$337,487           |
| Town of Washington Park        | 232           | 171                           | 74         | \$227,777           | 13                           | 6          | \$111,647           | 0                        | 0          | \$0                | 184                     | 79         | \$339,424           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84</b>  | <b>\$34,771,217</b> | <b>3,001</b>                 | <b>10</b>  | <b>\$35,345,418</b> | <b>673</b>               | <b>2</b>   | <b>\$5,798,616</b> | <b>28,435</b>           | <b>97</b>  | <b>\$75,915,253</b> |
| <b>Carteret</b>                |               |                               |            |                     |                              |            |                     |                          |            |                    |                         |            |                     |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46         | \$12,562,194        | 1,000                        | 3          | \$1,186,933         | 229                      | 1          | \$2,210,569        | 14,792                  | 51         | \$15,959,696        |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78         | \$7,220,131         | 153                          | 4          | \$1,671,251         | 9                        | 0          | \$16,619           | 3,382                   | 82         | \$8,908,001         |
| Town of Beaufort               | 4,605         | 2,878                         | 62         | \$4,006,259         | 280                          | 6          | \$950,908           | 78                       | 2          | \$565,242          | 3,236                   | 70         | \$5,522,410         |
| Town of Bogue                  | 642           | 324                           | 50         | \$277,299           | 31                           | 5          | \$16,532            | 8                        | 1          | \$12,032           | 363                     | 57         | \$305,863           |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$655,815           | 91                           | 5          | \$63,607            | 26                       | 1          | \$22,127           | 989                     | 56         | \$741,549           |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$804,703           | 101                          | 5          | \$178,215           | 10                       | 1          | \$31,680           | 1,367                   | 71         | \$1,014,598         |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72         | \$8,945,842         | 156                          | 2          | \$111,125           | 19                       | 0          | \$144,618          | 5,307                   | 74         | \$9,201,585         |
| Town of Indian Beach           | 1,138         | 790                           | 69         | \$1,279,104         | 24                           | 2          | \$31,115            | 6                        | 1          | \$8,492            | 820                     | 72         | \$1,318,710         |
| Town of Morehead City          | 10,811        | 6,703                         | 62         | \$10,211,871        | 832                          | 8          | \$1,217,773         | 214                      | 2          | \$1,875,105        | 7,749                   | 72         | \$13,304,749        |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$2,105,796         | 347                          | 6          | \$334,438           | 97                       | 2          | \$171,914          | 4,080                   | 75         | \$2,612,149         |
| Town of Peletier               | 943           | 469                           | 50         | \$273,253           | 52                           | 6          | \$323,481           | 8                        | 1          | \$40,810           | 529                     | 56         | \$637,544           |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62         | \$4,776,650         | 79                           | 4          | \$135,391           | 29                       | 1          | \$113,728          | 1,499                   | 67         | \$5,025,769         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57</b>  | <b>\$53,118,917</b> | <b>3,146</b>                 | <b>4</b>   | <b>\$6,220,769</b>  | <b>733</b>               | <b>1</b>   | <b>\$5,212,936</b> | <b>44,113</b>           | <b>63</b>  | <b>\$64,552,623</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|-------------------------------|----------------|-------------------------------|------------|----------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Craven</b>                 |                |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89         | \$16,548,189         | 2,034                        | 8          | \$6,046,858         | 305                      | 1          | \$1,996,117         | 24,458                  | 98         | \$24,591,164         |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$2,622,722          | 367                          | 7          | \$1,947,422         | 148                      | 3          | \$17,387,634        | 5,359                   | 99         | \$21,957,779         |
| City of New Bern              | 13,049         | 11,331                        | 87         | \$7,890,296          | 1,239                        | 9          | \$12,696,409        | 298                      | 2          | \$6,032,507         | 12,868                  | 99         | \$26,619,212         |
| Town of Bridgeton             | 326            | 232                           | 71         | \$123,193            | 70                           | 21         | \$41,907            | 10                       | 3          | \$4,848             | 312                     | 96         | \$169,948            |
| Town of Cove City             | 294            | 252                           | 86         | \$191,442            | 29                           | 10         | \$17,114            | 12                       | 4          | \$109,805           | 293                     | 100        | \$318,361            |
| Town of Dover                 | 299            | 276                           | 92         | \$174,458            | 6                            | 2          | \$4,146             | 17                       | 6          | \$39,232            | 299                     | 100        | \$217,836            |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$1,297,608          | 25                           | 2          | \$240,150           | 3                        | 0          | \$9,613             | 1,544                   | 99         | \$1,547,370          |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$1,847,225          | 20                           | 1          | \$48,268            | 21                       | 1          | \$65,034            | 1,909                   | 100        | \$1,960,527          |
| Town of Vanceboro             | 522            | 411                           | 79         | \$311,698            | 76                           | 15         | \$241,033           | 33                       | 6          | \$255,417           | 520                     | 100        | \$808,148            |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89</b>  | <b>\$31,006,831</b>  | <b>3,866</b>                 | <b>8</b>   | <b>\$21,283,307</b> | <b>847</b>               | <b>2</b>   | <b>\$25,900,207</b> | <b>47,562</b>           | <b>99</b>  | <b>\$78,190,345</b>  |
| <b>Pamlico</b>                |                |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88         | \$4,662,145          | 483                          | 8          | \$289,985           | 70                       | 1          | \$64,571            | 6,233                   | 97         | \$5,016,701          |
| Town of Alliance              | 577            | 484                           | 84         | \$400,965            | 78                           | 14         | \$53,690            | 14                       | 2          | \$11,222            | 576                     | 100        | \$465,877            |
| Town of Arapahoe              | 430            | 386                           | 90         | \$172,908            | 26                           | 6          | \$20,531            | 16                       | 4          | \$34,437            | 428                     | 100        | \$227,875            |
| Town of Bayboro               | 515            | 408                           | 79         | \$370,535            | 74                           | 14         | \$83,949            | 31                       | 6          | \$117,566           | 513                     | 100        | \$572,050            |
| Town of Grantsboro            | 584            | 527                           | 90         | \$280,278            | 36                           | 6          | \$60,753            | 17                       | 3          | \$51,059            | 580                     | 99         | \$392,090            |
| Town of Mesic                 | 186            | 170                           | 91         | \$115,666            | 10                           | 5          | \$2,891             | 5                        | 3          | \$1,902             | 185                     | 99         | \$120,459            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$611,800            | 14                           | 3          | \$79,793            | 2                        | 0          | \$3,664             | 401                     | 100        | \$695,257            |
| Town of Oriental              | 1,378          | 1,205                         | 87         | \$1,779,367          | 100                          | 7          | \$65,858            | 13                       | 1          | \$15,974            | 1,318                   | 96         | \$1,861,199          |
| Town of Stonewall             | 227            | 199                           | 88         | \$217,731            | 21                           | 9          | \$23,780            | 6                        | 3          | \$19,981            | 226                     | 100        | \$261,492            |
| Town of Vandemere             | 192            | 133                           | 69         | \$101,878            | 1                            | 1          | \$127               | 6                        | 3          | \$4,349             | 140                     | 73         | \$106,355            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88</b>  | <b>\$8,713,273</b>   | <b>843</b>                   | <b>8</b>   | <b>\$681,357</b>    | <b>180</b>               | <b>2</b>   | <b>\$324,725</b>    | <b>10,600</b>           | <b>97</b>  | <b>\$9,719,355</b>   |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74</b>  | <b>\$127,610,238</b> | <b>10,856</b>                | <b>7</b>   | <b>\$63,530,851</b> | <b>2,433</b>             | <b>2</b>   | <b>\$37,236,484</b> | <b>130,710</b>          | <b>82</b>  | <b>\$228,377,576</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.93 – Estimated Buildings Impacted by 300-Year Thunderstorm Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|--------------------------------|---------------|-------------------------------|------------|----------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Beaufort</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85         | \$57,018,902         | 2,003                        | 10         | \$10,336,837        | 353                      | 2          | \$7,322,216         | 19,912                  | 97         | \$74,677,956         |
| City of Washington             | 5,790         | 4,828                         | 83         | \$19,739,201         | 709                          | 12         | \$46,393,706        | 197                      | 3          | \$5,043,856         | 5,734                   | 99         | \$71,176,764         |
| Town of Aurora                 | 579           | 440                           | 76         | \$2,028,363          | 85                           | 15         | \$359,322           | 33                       | 6          | \$565,624           | 558                     | 96         | \$2,953,308          |
| Town of Bath                   | 561           | 471                           | 84         | \$2,606,022          | 51                           | 9          | \$287,357           | 31                       | 6          | \$388,824           | 553                     | 99         | \$3,282,203          |
| Town of Belhaven               | 1,087         | 857                           | 79         | \$2,691,524          | 93                           | 9          | \$796,659           | 24                       | 2          | \$264,594           | 974                     | 90         | \$3,752,776          |
| Town of Chocowinity            | 398           | 330                           | 83         | \$925,695            | 36                           | 9          | \$290,070           | 28                       | 7          | \$252,083           | 394                     | 99         | \$1,467,849          |
| Town of Pantego                | 132           | 108                           | 82         | \$441,120            | 11                           | 8          | \$41,280            | 7                        | 5          | \$91,790            | 126                     | 95         | \$574,190            |
| Town of Washington Park        | 232           | 171                           | 74         | \$643,122            | 13                           | 6          | \$200,143           | 0                        | 0          | \$0                 | 184                     | 79         | \$843,266            |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84</b>  | <b>\$86,093,949</b>  | <b>3,001</b>                 | <b>10</b>  | <b>\$58,705,374</b> | <b>673</b>               | <b>2</b>   | <b>\$13,928,987</b> | <b>28,435</b>           | <b>97</b>  | <b>\$158,728,312</b> |
| <b>Carteret</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46         | \$29,837,874         | 1,000                        | 3          | \$3,358,340         | 229                      | 1          | \$4,916,404         | 14,792                  | 51         | \$38,112,618         |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78         | \$12,402,873         | 153                          | 4          | \$2,326,155         | 9                        | 0          | \$29,410            | 3,382                   | 82         | \$14,758,438         |
| Town of Beaufort               | 4,605         | 2,878                         | 62         | \$10,249,881         | 280                          | 6          | \$2,391,927         | 78                       | 2          | \$1,446,256         | 3,236                   | 70         | \$14,088,065         |
| Town of Bogue                  | 642           | 324                           | 50         | \$676,974            | 31                           | 5          | \$65,643            | 8                        | 1          | \$36,287            | 363                     | 57         | \$778,905            |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$1,611,680          | 91                           | 5          | \$223,271           | 26                       | 1          | \$77,803            | 989                     | 56         | \$1,912,753          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$2,010,300          | 101                          | 5          | \$483,651           | 10                       | 1          | \$97,956            | 1,367                   | 71         | \$2,591,907          |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72         | \$25,546,696         | 156                          | 2          | \$435,793           | 19                       | 0          | \$348,276           | 5,307                   | 74         | \$26,330,765         |
| Town of Indian Beach           | 1,138         | 790                           | 69         | \$3,156,347          | 24                           | 2          | \$135,328           | 6                        | 1          | \$40,513            | 820                     | 72         | \$3,332,188          |
| Town of Morehead City          | 10,811        | 6,703                         | 62         | \$17,351,721         | 832                          | 8          | \$2,438,699         | 214                      | 2          | \$3,352,447         | 7,749                   | 72         | \$23,142,867         |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$4,544,584          | 347                          | 6          | \$805,529           | 97                       | 2          | \$465,999           | 4,080                   | 75         | \$5,816,112          |
| Town of Peletier               | 943           | 469                           | 50         | \$632,627            | 52                           | 6          | \$649,828           | 8                        | 1          | \$122,579           | 529                     | 56         | \$1,405,035          |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62         | \$11,926,408         | 79                           | 4          | \$413,299           | 29                       | 1          | \$406,538           | 1,499                   | 67         | \$12,746,245         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57</b>  | <b>\$119,947,965</b> | <b>3,146</b>                 | <b>4</b>   | <b>\$13,727,463</b> | <b>733</b>               | <b>1</b>   | <b>\$11,340,468</b> | <b>44,113</b>           | <b>63</b>  | <b>\$145,015,898</b> |



**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|-------------------------------|----------------|-------------------------------|------------|----------------------|------------------------------|------------|----------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Craven</b>                 |                |                               |            |                      |                              |            |                      |                          |            |                     |                         |            |                      |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89         | \$36,455,753         | 2,034                        | 8          | \$14,155,515         | 305                      | 1          | \$4,950,966         | 24,458                  | 98         | \$55,562,235         |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$5,647,982          | 367                          | 7          | \$5,045,033          | 148                      | 3          | \$28,012,759        | 5,359                   | 99         | \$38,705,775         |
| City of New Bern              | 13,049         | 11,331                        | 87         | \$18,034,936         | 1,239                        | 9          | \$26,243,589         | 298                      | 2          | \$12,553,307        | 12,868                  | 99         | \$56,831,831         |
| Town of Bridgeton             | 326            | 232                           | 71         | \$353,340            | 70                           | 21         | \$147,528            | 10                       | 3          | \$17,294            | 312                     | 96         | \$518,161            |
| Town of Cove City             | 294            | 252                           | 86         | \$401,376            | 29                           | 10         | \$66,422             | 12                       | 4          | \$263,718           | 293                     | 100        | \$731,516            |
| Town of Dover                 | 299            | 276                           | 92         | \$448,451            | 6                            | 2          | \$22,094             | 17                       | 6          | \$160,593           | 299                     | 100        | \$631,139            |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$2,507,512          | 25                           | 2          | \$509,951            | 3                        | 0          | \$28,217            | 1,544                   | 99         | \$3,045,681          |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$3,834,118          | 20                           | 1          | \$129,224            | 21                       | 1          | \$200,909           | 1,909                   | 100        | \$4,164,252          |
| Town of Vanceboro             | 522            | 411                           | 79         | \$681,639            | 76                           | 15         | \$545,890            | 33                       | 6          | \$755,698           | 520                     | 100        | \$1,983,227          |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89</b>  | <b>\$68,365,107</b>  | <b>3,866</b>                 | <b>8</b>   | <b>\$46,865,246</b>  | <b>847</b>               | <b>2</b>   | <b>\$46,943,461</b> | <b>47,562</b>           | <b>99</b>  | <b>\$162,173,817</b> |
| <b>Pamlico</b>                |                |                               |            |                      |                              |            |                      |                          |            |                     |                         |            |                      |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88         | \$10,543,795         | 483                          | 8          | \$740,484            | 70                       | 1          | \$224,139           | 6,233                   | 97         | \$11,508,418         |
| Town of Alliance              | 577            | 484                           | 84         | \$955,516            | 78                           | 14         | \$230,850            | 14                       | 2          | \$46,024            | 576                     | 100        | \$1,232,390          |
| Town of Arapahoe              | 430            | 386                           | 90         | \$257,259            | 26                           | 6          | \$35,408             | 16                       | 4          | \$62,799            | 428                     | 100        | \$355,466            |
| Town of Bayboro               | 515            | 408                           | 79         | \$873,822            | 74                           | 14         | \$303,006            | 31                       | 6          | \$564,695           | 513                     | 100        | \$1,741,523          |
| Town of Grantsboro            | 584            | 527                           | 90         | \$549,239            | 36                           | 6          | \$179,784            | 17                       | 3          | \$162,591           | 580                     | 99         | \$891,614            |
| Town of Mesic                 | 186            | 170                           | 91         | \$286,281            | 10                           | 5          | \$14,603             | 5                        | 3          | \$7,305             | 185                     | 99         | \$308,189            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$978,817            | 14                           | 3          | \$125,388            | 2                        | 0          | \$7,617             | 401                     | 100        | \$1,111,822          |
| Town of Oriental              | 1,378          | 1,205                         | 87         | \$5,123,124          | 100                          | 7          | \$259,113            | 13                       | 1          | \$68,152            | 1,318                   | 96         | \$5,450,390          |
| Town of Stonewall             | 227            | 199                           | 88         | \$638,198            | 21                           | 9          | \$101,354            | 6                        | 3          | \$69,731            | 226                     | 100        | \$809,282            |
| Town of Vandemere             | 192            | 133                           | 69         | \$261,441            | 1                            | 1          | \$437                | 6                        | 3          | \$16,492            | 140                     | 73         | \$278,370            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88</b>  | <b>\$20,467,492</b>  | <b>843</b>                   | <b>8</b>   | <b>\$1,990,427</b>   | <b>180</b>               | <b>2</b>   | <b>\$1,229,545</b>  | <b>10,600</b>           | <b>97</b>  | <b>\$23,687,464</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74</b>  | <b>\$294,874,513</b> | <b>10,856</b>                | <b>7</b>   | <b>\$121,288,510</b> | <b>2,433</b>             | <b>2</b>   | <b>\$73,442,461</b> | <b>130,710</b>          | <b>82</b>  | <b>\$489,605,491</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

**Table 4.94 - Estimated Buildings Impacted by 700-Year Thunderstorm Winds**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                     | Public Buildings at Risk |            |                     | Total Buildings at Risk |            |                      |
|--------------------------------|---------------|-------------------------------|------------|----------------------|------------------------------|------------|---------------------|--------------------------|------------|---------------------|-------------------------|------------|----------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages   | Num                      | % of Total | Estimated Damages   | Num                     | % of Total | Estimated Damages    |
| <b>Beaufort</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Beaufort County | 20,577        | 17,556                        | 85         | \$104,135,493        | 2,003                        | 10         | \$18,033,540        | 353                      | 2          | \$12,382,912        | 19,912                  | 97         | \$134,551,945        |
| City of Washington             | 5,790         | 4,828                         | 83         | \$31,249,826         | 709                          | 12         | \$56,313,978        | 197                      | 3          | \$7,329,264         | 5,734                   | 99         | \$94,893,067         |
| Town of Aurora                 | 579           | 440                           | 76         | \$3,277,485          | 85                           | 15         | \$596,894           | 33                       | 6          | \$877,127           | 558                     | 96         | \$4,751,506          |
| Town of Bath                   | 561           | 471                           | 84         | \$4,425,410          | 51                           | 9          | \$487,090           | 31                       | 6          | \$623,741           | 553                     | 99         | \$5,536,240          |
| Town of Belhaven               | 1,087         | 857                           | 79         | \$7,477,685          | 93                           | 9          | \$2,600,002         | 24                       | 2          | \$776,106           | 974                     | 90         | \$10,853,793         |
| Town of Chocowinity            | 398           | 330                           | 83         | \$2,655,976          | 36                           | 9          | \$782,519           | 28                       | 7          | \$730,101           | 394                     | 99         | \$4,168,595          |
| Town of Pantego                | 132           | 108                           | 82         | \$1,214,006          | 11                           | 8          | \$139,164           | 7                        | 5          | \$193,928           | 126                     | 95         | \$1,547,098          |
| Town of Washington Park        | 232           | 171                           | 74         | \$1,105,258          | 13                           | 6          | \$253,041           | 0                        | 0          | \$0                 | 184                     | 79         | \$1,358,299          |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>24,761</b>                 | <b>84</b>  | <b>\$155,541,139</b> | <b>3,001</b>                 | <b>10</b>  | <b>\$79,206,228</b> | <b>673</b>               | <b>2</b>   | <b>\$22,913,179</b> | <b>28,435</b>           | <b>97</b>  | <b>\$257,660,543</b> |
| <b>Carteret</b>                |               |                               |            |                      |                              |            |                     |                          |            |                     |                         |            |                      |
| Unincorporated Carteret County | 29,284        | 13,563                        | 46         | \$51,491,293         | 1,000                        | 3          | \$6,478,708         | 229                      | 1          | \$7,643,974         | 14,792                  | 51         | \$65,613,975         |
| Town of Atlantic Beach         | 4,141         | 3,220                         | 78         | \$36,958,467         | 153                          | 4          | \$4,379,703         | 9                        | 0          | \$86,815            | 3,382                   | 82         | \$41,424,985         |
| Town of Beaufort               | 4,605         | 2,878                         | 62         | \$19,725,723         | 280                          | 6          | \$4,083,606         | 78                       | 2          | \$2,476,333         | 3,236                   | 70         | \$26,285,662         |
| Town of Bogue                  | 642           | 324                           | 50         | \$1,081,965          | 31                           | 5          | \$135,225           | 8                        | 1          | \$66,382            | 363                     | 57         | \$1,283,573          |
| Town of Cape Carteret          | 1,763         | 872                           | 49         | \$2,691,627          | 91                           | 5          | \$442,497           | 26                       | 1          | \$151,758           | 989                     | 56         | \$3,285,882          |
| Town of Cedar Point            | 1,915         | 1,256                         | 66         | \$3,360,812          | 101                          | 5          | \$774,342           | 10                       | 1          | \$177,603           | 1,367                   | 71         | \$4,312,756          |
| Town of Emerald Isle           | 7,154         | 5,132                         | 72         | \$45,214,199         | 156                          | 2          | \$873,808           | 19                       | 0          | \$551,643           | 5,307                   | 74         | \$46,639,649         |
| Town of Indian Beach           | 1,138         | 790                           | 69         | \$5,116,428          | 24                           | 2          | \$266,615           | 6                        | 1          | \$84,228            | 820                     | 72         | \$5,467,272          |
| Town of Morehead City          | 10,811        | 6,703                         | 62         | \$41,758,020         | 832                          | 8          | \$7,724,968         | 214                      | 2          | \$10,027,160        | 7,749                   | 72         | \$59,510,149         |
| Town of Newport                | 5,441         | 3,636                         | 67         | \$7,215,551          | 347                          | 6          | \$1,241,251         | 97                       | 2          | \$734,748           | 4,080                   | 75         | \$9,191,550          |
| Town of Peletier               | 943           | 469                           | 50         | \$1,020,174          | 52                           | 6          | \$863,275           | 8                        | 1          | \$195,007           | 529                     | 56         | \$2,078,456          |
| Town of Pine Knoll Shores      | 2,253         | 1,391                         | 62         | \$23,252,044         | 79                           | 4          | \$1,016,364         | 29                       | 1          | \$730,846           | 1,499                   | 67         | \$24,999,254         |
| <b>Subtotal Carteret</b>       | <b>70,090</b> | <b>40,234</b>                 | <b>57</b>  | <b>\$238,886,303</b> | <b>3,146</b>                 | <b>4</b>   | <b>\$28,280,362</b> | <b>733</b>               | <b>1</b>   | <b>\$22,926,497</b> | <b>44,113</b>           | <b>63</b>  | <b>\$290,093,163</b> |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                      | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                      |
|-------------------------------|----------------|-------------------------------|------------|----------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|----------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages    | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages    |
| <b>Craven</b>                 |                |                               |            |                      |                              |            |                      |                          |            |                      |                         |            |                      |
| Unincorporated Craven County  | 24,876         | 22,119                        | 89         | \$61,005,965         | 2,034                        | 8          | \$21,532,405         | 305                      | 1          | \$8,061,902          | 24,458                  | 98         | \$90,600,272         |
| City of Havelock              | 5,417          | 4,844                         | 89         | \$8,390,857          | 367                          | 7          | \$7,833,599          | 148                      | 3          | \$40,030,878         | 5,359                   | 99         | \$56,255,334         |
| City of New Bern              | 13,049         | 11,331                        | 87         | \$28,647,423         | 1,239                        | 9          | \$36,788,060         | 298                      | 2          | \$17,591,437         | 12,868                  | 99         | \$83,026,920         |
| Town of Bridgeton             | 326            | 232                           | 71         | \$631,040            | 70                           | 21         | \$283,641            | 10                       | 3          | \$35,478             | 312                     | 96         | \$950,159            |
| Town of Cove City             | 294            | 252                           | 86         | \$651,170            | 29                           | 10         | \$127,441            | 12                       | 4          | \$394,524            | 293                     | 100        | \$1,173,135          |
| Town of Dover                 | 299            | 276                           | 92         | \$770,796            | 6                            | 2          | \$46,457             | 17                       | 6          | \$300,844            | 299                     | 100        | \$1,118,097          |
| Town of River Bend            | 1,553          | 1,516                         | 98         | \$3,537,122          | 25                           | 2          | \$705,947            | 3                        | 0          | \$44,682             | 1,544                   | 99         | \$4,287,750          |
| Town of Trent Woods           | 1,918          | 1,868                         | 97         | \$5,840,021          | 20                           | 1          | \$214,490            | 21                       | 1          | \$378,457            | 1,909                   | 100        | \$6,432,968          |
| Town of Vanceboro             | 522            | 411                           | 79         | \$1,096,197          | 76                           | 15         | \$820,515            | 33                       | 6          | \$1,213,849          | 520                     | 100        | \$3,130,561          |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>42,849</b>                 | <b>89</b>  | <b>\$110,570,591</b> | <b>3,866</b>                 | <b>8</b>   | <b>\$68,352,555</b>  | <b>847</b>               | <b>2</b>   | <b>\$68,052,051</b>  | <b>47,562</b>           | <b>99</b>  | <b>\$246,975,196</b> |
| <b>Pamlico</b>                |                |                               |            |                      |                              |            |                      |                          |            |                      |                         |            |                      |
| Unincorporated Pamlico County | 6,428          | 5,680                         | 88         | \$18,734,592         | 483                          | 8          | \$1,653,523          | 70                       | 1          | \$572,158            | 6,233                   | 97         | \$20,960,274         |
| Town of Alliance              | 577            | 484                           | 84         | \$1,508,015          | 78                           | 14         | \$423,757            | 14                       | 2          | \$82,246             | 576                     | 100        | \$2,014,018          |
| Town of Arapahoe              | 430            | 386                           | 90         | \$604,506            | 26                           | 6          | \$118,070            | 16                       | 4          | \$257,837            | 428                     | 100        | \$980,414            |
| Town of Bayboro               | 515            | 408                           | 79         | \$1,380,460          | 74                           | 14         | \$520,432            | 31                       | 6          | \$1,064,807          | 513                     | 100        | \$2,965,699          |
| Town of Grantsboro            | 584            | 527                           | 90         | \$838,282            | 36                           | 6          | \$292,038            | 17                       | 3          | \$272,939            | 580                     | 99         | \$1,403,259          |
| Town of Mesic                 | 186            | 170                           | 91         | \$466,260            | 10                           | 5          | \$27,795             | 5                        | 3          | \$12,949             | 185                     | 99         | \$507,004            |
| Town of Minnesott Beach       | 403            | 385                           | 96         | \$2,681,419          | 14                           | 3          | \$319,461            | 2                        | 0          | \$27,548             | 401                     | 100        | \$3,028,428          |
| Town of Oriental              | 1,378          | 1,205                         | 87         | \$8,554,846          | 100                          | 7          | \$452,320            | 13                       | 1          | \$122,412            | 1,318                   | 96         | \$9,129,578          |
| Town of Stonewall             | 227            | 199                           | 88         | \$1,061,255          | 21                           | 9          | \$175,073            | 6                        | 3          | \$117,836            | 226                     | 100        | \$1,354,164          |
| Town of Vandemere             | 192            | 133                           | 69         | \$424,253            | 1                            | 1          | \$713                | 6                        | 3          | \$28,683             | 140                     | 73         | \$453,649            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>9,577</b>                  | <b>88</b>  | <b>\$36,253,888</b>  | <b>843</b>                   | <b>8</b>   | <b>\$3,983,182</b>   | <b>180</b>               | <b>2</b>   | <b>\$2,559,415</b>   | <b>10,600</b>           | <b>97</b>  | <b>\$42,796,487</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>117,421</b>                | <b>74</b>  | <b>\$541,251,921</b> | <b>10,856</b>                | <b>7</b>   | <b>\$179,822,327</b> | <b>2,433</b>             | <b>2</b>   | <b>\$116,451,142</b> | <b>130,710</b>          | <b>82</b>  | <b>\$837,525,389</b> |

Source: NCEM Risk Management Tool

**SECTION 4: RISK ASSESSMENT**

Thunderstorm winds and tornadoes can also cause secondary impacts, often resulting from damage to infrastructure. Downed power and communications transmission lines, coupled with disruptions to transportation, create difficulties in reporting and responding to emergencies. These indirect impacts of put tremendous strain on a community in the initial and intermediate recovery phases.

Severe weather can also cause significant agricultural losses. Between 2007-2023, the sum of claims paid for crop damage due to hail and wind damages in the Region was \$3,494,106.40, or an average of \$205,535 in losses annually. Beaufort County was responsible for most of these claims. Table 4.95 through Table 4.98 summarize the crop losses due to severe weather by county, as reported in the RMA system.

**Table 4.95 – Crop Losses Resulting from Severe Weather, Beaufort County, 2007-2023**

| Year                    | Determined Acres | Indemnity Amount      |
|-------------------------|------------------|-----------------------|
| <b>Hail</b>             |                  |                       |
| 2007                    | 12.00            | \$27,524.00           |
| 2008                    | 88.05            | \$171,884.00          |
| 2009                    | 690.90           | \$164,871.00          |
| 2010                    | 135.20           | \$13,305.00           |
| 2012                    | 383.97           | \$53,605.00           |
| 2014                    | 19.33            | \$60,329.10           |
| 2016                    | 200.68           | \$36,043.75           |
| 2017                    | 812.70           | \$211,329.00          |
| 2018                    | 10.458           | 1229.7                |
| 2019                    | 1248.1624        | 295922.8              |
| 2020                    | 386.585          | 92886.5               |
| 2022                    | 269.18           | 9939                  |
| <b>Wind/Excess Wind</b> |                  |                       |
| 2007                    | 65.97            | \$131,518.00          |
| 2008                    | 115.73           | \$208,262.00          |
| 2009                    | 719.24           | \$203,639.00          |
| 2010                    | 95.87            | \$220,950.00          |
| 2012                    | 292.23           | \$257,582.00          |
| 2013                    | 6.26             | \$4,943.00            |
| 2014                    | 237.32           | \$288,503.90          |
| 2016                    | 27.10            | \$22,245.50           |
| 2017                    | 1.35             | \$990.00              |
| 2022                    | 33.94            | \$18,454.00           |
| 2023                    | 29.16            | \$23,668.80           |
| <b>Total</b>            | <b>5,881.39</b>  | <b>\$2,519,625.05</b> |

Source: USDA Risk Management Agency

**Table 4.96 – Crop Losses Resulting from Severe Weather, Carteret County, 2007-2023**

| Year                    | Determined Acres | Indemnity Amount   |
|-------------------------|------------------|--------------------|
| <b>Hail</b>             |                  |                    |
| 2008                    | 218.96           | \$68,510.00        |
| <b>Wind/Excess Wind</b> |                  |                    |
| 2009                    | 52.65            | \$3,606.00         |
| <b>Total</b>            | <b>271.61</b>    | <b>\$72,116.00</b> |

Source: USDA Risk Management Agency

**Table 4.97 – Crop Losses Resulting from Severe Weather, Craven County, 2007-2023**

| Year                    | Determined Acres | Indemnity Amount    |
|-------------------------|------------------|---------------------|
| <b>Hail</b>             |                  |                     |
| 2007                    | 34.55            | \$9,012.00          |
| 2008                    | 40.27            | \$80,144.00         |
| 2014                    | 17.24            | \$24,451.50         |
| 2015                    | 215.00           | \$6,237.00          |
| 2016                    | 4.66             | \$9,620.50          |
| 2018                    | 48.67            | \$43,836.75         |
| 2020                    | 224.66           | \$16,698.00         |
| 2022                    | 28.41            | \$39,908.95         |
| 2023                    | 633.29           | \$162,725.20        |
| <b>Wind/Excess Wind</b> |                  |                     |
| 2008                    | 15.42            | \$16,751.00         |
| 2009                    | 93.56            | \$159,782.00        |
| 2012                    | 22.50            | \$828.00            |
| 2014                    | 29.89            | \$50,969.00         |
| 2015                    | 18.25            | \$1,219.50          |
| 2016                    | 49.94            | \$109,025.60        |
| 2017                    | 19.35            | \$42,553.10         |
| 2019                    | 35.19            | \$52,733.50         |
| <b>Total</b>            | <b>1,530.85</b>  | <b>\$826,495.60</b> |

Source: USDA Risk Management Agency

**Table 4.98 – Crop Losses Resulting from Severe Weather, Pamlico County, 2007-2023**

| Year                    | Determined Acres | Indemnity Amount   |
|-------------------------|------------------|--------------------|
| <b>Hail</b>             |                  |                    |
| 2014                    | 13.16            | \$24,952.25        |
| <b>Wind/Excess Wind</b> |                  |                    |
| 2014                    | 20.58            | \$50,447.50        |
| 2015                    | 7.00             | \$470.00           |
| <b>Total</b>            | <b>40.74</b>     | <b>\$75,869.75</b> |

Source: USDA Risk Management Agency

**ENVIRONMENT**

The main environmental impact from wind is damage to trees or crops. Tornadoes can cause massive damage to the natural environment, uprooting trees, and creating other debris within the tornado’s path. Wind events can also bring down power lines, which could cause a fire and result in even greater environmental impacts. Lightning may also result in the ignition of wildfires. This is part of a natural process, however, and the environment will return to its original state in time.

Hail can cause extensive damage to the natural environment, pelting animals, trees and vegetation with hailstones. Melting hail can also increase both river and flash flood risk.

**CONSEQUENCE ANALYSIS**

Table 4.99 summarizes the potential negative consequences of severe weather.

**Table 4.99 – Consequence Analysis – Tornadoes & Thunderstorms**

| Category  | Consequences  |
|---|---|
| Public  | Injuries and fatalities possible  |
| Responders  | Injuries and fatalities unlikely; potential impacts to response capabilities due to storm impacts and emergency call load   |
| Continuity of Operations (including Continued Delivery of Services) | Potential impacts to continuity of operations due to storm impacts; delays in providing services  |
| Property, Facilities and Infrastructure                             | Possibility of structure fire ignition; potential for disruptions in power and communications infrastructure; destruction and/or damage to any exposed property, especially windows, cars, and siding. Weak tornadoes can cause minor roof damage, while strong tornadoes can destroy whole structures. Buildings are vulnerable to direct impact from wind borne debris. Mobile homes are particularly susceptible to wind damage. |
| Environment   | Potential fire ignition from lightning; hail damage to wildlife and foliage. Wind can cause significant damage to flora, fauna, and environmental systems.  |
| Economic Condition of the Jurisdiction                              | Lightning damage contingent on target; can severely impact/destroy critical infrastructure and other economic drivers.  |
| Public Confidence in the Jurisdiction’s Governance                  | Public confidence is not generally affected by severe weather events.   |

**HAZARD SUMMARY BY JURISDICTION**

The following tables summarize tornado and thunderstorm hazard risks by jurisdiction. Most aspects of severe weather risk do not vary substantially by jurisdiction; however, the impact of these severe weather hazards may vary based on each community’s property exposure. Communities with a higher proportion of mobile homes may be disproportionately impacted by thunderstorm winds. Mobile home units comprise approximately 25% of the housing mix of Beaufort County and Pamlico County; therefore, these areas may face more severe impacts from wind.

**TORNADO**

| Jurisdiction      | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|-------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| All jurisdictions | 3           | 3      | 1              | 4            | 1        | 2.5   | M        |

**THUNDERSTORM WIND**

| Jurisdiction        | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|---------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Beaufort County     | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| City of Washington  | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Aurora      | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Bath        | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Belhaven    | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Chocowinity | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction              | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|---------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Town of Pantego           | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Washington Park   | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Carteret County           | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Atlantic Beach    | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Beaufort          | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Bogue             | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Cape Carteret     | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Cedar Point       | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Emerald Isle      | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Indian Beach      | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Morehead City     | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Newport           | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Peletier          | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Pine Knoll Shores | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Craven County             | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| City of Havelock          | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| City of New Bern          | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Bridgeton         | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Cove City         | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Dover             | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of River Bend        | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Trent Woods       | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Vanceboro         | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Pamlico County            | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Alliance          | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Arapahoe          | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Bayboro           | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Grantsboro        | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Mesic             | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |
| Town of Minnesott Beach   | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Oriental          | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Stonewall         | 4           | 2      | 3              | 4            | 1        | 2.9   | M        |
| Town of Vandemere         | 4           | 3      | 3              | 4            | 1        | 3.2   | H        |

*LIGHTNING AND HAIL*

| Jurisdiction      | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|-------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| All jurisdictions | 4           | 1      | 1              | 4            | 1        | 2.2   | M        |

### 4.5.9 WILDFIRE

#### HAZARD BACKGROUND

A wildfire is a highly destructive fire or any instance of uncontrolled burning in the environment. Wildfires can consume large areas, including infrastructure, property, and natural resources. In cases where wildfires grow near populated areas, evacuations may be necessary. Beyond the direct impact on the environment, the significant volumes of smoke generated under certain atmospheric conditions can also pose health risks to nearby populations. Three general types of fire spread are recognized:

- Ground fires: these fires burn organic material in the soil beneath surface litter and are sustained by smoldering combustion.
- Surface fires: these are spread by a flaming front and burn leaf litter, fallen branches, and other ground-level fuels.
- Crown fires: ignite from the top layer of foliage on trees, known as the canopy. Crown fires are the most intense type of wildfire and are often the most challenging to contain. They require strong winds, steep slopes, and a heavy fuel load to sustain their burning.

Fuels for wildfires are subject to a variety of ignition sources. Generally, wildfires are started by humans, either through arson or carelessness. Fire intensity is controlled by both short-term weather conditions and longer-term vegetation conditions. During intense fires, understory vegetation, such as leaves, small branches, and other organic materials that accumulate on the ground, can become additional fuel for the fire. The most explosive conditions occur when dry, gusty winds blow across dry vegetation. Historically, fire starts have been contained quickly with minimal loss to property and structures.

*Warning Time: 4 – Less than 6 hours*

*Duration: 3 – Less than 1 week*

Weather plays a major role in the birth, growth and death of a wildfire. Weather conditions favorable to wildfire include drought, which increases flammability of surface fuels, and winds, which aid a wildfire’s progress. The combination of wind, temperature, and humidity affects how fast wildland fires can spread. Rapid response can contain wildfires and limit their threat to property. In support of forecasting for fire weather, the National Weather Service Fire Weather Program emerged. This service is provided to federal and state land management agencies for the prevention, suppression, and management of forest and rangeland fires.

The Pamlico Sound Region experiences a variety of wildfire conditions found in the Keetch-Byram Drought Index, which is described in Table 4.100.

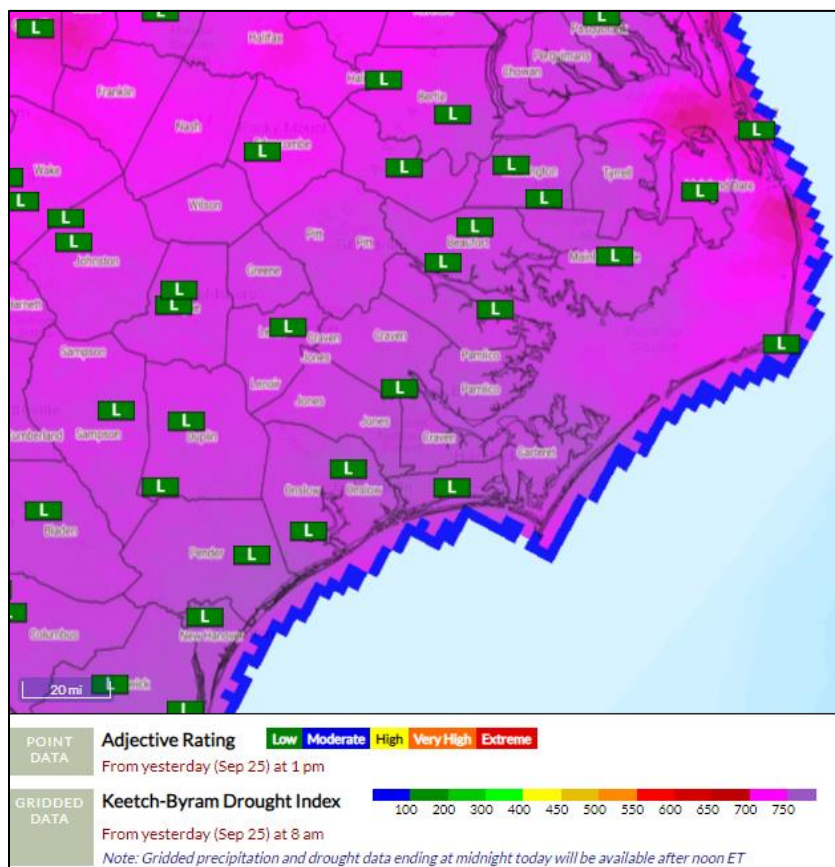
**Table 4.100 – Keetch-Byram Drought Index Fire Danger Rating System**

| KBDI    | Description  |
|---------|--|
| 0-200   | Soil and fuel moisture are high. Most fuels will not readily ignite or burn. However, with sufficient sunlight and wind, cured grasses and some light surface fuels will burn in spots and patches.                                  |
| 200-400 | Fires more readily burn and will carry across an area with no gaps. Heavier fuels will still not readily ignite and burn. Also, expect smoldering and the resulting smoke to carry into and possibly through the night.              |
| 400-600 | Fire intensity begins to significantly increase. Fires will readily burn in all directions exposing mineral soils in some locations. Larger fuels may burn or smolder for several days creating possible smoke and control problems. |
| 600-800 | Fires will burn to mineral soil. Stumps will burn to the end of underground roots and spotting will be a major problem. Fires will burn through the night and heavier fuels will actively burn and contribute to fire intensity.     |



The Keetch-Byram Drought Index (KBDI) for September 25, 2024 is shown in **Error! Not a valid bookmark self-reference.** along with a Daily Fire Danger Estimate Adjective Rating for certain points across the east coast of the state. The KBDI for the Pamlico Sound Region at this time was between 700 and 750, and the Fire Danger Estimate for the nearby area was “Low.” This data provides a point in time measurement and does not reflect long term risk; it is meant to illustrate the tools available to support identification of wildfire risk. Lower fire potential is expected when the region is typically more humid during and soon after hurricane season. Drier weather through the winter could elevate wildfire risk.

**Figure 4.47 – Keetch-Byram Drought Index, September 2024**



Source: USFS Wildland Fire Assessment System

## LOCATION

The location of wildfire risk can be designated by the size of the Wildland Urban Interface (WUI). This interface represents the zone where human-made structures and developments intersect and blend with natural, undeveloped wildland or vegetation, thereby defining the geographical scope of wildfire vulnerability. The WUI is essentially all the land in each county that is not heavily urbanized. The Southern Wildfire Risk Assessment (SWRA) estimates that 92 percent of the Pamlico Sound Region population lives within the WUI. The expansion of residential development from urban centers out into rural landscapes increases the potential for wildland fire threat to public safety and the potential for damage to forest resources and dependent industries. Population growth within the WUI substantially increases the risk of wildfire. Table 4.101 details the extent of the WUI in the Pamlico Sound Region, and Figure 4.48 maps the WUI.

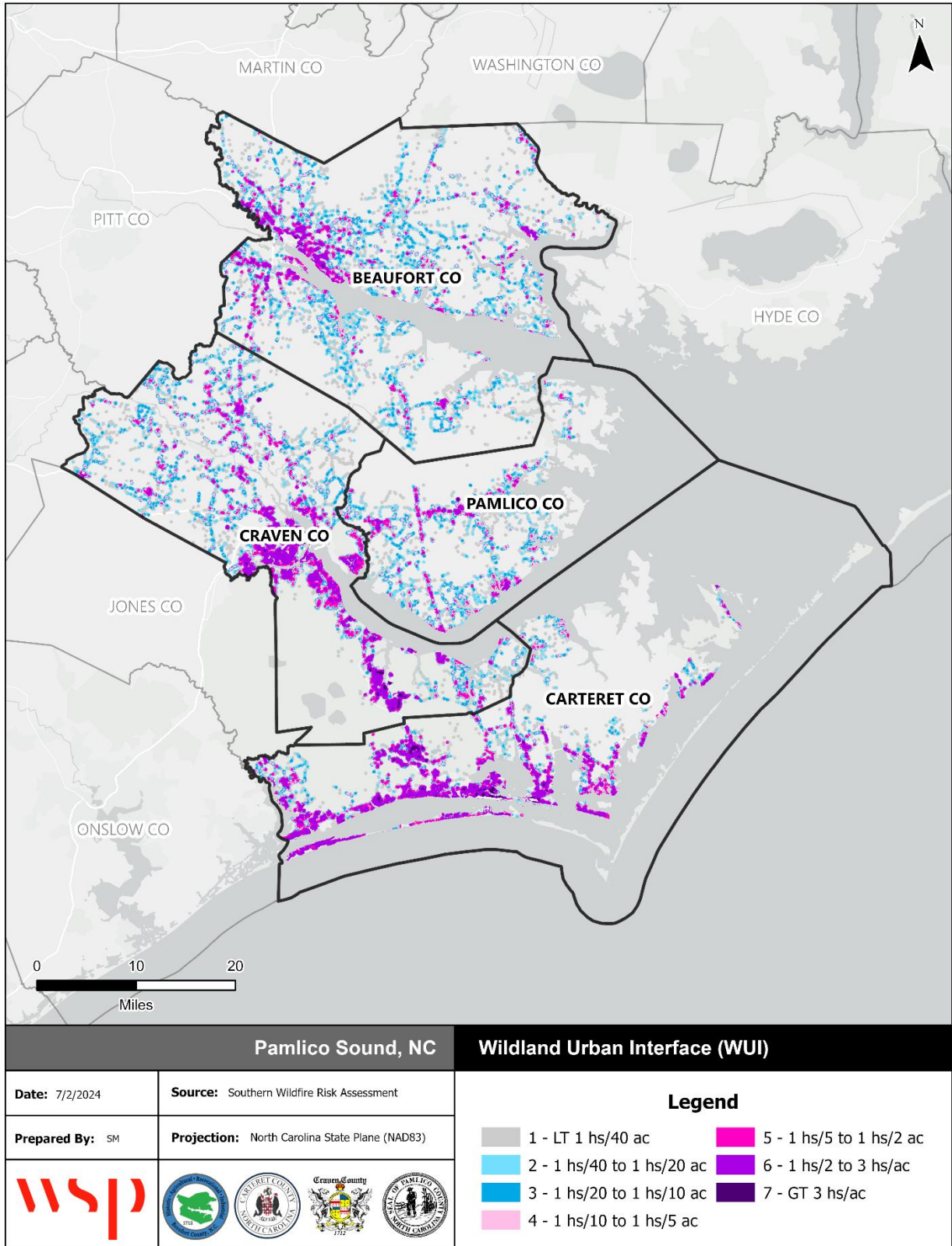
*Spatial Extent: 3 – Moderate*

**Table 4.101 - Wildland Urban Interface, Population and Acres**

|  | <b>Housing Density</b> | <b>WUI Population</b> | <b>Percent of WUI Population</b> | <b>WUI Acres</b> | <b>Percent of WUI Acres</b> |
|--|------------------------|-----------------------|----------------------------------|------------------|-----------------------------|
|  | LT 1hs/40ac            | 2,726                 | 1.3 %                            | 156,431          | 31.3 %                      |
|  | 1hs/40ac to 1hs/20ac   | 4,407                 | 2.1 %                            | 83,868           | 16.8 %                      |
|  | 1hs/20ac to 1hs/10ac   | 9,247                 | 4.4 %                            | 78,441           | 15.7 %                      |
|  | 1hs/10ac to 1hs/5ac    | 14,415                | 6.8 %                            | 60,088           | 12.0 %                      |
|  | 1hs/5ac to 1hs/2ac     | 30,754                | 14.5 %                           | 56,879           | 11.4 %                      |
|  | 1hs/2ac to 3hs/1ac     | 129,274               | 61.1 %                           | 61,321           | 12.3 %                      |
|  | GT 3hs/1ac             | 20,772                | 9.8 %                            | 2,460            | 0.5 %                       |
|  | <b>Total</b>           | <b>211,595</b>        | <b>100.0 %</b>                   | <b>499,488</b>   | <b>100.0 %</b>              |

Source: Southern Wildfire Risk Assessment

Figure 4.48 - Wildland Urban Interface, Pamlico Sound Region



Source: Southern Wildfire Risk Assessment

EXTENT

The scope of a wildfire can be characterized its intensity, assessed using SWRA’s Characteristic Fire Intensity Scale. Fire intensity ratings pinpoint areas with notable fuel hazards and the potential for dangerous fire behavior, considering factors such as fuel types, terrain, and a weighted average of weather conditions across four percentile weather categories. The Fire Intensity Scale consists of five classes.

Table 4.102 – Fire Intensity Scale

| Class               | Description   |
|---------------------|---|
| <b>1, Very Low</b>  | Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.   |
| <b>2, Low</b>       | Small flames, usually less than two feet long; small amount of very short range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.  |
| <b>3, Moderate</b>  | Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.    |
| <b>4, High</b>      | Large Flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property. |
| <b>5, Very High</b> | Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.                                 |

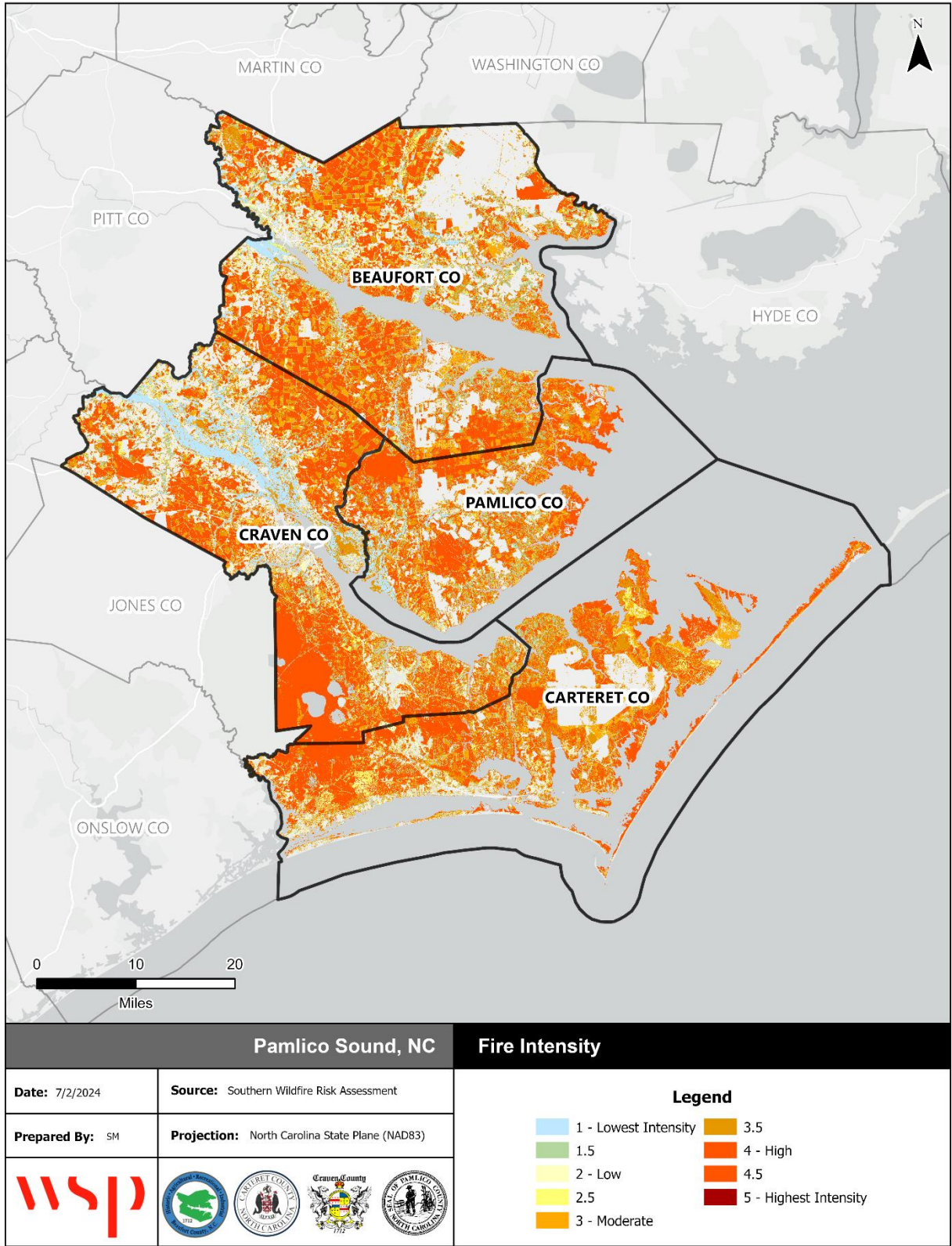
Source: Southern Wildfire Risk Assessment

Approximately 25 percent of the Pamlico Sound Region may experience a Class 4 or Class 4.5 Fire Intensity, which poses significant harm or damage to life and property. Over 14 percent of the Region may experience Class 3 Fire Intensity, which has potential for harm to life and property but is easier to suppress with dozer and plows. The remainder of the Region is either non-burnable (49.1%) or would face a Class 1 or Class 2 Fire Intensity, which are easily suppressed. Figure 4.49 shows the potential fire intensity across the Pamlico Sound Region.

Table 4.103 – Fire Intensity Scale

|  | Class               | Acres            | Percent        |
|--|---------------------|------------------|----------------|
|  | Non-Burnable        | 1,143,600        | 49.1 %         |
|  | 1 Lowest Intensity  | 81,363           | 3.5 %          |
|  | 1.5                 | 97,665           | 4.2 %          |
|  | 2 Low               | 40,883           | 1.8 %          |
|  | 2.5                 | 61,201           | 2.6 %          |
|  | 3 Moderate          | 150,978          | 6.5 %          |
|  | 3.5                 | 180,578          | 7.8 %          |
|  | 4 High              | 359,578          | 15.4 %         |
|  | 4.5                 | 213,267          | 9.2 %          |
|  | 5 Highest Intensity | 0                | 0.0 %          |
|  | <b>Total</b>        | <b>1,192,582</b> | <b>100.0 %</b> |

Figure 4.49 - Characteristic Fire Intensity, Pamlico Sound Region



Source: Southern Wildfire Risk Assessment

*Impact: 2 – Limited*

**HISTORICAL OCCURRENCES**

The North Carolina Forest Service (NCFS) began keeping records of fire occurrence on private and state-owned lands in 1928. Since this time, there has been an average of approximately 4,063 fires and more than 104,000 acres annually. Recently, within the last 10 years, the State has averaged closer to 4,300 fires per year and 14,000 acres burned annually.

Table 4.104 lists past occurrences of wildfire in the Pamlico Sound Region since 1999 as provided by the North Carolina Forest Service (NCFS). This data only accounts for occurrences within unincorporated areas, which fall under the NCFS jurisdiction, as well as larger events in incorporated areas where local fire departments requested NCFS support for fire suppression. Therefore, actual number of fires and acreage burned is higher than what can be reported here.

**Table 4.104 – Records for Wildfire in the Pamlico Sound Region, 1999-2023**

| <b>Year</b>  | <b>Wildfire Count</b> | <b>Acres Burned</b> | <b>Average Acreage Burned</b> |
|--------------|-----------------------|---------------------|-------------------------------|
| 1999         | 157                   | 573.2               | 3.65                          |
| 2000         | 127                   | 2,473.7             | 19.48                         |
| 2001         | 188                   | 671.0               | 3.57                          |
| 2002         | 123                   | 4,484.8             | 36.46                         |
| 2003         | 19                    | 79.3                | 4.17                          |
| 2004         | 96                    | 1,163.6             | 12.12                         |
| 2005         | 109                   | 597.6               | 5.48                          |
| 2006         | 84                    | 1,673.8             | 19.93                         |
| 2007         | 140                   | 5,668.8             | 40.49                         |
| 2008         | 128                   | 933.5               | 7.29                          |
| 2009         | 75                    | 1,480.5             | 19.74                         |
| 2010         | 88                    | 475.1               | 5.40                          |
| 2011         | 209                   | 702.7               | 3.36                          |
| 2012         | 59                    | 200.5               | 3.40                          |
| 2013         | 64                    | 733.5               | 11.46                         |
| 2014         | 64                    | 219.6               | 3.43                          |
| 2015         | 73                    | 157.6               | 2.16                          |
| 2016         | 71                    | 212.3               | 2.99                          |
| 2017         | 120                   | 622.0               | 5.18                          |
| 2018         | 77                    | 453.4               | 5.89                          |
| 2019         | 71                    | 638.64              | 8.99                          |
| 2020         | 131                   | 539.51              | 4.12                          |
| 2021         | 243                   | 1,267.18            | 5.21                          |
| 2022         | 129                   | 33,150.86           | 256.9                         |
| 2023         | 139                   | 3,003.41            | 21.6                          |
| <b>Total</b> | <b>2784</b>           | <b>62,176.1</b>     | <b>22.3</b>                   |

Source: NC Forest Service

Note: Records were not available for Pamlico County for 2003, therefore the total event count and acreage burned may be slightly higher than what is reported in this table.

Data is tabulated by NC Forest Service reporting year and may not fully correspond to the year events occurred.

Based on NCFS records, over the 25-year period from 1999 through 2023, the Pamlico Sound Region experienced 2,784 wildfire events that have burned over 62,176 acres of land, or approximately 22.3 acres

per fire on average. Total fire counts and acreage burned by county are reported in the jurisdictional annexes.

A recent fire of note in the region was the Great Lakes Fire, which occurred in April 2023 in the Croatan National Forest in Craven County, one mile south-southeast of New Bern. The fire was suspected to be human caused. It burned in pocosin swamp and mixed fuels within and around the footprint of the 2012 Dad Fire, which burned roughly 21,331 acres. Previous prescribed burning by the U. S. Forest Service helped slow fire spread by reducing the amount of burnable vegetation. No structures were lost, but 32,400 acres burned.

**PROBABILITY OF FUTURE OCCURRENCE**

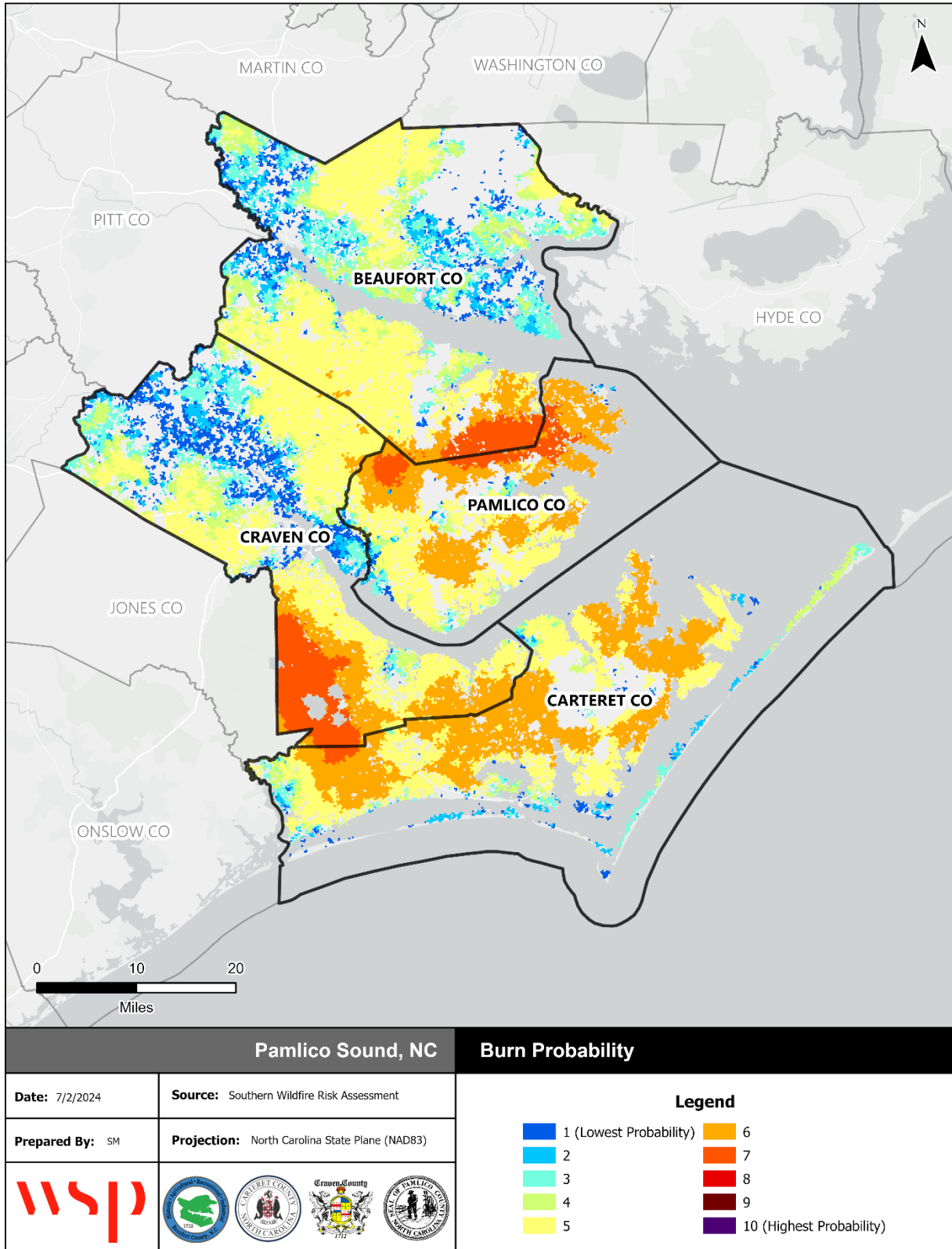
The Southern Wildfire Risk Assessment provides a Burn Probability analysis which predicts the probability of an area burning based on landscape conditions, weather, historical ignition patterns, and historical fire prevention and suppression efforts. Burn Probability data is generated by simulating fires under different weather, fire intensity, and other conditions. Values in the Burn Probability (BP) data layer indicate, for each pixel, the number of times that cell was burned by a modeled fire, divided by the total number of annual weather scenarios simulated. The simulations are calibrated to historical fire size distributions. The Burn Probability for the Pamlico Sound Region is presented in Table 4.105 and illustrated in Figure 4.50

**Table 4.105 - Burn Probability, Pamlico Sound Region**

|  | <b>Class</b> | <b>Acres</b>     | <b>Percent</b> |
|--|--------------|------------------|----------------|
|  | 1            | 69,836           | 6.2 %          |
|  | 2            | 66,248           | 5.8 %          |
|  | 3            | 94,810           | 8.4 %          |
|  | 4            | 113,418          | 10.0 %         |
|  | 5            | 449,562          | 39.6 %         |
|  | 6            | 262,052          | 23.1 %         |
|  | 7            | 79,213           | 7.0 %          |
|  | 8            | 0                | 0.0 %          |
|  | 9            | 0                | 0.0 %          |
|  | 10           | 0                | 0.0 %          |
|  | <b>Total</b> | <b>1,135,139</b> | <b>100.0 %</b> |

Source: Southern Wildfire Risk Assessment

Figure 4.50 - Burn Probability, Pamlico Sound Region



Source: Southern Wildfire Risk Assessment



The entirety of the Pamlico Sound Region has a burn probability of 7 or less, and 70 percent of the region has a burn probability of 5 or less. The areas of highest burn probability are located in southwest Craven County in and around Croatan National Forest as well as along the border of Pamlico County and Beaufort County.

The probability of wildfire across the Region is considered likely, defined as between a 10% and 100% annual chance of occurrence. While all jurisdictions fall within this threshold, the areas containing moderate burn probability, noted above, have a comparatively higher probability of occurrence.

*Probability: 3 – Likely*

### CLIMATE CHANGE

Climate is a major determinant of wildfire through its control of weather, as well as through interaction with fuel availability, fuel distribution and flammability at the global, regional, and local levels. With hotter temperatures, drier soil and worsening drought conditions in the Region, wildfires have the potential to become lightning has been more frequent and more extreme. Climate change has the possibility of lengthening wildfire season throughout the season, as well as throughout the Western United States.

### VULNERABILITY ASSESSMENT

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#### METHODOLOGIES AND ASSUMPTIONS

Population and property at risk to wildfire was estimated using data from the NCEM IRISK database, which was compiled in NCEM's Risk Management Tool.

Within IRISK, wildfire hazard areas were determined using the Wildland Fire Susceptibility Index (WFSI). The following parameters were applied:

- Areas with a WFSI value of 0.01 – 0.05 were considered to be at moderate risk.
- Areas with a WFSI value greater than 0.05 were considered to be at high risk.
- Areas with a WFSI value less than 0.01 were considered to not be at risk.

The WFSI integrates the probability of an acre igniting and the expected final fire size based on the rate of spread in four weather percentile categories into a single measure of wildland fire susceptibility. Due to some necessary assumptions, mainly fuel homogeneity, it is not the true probability. But since all areas of the state have this value determined consistently, it allows for comparison and ordination of areas of the state as to the likelihood of an acre burning.

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#### PEOPLE

Wildfire can cause fatalities and human health hazards. Ensuring procedures are in place for rapid warning and evacuation are essential to reducing vulnerability. Table 4.106 details the population estimated to be at risk to wildfire according to the NCEM IRISK database.

**SECTION 4: RISK ASSESSMENT**

**Table 4.106 - Estimated Population Impacted by Wildfire**

| Jurisdiction                   | Total Population | Total Population at Risk |            | All Elderly Population | Elderly Population at Risk |            | All Children Population | Children at Risk |            |
|--------------------------------|------------------|--------------------------|------------|------------------------|----------------------------|------------|-------------------------|------------------|------------|
|                                |                  | Number                   | Percent    |                        | Number                     | Percent    |                         | Number           | Percent    |
| <b>Beaufort</b>                |                  |                          |            |                        |                            |            |                         |                  |            |
| Unincorporated Beaufort County | 33,905           | 22,859                   | 67%        | 8,207                  | 5,533                      | 67%        | 1,523                   | 1,027            | 67%        |
| City of Washington             | 11,124           | 6,496                    | 58%        | 2,514                  | 1,468                      | 58%        | 684                     | 399              | 58%        |
| Town of Aurora                 | 104              | 86                       | 83%        | 27                     | 22                         | 81%        | 4                       | 3                | 75%        |
| Town of Bath                   | 242              | 150                      | 62%        | 69                     | 43                         | 62%        | 13                      | 8                | 62%        |
| Town of Belhaven               | 441              | 35                       | 8%         | 129                    | 10                         | 8%         | 15                      | 1                | 7%         |
| Town of Chocowinity            | 116              | 82                       | 71%        | 25                     | 18                         | 72%        | 5                       | 4                | 80%        |
| Town of Pantego                | 12               | 4                        | 33%        | 2                      | 1                          | 50%        | 1                       | 0                | 0%         |
| Town of Washington Park        | 168              | 161                      | 96%        | 41                     | 39                         | 95%        | 9                       | 9                | 100%       |
| <b>Subtotal Beaufort</b>       | <b>46,112</b>    | <b>29,873</b>            | <b>65%</b> | <b>11,014</b>          | <b>7,134</b>               | <b>65%</b> | <b>2,254</b>            | <b>1,451</b>     | <b>64%</b> |
| <b>Carteret</b>                |                  |                          |            |                        |                            |            |                         |                  |            |
| Unincorporated Carteret County | 34,687           | 15,817                   | 46%        | 8,258                  | 3,766                      | 46%        | 1,409                   | 642              | 46%        |
| Town of Atlantic Beach         | 856              | 225                      | 26%        | 349                    | 92                         | 26%        | 6                       | 2                | 33%        |
| Town of Beaufort               | 3,815            | 1,344                    | 35%        | 1,094                  | 386                        | 35%        | 141                     | 50               | 35%        |
| Town of Bogue                  | 795              | 474                      | 60%        | 140                    | 84                         | 60%        | 42                      | 25               | 60%        |
| Town of Cape Carteret          | 1,647            | 643                      | 39%        | 385                    | 150                        | 39%        | 85                      | 33               | 39%        |
| Town of Cedar Point            | 2,174            | 1,302                    | 60%        | 516                    | 309                        | 60%        | 112                     | 67               | 60%        |
| Town of Emerald Isle           | 3,275            | 141                      | 4%         | 1,005                  | 43                         | 4%         | 116                     | 5                | 4%         |
| Town of Indian Beach           | 340              | 56                       | 16%        | 140                    | 23                         | 16%        | 8                       | 1                | 13%        |
| Town of Morehead City          | 19,390           | 10,885                   | 56%        | 4,680                  | 2,627                      | 56%        | 979                     | 550              | 56%        |
| Town of Newport                | 9,170            | 6,821                    | 74%        | 1,730                  | 1,287                      | 74%        | 303                     | 225              | 74%        |
| Town of Peletier               | 617              | 338                      | 55%        | 113                    | 62                         | 55%        | 21                      | 12               | 57%        |
| Town of Pine Knoll Shores      | 1,373            | 995                      | 72%        | 566                    | 410                        | 72%        | 32                      | 23               | 72%        |
| <b>Subtotal Carteret</b>       | <b>78,139</b>    | <b>39,041</b>            | <b>50%</b> | <b>18,976</b>          | <b>9,239</b>               | <b>49%</b> | <b>3,254</b>            | <b>1,635</b>     | <b>50%</b> |
| <b>Craven</b>                  |                  |                          |            |                        |                            |            |                         |                  |            |
| Unincorporated Craven County   | 64,150           | 36,641                   | 57%        | 12,919                 | 7,379                      | 57%        | 3,779                   | 2,158            | 57%        |
| City of Havelock               | 8,226            | 5,409                    | 66%        | 425                    | 279                        | 66%        | 775                     | 510              | 66%        |
| City of New Bern               | 26,554           | 8,500                    | 32%        | 5,735                  | 1,836                      | 32%        | 1,705                   | 546              | 32%        |
| Town of Bridgeton              | 147              | 63                       | 43%        | 28                     | 12                         | 43%        | 11                      | 5                | 45%        |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | Total Population | Total Population at Risk |            | All Elderly Population | Elderly Population at Risk |            | All Children Population | Children at Risk |            |
|-------------------------------|------------------|--------------------------|------------|------------------------|----------------------------|------------|-------------------------|------------------|------------|
|                               |                  | Number                   | Percent    |                        | Number                     | Percent    |                         | Number           | Percent    |
| Town of Cove City             | 21               | 4                        | 19%        | 5                      | 1                          | 20%        | 3                       | 1                | 33%        |
| Town of Dover                 | 31               | 0                        | 0%         | 8                      | 0                          | 0%         | 4                       | 0                | 0%         |
| Town of River Bend            | 1,852            | 1,297                    | 70%        | 616                    | 431                        | 70%        | 34                      | 24               | 71%        |
| Town of Trent Woods           | 4,633            | 1,984                    | 43%        | 1,425                  | 610                        | 43%        | 153                     | 66               | 43%        |
| Town of Vanceboro             | 78               | 72                       | 92%        | 19                     | 17                         | 89%        | 3                       | 3                | 100%       |
| <b>Subtotal Craven</b>        | <b>105,692</b>   | <b>53,970</b>            | <b>51%</b> | <b>21180</b>           | <b>10565</b>               | <b>50%</b> | <b>6467</b>             | <b>3313</b>      | <b>51%</b> |
| <b>Pamlico</b>                |                  |                          |            |                        |                            |            |                         |                  |            |
| Unincorporated Pamlico County | 11,911           | 10,047                   | 84%        | 3,592                  | 3,030                      | 84%        | 331                     | 279              | 84%        |
| Town of Alliance              | 159              | 148                      | 93%        | 37                     | 34                         | 92%        | 8                       | 7                | 88%        |
| Town of Arapahoe              | 118              | 118                      | 100%       | 37                     | 37                         | 100%       | 5                       | 5                | 100%       |
| Town of Bayboro               | 144              | 142                      | 99%        | 34                     | 34                         | 100%       | 7                       | 7                | 100%       |
| Town of Grantsboro            | 198              | 194                      | 98%        | 44                     | 43                         | 98%        | 7                       | 7                | 100%       |
| Town of Mesic                 | 17               | 14                       | 82%        | 5                      | 4                          | 80%        | 0                       | 0                | 0%         |
| Town of Minnesott Beach       | 128              | 81                       | 63%        | 40                     | 25                         | 63%        | 4                       | 3                | 75%        |
| Town of Oriental              | 295              | 241                      | 82%        | 116                    | 95                         | 82%        | 12                      | 10               | 83%        |
| Town of Stonewall             | 73               | 73                       | 100%       | 32                     | 32                         | 100%       | 2                       | 2                | 100%       |
| Town of Vandemere             | 24               | 23                       | 96%        | 8                      | 8                          | 100%       | 0                       | 0                | 0%         |
| <b>Subtotal Pamlico</b>       | <b>13,067</b>    | <b>11,081</b>            | <b>85%</b> | <b>3945</b>            | <b>3342</b>                | <b>85%</b> | <b>376</b>              | <b>320</b>       | <b>85%</b> |
| <b>Region Total</b>           | <b>243,010</b>   | <b>133,965</b>           | <b>55%</b> | <b>55115</b>           | <b>30280</b>               | <b>55%</b> | <b>12351</b>            | <b>6719</b>      | <b>54%</b> |

Source: NCEM Risk Management Tool

**PROPERTY**

Wildfire can result in direct property damage, encompassing harm to buildings, vehicles, landscaped areas, agricultural lands, and livestock. Employing construction methods and adhering to building codes can enhance the fire resistance and safety of structures. Strategies aimed at mitigating vulnerability to wildfires involve incorporating street design for improved fire truck access, integrating fire-resistant materials in construction, and adopting landscaping techniques to minimize flammability and limit the spread of fire.

Regarding structure vulnerability and wildfire-resistant construction techniques, a report from Headwaters Economics outlines key components of structure vulnerabilities and indicates that a new home can be built to wildfire-resistant construction standards for roughly the same cost as a typical home. The roof is the most vulnerable area of a home because of its large surface area. Embers can ignite vegetative debris that has accumulated on the roof surface or in gutters. Embers also can enter the attic through roof and under-eave vents. Exterior walls are vulnerable from exposure to flames or prolonged exposure to radiant heat, such as from burning vegetation or a neighboring home, which can ignite combustible siding. Decks

## SECTION 4: RISK ASSESSMENT

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and near-home landscaping are also vulnerable to embers and burning vegetation and can expose the rest of a structure if ignited.

Per Headwaters Economics, wildfire-resistant modifications to roofing, vents, fascia, soffits, and gutters add approximately 27% to the cost of the typical roof. Wildfire-resistant fiber-cement siding as compared to cedar plank siding is about 25% less expensive. Mitigation techniques to make a deck wildfire-resistant include using wildfire-resistant materials for walking surface, using foil-faced bitumen tape on the top surface of the support joists, and creating a noncombustible zone underneath the deck.

Table 4.108 on the following page details the buildings at risk to wildfire in the Pamlico Sound Region.

Table 4.107 below summarizes the number of critical facilities and their total value that fall within areas with moderate to high risk for wildfire impacts, defined as ratings of -5 to -9 on the WUIRI.

**Table 4.107 - Critical Facility Exposure to Moderate to High Risk of Wildfire Impacts**

| <b>FEMA Lifeline</b>     | <b>Critical Facility Count</b> | <b>Total Structure Value</b> |
|--------------------------|--------------------------------|------------------------------|
| Communications           | 16                             | \$78,006,827                 |
| Energy                   | 1                              | \$309,205                    |
| Food, Hydration, Shelter | 80                             | \$220,884,744                |
| Health and Medical       | 0                              | \$0                          |
| Safety and Security      | 80                             | \$144,590,044                |
| Transportation           | 136                            | \$105,170,895                |
| Water Systems            | 13                             | \$30,056,908                 |
| <b>Total</b>             | <b>217</b>                     | <b>\$57,719,315</b>          |

**SECTION 4: RISK ASSESSMENT**

**Table 4.108 – Estimated Buildings Impacted by Wildfire**

| Jurisdiction                   | All Buildings | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                      | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|--------------------------------|---------------|-------------------------------|------------|------------------------|------------------------------|------------|----------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                                | Num           | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages    | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| <b>Beaufort</b>                |               |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Beaufort County | 20,577        | 12,251                        | 60%        | \$1,589,276,203        | 1,029                        | 5%         | \$387,231,716        | 212                      | 1%         | \$214,994,359        | 13,492                  | 66%        | \$2,191,502,278        |
| City of Washington             | 5,790         | 2,841                         | 49%        | \$550,252,743          | 303                          | 5%         | \$334,617,992        | 68                       | 1%         | \$108,099,273        | 3,212                   | 55%        | \$992,970,009          |
| Town of Aurora                 | 579           | 379                           | 65%        | \$60,741,730           | 77                           | 13%        | \$25,014,168         | 30                       | 5%         | \$25,217,210         | 486                     | 84%        | \$110,973,109          |
| Town of Bath                   | 561           | 295                           | 53%        | \$48,481,771           | 29                           | 5%         | \$7,653,073          | 17                       | 3%         | \$11,125,154         | 341                     | 61%        | \$67,259,999           |
| Town of Belhaven               | 1,087         | 75                            | 7%         | \$14,640,612           | 10                           | 1%         | \$6,760,785          | 2                        | 0%         | \$3,740,848          | 87                      | 8%         | \$25,142,246           |
| Town of Chocowinity            | 398           | 237                           | 60%        | \$56,304,117           | 20                           | 5%         | \$16,483,102         | 24                       | 6%         | \$22,250,889         | 281                     | 71%        | \$95,038,108           |
| Town of Pantego                | 132           | 39                            | 30%        | \$4,842,764            | 6                            | 5%         | \$1,312,561          | 2                        | 2%         | \$2,116,790          | 47                      | 36%        | \$8,272,114            |
| Town of Washington Park        | 232           | 209                           | 90%        | \$39,112,915           | 12                           | 5%         | \$3,445,450          | 0                        | 0%         | \$0                  | 221                     | 95%        | \$42,558,365           |
| <b>Subtotal Beaufort</b>       | <b>29,356</b> | <b>16,326</b>                 | <b>56%</b> | <b>\$2,363,652,855</b> | <b>1,486</b>                 | <b>5%</b>  | <b>\$782,518,847</b> | <b>355</b>               | <b>1%</b>  | <b>\$387,544,523</b> | <b>18,167</b>           | <b>62%</b> | <b>\$3,533,716,228</b> |
| <b>Carteret</b>                |               |                               |            |                        |                              |            |                      |                          |            |                      |                         |            |                        |
| Unincorporated Carteret County | 29,284        | 12,328                        | 42%        | \$1,290,942,586        | 883                          | 3%         | \$274,508,065        | 201                      | 1%         | \$189,295,747        | 13,412                  | 46%        | \$1,754,746,399        |
| Town of Atlantic Beach         | 4,141         | 1,029                         | 25%        | \$199,125,111          | 36                           | 1%         | \$28,317,020         | 4                        | 0%         | \$2,934,310          | 1,069                   | 26%        | \$230,376,441          |
| Town of Beaufort               | 4,605         | 1,457                         | 32%        | \$245,528,613          | 83                           | 2%         | \$165,911,115        | 28                       | 1%         | \$43,983,758         | 1,568                   | 34%        | \$455,423,486          |
| Town of Bogue                  | 642           | 324                           | 50%        | \$38,296,466           | 31                           | 5%         | \$7,379,760          | 8                        | 1%         | \$6,539,915          | 363                     | 57%        | \$52,216,142           |
| Town of Cape Carteret          | 1,763         | 600                           | 34%        | \$81,778,835           | 50                           | 3%         | \$24,402,201         | 20                       | 1%         | \$8,772,398          | 670                     | 38%        | \$114,953,434          |
| Town of Cedar Point            | 1,915         | 1,022                         | 53%        | \$114,563,026          | 96                           | 5%         | \$38,310,525         | 10                       | 1%         | \$9,386,128          | 1,128                   | 59%        | \$162,259,680          |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                 | All Buildings | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                      | Total Buildings at Risk |            |                        |
|------------------------------|---------------|-------------------------------|------------|------------------------|------------------------------|------------|------------------------|--------------------------|------------|----------------------|-------------------------|------------|------------------------|
|                              | Num           | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages    | Num                     | % of Total | Estimated Damages      |
| Town of Emerald Isle         | 7,154         | 297                           | 4%         | \$60,445,026           | 8                            | 0%         | \$1,658,421            | 2                        | 0%         | \$495,281            | 307                     | 4%         | \$62,598,727           |
| Town of Indian Beach         | 1,138         | 173                           | 15%        | \$45,625,625           | 19                           | 2%         | \$9,487,020            | 5                        | 0%         | \$2,111,176          | 197                     | 17%        | \$57,223,821           |
| Town of Morehead City        | 10,811        | 5,161                         | 48%        | \$836,908,114          | 542                          | 5%         | \$308,774,000          | 89                       | 1%         | \$113,550,014        | 5,792                   | 54%        | \$1,259,232,128        |
| Town of Newport              | 5,441         | 3,580                         | 66%        | \$342,064,002          | 340                          | 6%         | \$99,214,138           | 97                       | 2%         | \$69,380,374         | 4,017                   | 74%        | \$510,658,514          |
| Town of Peletier             | 943           | 469                           | 50%        | \$47,555,656           | 52                           | 6%         | \$24,657,282           | 8                        | 1%         | \$6,390,822          | 529                     | 56%        | \$78,603,760           |
| Town of Pine Knoll Shores    | 2,253         | 1,525                         | 68%        | \$491,414,116          | 79                           | 4%         | \$38,326,713           | 26                       | 1%         | \$17,724,450         | 1,630                   | 72%        | \$547,465,279          |
| <b>Subtotal Carteret</b>     | <b>70,090</b> | <b>27,965</b>                 | <b>40%</b> | <b>\$3,794,247,176</b> | <b>2,219</b>                 | <b>3%</b>  | <b>\$1,020,946,260</b> | <b>498</b>               | <b>1%</b>  | <b>\$470,564,373</b> | <b>30,682</b>           | <b>44%</b> | <b>\$5,285,757,811</b> |
| <b>Craven</b>                |               |                               |            |                        |                              |            |                        |                          |            |                      |                         |            |                        |
| Unincorporated Craven County | 24,876        | 12,813                        | 52%        | \$1,346,616,377        | 1,059                        | 4%         | \$432,432,040          | 158                      | 1%         | \$237,044,154        | 14,030                  | 56%        | \$2,016,092,571        |
| City of Havelock             | 5,417         | 3,216                         | 59%        | \$377,964,596          | 158                          | 3%         | \$198,653,426          | 35                       | 1%         | \$135,801,925        | 3,409                   | 63%        | \$712,419,948          |
| City of New Bern             | 13,049        | 3,681                         | 28%        | \$603,683,860          | 178                          | 1%         | \$426,774,016          | 60                       | 0%         | \$211,069,615        | 3,919                   | 30%        | \$1,241,527,491        |
| Town of Bridgeton            | 326           | 101                           | 31%        | \$8,056,725            | 47                           | 14%        | \$18,346,307           | 7                        | 2%         | \$2,623,873          | 155                     | 48%        | \$29,026,905           |
| Town of Cove City            | 294           | 43                            | 15%        | \$3,438,152            | 0                            | 0%         | \$0                    | 0                        | 0%         | \$0                  | 43                      | 15%        | \$3,438,152            |
| Town of Dover                | 299           | 3                             | 1%         | \$256,345              | 1                            | 0%         | \$218,943              | 0                        | 0%         | \$0                  | 4                       | 1%         | \$475,288              |
| Town of River Bend           | 1,553         | 1,066                         | 69%        | \$144,044,965          | 22                           | 1%         | \$75,170,736           | 2                        | 0%         | \$2,714,864          | 1,090                   | 70%        | \$221,930,565          |
| Town of Trent Woods          | 1,918         | 803                           | 42%        | \$141,310,462          | 6                            | 0%         | \$5,057,195            | 11                       | 1%         | \$25,378,060         | 820                     | 43%        | \$171,745,717          |
| Town of Vanceboro            | 522           | 378                           | 72%        | \$42,872,455           | 67                           | 13%        | \$27,944,231           | 31                       | 6%         | \$31,124,710         | 476                     | 91%        | \$101,941,396          |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction                  | All Buildings  | Residential Buildings at Risk |            |                        | Commercial Buildings at Risk |            |                        | Public Buildings at Risk |            |                        | Total Buildings at Risk |            |                         |
|-------------------------------|----------------|-------------------------------|------------|------------------------|------------------------------|------------|------------------------|--------------------------|------------|------------------------|-------------------------|------------|-------------------------|
|                               | Num            | Num                           | % of Total | Estimated Damages      | Num                          | % of Total | Estimated Damages      | Num                      | % of Total | Estimated Damages      | Num                     | % of Total | Estimated Damages       |
| <b>Subtotal Craven</b>        | <b>48,254</b>  | <b>22,104</b>                 | <b>46%</b> | <b>\$2,668,243,937</b> | <b>1,538</b>                 | <b>3%</b>  | <b>\$1,184,596,894</b> | <b>304</b>               | <b>1%</b>  | <b>\$645,757,201</b>   | <b>23,946</b>           | <b>50%</b> | <b>\$4,498,598,033</b>  |
| <b>Pamlico</b>                |                |                               |            |                        |                              |            |                        |                          |            |                        |                         |            |                         |
| Unincorporated Pamlico County | 6,428          | 4,906                         | 76%        | \$440,675,041          | 408                          | 6%         | \$67,774,868           | 62                       | 1%         | \$26,500,263           | 5,376                   | 84%        | \$534,950,171           |
| Town of Alliance              | 577            | 450                           | 78%        | \$37,197,055           | 78                           | 14%        | \$23,155,239           | 13                       | 2%         | \$4,270,716            | 541                     | 94%        | \$64,623,010            |
| Town of Arapahoe              | 430            | 386                           | 90%        | \$30,720,175           | 26                           | 6%         | \$5,490,754            | 16                       | 4%         | \$12,182,485           | 428                     | 100%       | \$48,393,414            |
| Town of Bayboro               | 515            | 403                           | 78%        | \$32,078,612           | 73                           | 14%        | \$21,046,775           | 27                       | 5%         | \$26,057,913           | 503                     | 98%        | \$79,183,300            |
| Town of Grantsboro            | 584            | 515                           | 88%        | \$33,567,922           | 32                           | 5%         | \$15,422,345           | 17                       | 3%         | \$16,030,596           | 564                     | 97%        | \$65,020,863            |
| Town of Mesic                 | 186            | 145                           | 78%        | \$12,950,100           | 9                            | 5%         | \$552,737              | 4                        | 2%         | \$944,505              | 158                     | 85%        | \$14,447,343            |
| Town of Minnesott Beach       | 403            | 243                           | 60%        | \$34,851,747           | 7                            | 2%         | \$17,306,755           | 2                        | 0%         | \$993,060              | 252                     | 63%        | \$53,151,562            |
| Town of Oriental              | 1,378          | 1,023                         | 74%        | \$127,108,484          | 96                           | 7%         | \$23,497,988           | 13                       | 1%         | \$5,921,274            | 1,132                   | 82%        | \$156,527,746           |
| Town of Stonewall             | 227            | 199                           | 88%        | \$15,518,966           | 20                           | 9%         | \$3,632,797            | 6                        | 3%         | \$5,564,311            | 225                     | 99%        | \$24,716,074            |
| Town of Vandemere             | 192            | 163                           | 85%        | \$14,770,356           | 4                            | 2%         | \$1,115,718            | 14                       | 7%         | \$3,415,315            | 181                     | 94%        | \$19,301,389            |
| <b>Subtotal Pamlico</b>       | <b>10,920</b>  | <b>8,433</b>                  | <b>77%</b> | <b>\$779,438,458</b>   | <b>753</b>                   | <b>7%</b>  | <b>\$178,995,976</b>   | <b>174</b>               | <b>2%</b>  | <b>\$101,880,438</b>   | <b>9,360</b>            | <b>86%</b> | <b>\$1,060,314,872</b>  |
| <b>Region Total</b>           | <b>158,620</b> | <b>74,828</b>                 | <b>47%</b> | <b>\$9,605,582,426</b> | <b>5,996</b>                 | <b>4%</b>  | <b>\$3,167,057,977</b> | <b>1,331</b>             | <b>1%</b>  | <b>\$1,605,746,535</b> | <b>82,155</b>           | <b>52%</b> | <b>\$14,378,386,944</b> |

Source: NCEM Risk Management Tool

**ENVIRONMENT**

Wildfires have the potential to destroy forest and forage resources and damage natural habitats. Wildfire can also result in contamination of drinking water sources, both surface and in-wells, as well as damaging agricultural crops on private land. Wildfires are part of a natural process, however, and the environment will return to its original state in time.

**CONSEQUENCE ANALYSIS**

Table 4.109 summarizes the potential detrimental consequences of wildfire.

**Table 4.109 - Consequence Analysis - Wildfire**

| <b>Category</b>   | <b>Consequences</b>  |
|---|--|
| Public  | In addition to the potential for fatalities, the subsequent decline in air quality from wildfires, present health hazards among the region. Community exposure to wildfire smoke can lead to severe health complications. Particularly vulnerable groups comprise of children, the elderly, individuals with respiratory issues, or those with heart disease. Even individuals in good health may encounter minor symptoms like sore throats and itchy eyes.   |
| Responders  | Ensuring public and firefighter safety remain the foremost concern in all wildland fire management endeavors. Wildfires pose genuine threats to the well-being and safety of emergency responders. In rural regions many firefighters are “retained”, signifying their part-time status and their readiness to be called away from their regular occupations to respond to fires.  |
| Continuity of Operations (including Continued Delivery of Services) | Wildfire incidents can lead to power outages that may disrupt operations. Fallen trees, damaged power lines, and impaired road conditions can hinder access to vital facilities and emergency equipment.   |
| Property, Facilities and Infrastructure                             | Wildfires can have significant repercussions on community infrastructure, ranging from structural harm or complete destruction to endangering individuals within these facilities, disrupting transportation, shipping, and evacuation operations, and halting facility operations and essential services. Restoring basic services is critical and is costly. Direct impacts to municipal water supply may occur through contamination of ash and debris during the fire, destruction of aboveground distribution lines, and soil erosion or debris deposits into waterways after the fire. Utilities and communications repairs are also necessary for equipment damaged by a fire. This includes power lines, transformers, cell phone towers, and phone lines. |
| Environment   | Wildfires inflict harm on the natural environment by destroying vegetation and animal habitats. Subsequently, the risk of floods and debris flows escalates as wildfires expose bare ground and eliminate vegetation cover. Moreover, the secondary repercussions of wildfires, such as erosion, landslides, the introduction of invasive species, and alterations in water quality, frequently surpass the initial damage cause by fire itself.   |
| Economic Condition of the Jurisdiction                              | Wildfires can have significant short-term and long-term effects on the local economy. This hazard can potentially diminish recreation and tourism in areas affected by the extreme fire danger. Extensive damage to trees can significantly disrupt the timber supply, resulting in a short-term surplus due   |



**SECTION 4: RISK ASSESSMENT**

| Category   | Consequences   |
|--|--|
|  | to timber salvage operations and a longer-term decrease as the trees regenerate.<br>However, wildfires can have positive effects on local economies. Economic activity generated during fire suppression and post-fire rebuilding efforts can contribute positively to the community. This may include forestry work, such as constructing fire lines and other defense, as well as providing firefighting teams with essential supplies like food, ice, temporary shelters, and laundry facilities. |
| Public Confidence in the Jurisdiction’s Governance | Wildfire incidents can undermine public confidence due to their highly visible impacts on the community. Public confidence in the jurisdiction’s governance may be influenced by actions taken pre-disaster to mitigate and prepare for impacts, including the amount of public education provided; efforts to provide warning to residents; response efforts; and recovery.   |

**HAZARD SUMMARY BY JURISDICTION**

The following table summarizes wildfire hazard risk by jurisdiction. Wildfire warning time and duration do not vary by jurisdiction. Spatial extent ratings were based on the proportion of area within the WUI. Impact ratings were based on fire intensity data from SWRA. Jurisdictions with significant clusters of moderate to high fire intensity were assigned a rating of 3; all others were assigned a rating of 2. Probability ratings were determined based on burn probability data from SWRA. Jurisdictions with clusters of moderate burn probability were assigned a rating of 3; all others were assigned a probability of 2.

| Jurisdiction              | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|---------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Beaufort County           | 3           | 3      | 2              | 4            | 3        | 2.9   | M        |
| City of Washington        | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Aurora            | 3           | 3      | 3              | 4            | 3        | 3.1   | H        |
| Town of Bath              | 2           | 3      | 3              | 4            | 3        | 2.8   | M        |
| Town of Belhaven          | 3           | 2      | 3              | 4            | 3        | 2.8   | M        |
| Town of Chocowinity       | 2           | 3      | 3              | 4            | 3        | 2.8   | M        |
| Town of Pantego           | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Washington Park   | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Carteret County           | 3           | 2      | 3              | 4            | 3        | 2.8   | M        |
| Town of Atlantic Beach    | 2           | 3      | 3              | 4            | 3        | 2.8   | M        |
| Town of Beaufort          | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Bogue             | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Cape Carteret     | 3           | 3      | 3              | 4            | 3        | 3.1   | H        |
| Town of Cedar Point       | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Emerald Isle      | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Indian Beach      | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Morehead City     | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Newport           | 3           | 2      | 3              | 4            | 3        | 2.8   | M        |
| Town of Peletier          | 2           | 3      | 3              | 4            | 3        | 2.8   | M        |
| Town of Pine Knoll Shores | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |

**SECTION 4: RISK ASSESSMENT**

| Jurisdiction            | Probability | Impact | Spatial Extent | Warning Time | Duration | Score | Priority |
|-------------------------|-------------|--------|----------------|--------------|----------|-------|----------|
| Craven County           | 3           | 2      | 3              | 4            | 3        | 2.8   | M        |
| City of Havelock        | 3           | 2      | 3              | 4            | 3        | 2.8   | M        |
| City of New Bern        | 3           | 2      | 3              | 4            | 3        | 2.8   | M        |
| Town of Bridgeton       | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Cove City       | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Dover           | 3           | 2      | 3              | 4            | 3        | 2.8   | M        |
| Town of River Bend      | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Trent Woods     | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Vanceboro       | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Pamlico County          | 3           | 3      | 3              | 4            | 3        | 3.1   | H        |
| Town of Alliance        | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Arapahoe        | 2           | 3      | 3              | 4            | 3        | 2.8   | M        |
| Town of Bayboro         | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Grantsboro      | 3           | 3      | 3              | 4            | 3        | 3.1   | H        |
| Town of Mesic           | 3           | 3      | 3              | 4            | 3        | 3.1   | H        |
| Town of Minnesott Beach | 3           | 3      | 3              | 4            | 3        | 3.1   | H        |
| Town of Oriental        | 3           | 2      | 3              | 4            | 3        | 2.8   | M        |
| Town of Stonewall       | 2           | 2      | 3              | 4            | 3        | 2.5   | M        |
| Town of Vandemere       | 2           | 3      | 3              | 4            | 3        | 2.8   | M        |

### 4.5.10 INFECTIOUS DISEASE

#### HAZARD BACKGROUND

Public health emergencies can take many forms—disease epidemics, large-scale incidents of food or water contamination, or extended periods without adequate water and sewer services. There can also be harmful exposure to chemical, radiological, or biological agents, and largescale infestations of disease-carrying insects or rodents. The first part of this section focuses on emerging public health concerns and potential pandemics, while the second part addresses natural and human-caused air and water pollution.

Public health emergencies can occur as primary events by themselves, or they may be secondary to another disaster or emergency, such as tornado, flood, or hazardous material incident. For more information on those particular incidents, see Sections 4.5.8 (Tornado & Thunderstorm) and 4.5.5 (Flood). The common characteristic of most public health emergencies is that they adversely impact, or have the potential to adversely impact, a large number of people. Public health emergencies can be worldwide or localized in scope and magnitude.

The primary communicable, or infectious, disease addressed within this plan is influenza:

**Influenza** - Whether natural or manmade, health officials say the threat of a dangerous new strain of influenza (flu) virus in pandemic proportions is a very real possibility in the years ahead. Unlike most illnesses, the flu is especially dangerous because it is spread through the air. A classic definition of influenza is a respiratory infection with fever. Each year, flu infects humans and spreads around the globe. There are three types of influenza virus: Types A, B, and C. Type A is the most common, most severe, and the primary cause of flu epidemics. Type B cases occur sporadically and sometimes as regional or widespread epidemics. Type C cases are quite rare and hence sporadic, but localized outbreaks have occurred. Seasonal influenza usually is treatable, and the mortality rate remains low. Each year, scientists estimate which particular strain of flu is likely to spread, and they create a vaccine to combat it. A flu pandemic occurs when the virus suddenly changes or mutates and undergoes an —antigenic shift, permitting it to attach to a person’s respiratory system and leave the body’s immune system defenseless against the invader.

Additional diseases of public health concern include tuberculosis, Smallpox, St. Louis Encephalitis, Meningitis, Lyme disease, West Nile, SARS, Zika, and Ebola. These communicable diseases are introduced within this plan, but full vulnerability analyses are not included at this time.

**Tuberculosis** - Tuberculosis, or TB, is the leading cause of infectious disease worldwide. It is caused by a bacteria called *Mycobacterium tuberculosis* that most often affects the lungs. TB is an airborne disease spread by coughing or sneezing from one person to another. The World Health Organization (WHO) estimates that one-third of the world’s population, approximately two billion people, has latent TB, which means people have been infected by TB bacteria but are not yet ill with the disease and cannot transmit the disease. In 2022, an estimated 10.6 million people fell ill with TB and 1.3 million died from the disease (including 167,000 people with HIV). Over 80% of TB deaths occur in low- and middle- income countries.

**Smallpox** - Smallpox is a contagious, sometimes fatal, infectious disease. There is no specific treatment for smallpox disease, and the only prevention is vaccination. Smallpox is caused by the variola virus that emerged in human populations thousands of years ago. It is generally spread by face- to-face contact or by direct contact with infected bodily fluids or contaminated objects (such as bedding or clothing). A person with smallpox is sometimes contagious with onset of fever, but the person becomes most contagious with the onset of rash. The rash typically develops into sores that spread over all parts of the body. The infected person remains contagious until the last smallpox scab is gone. Smallpox outbreaks have occurred periodically for thousands of years, but the disease is now largely eradicated after a

worldwide vaccination program was implemented. After the disease was eliminated, routine vaccination among the general public was stopped. The last case of smallpox in the United States was in 1949.

**St. Louis Encephalitis** - In the United States, the leading type of epidemic flaviviral Encephalitis is St. Louis encephalitis (SLE), which is transmitted by mosquitoes that become infected by feeding on birds infected with the virus. SLE is the most common mosquito-transmitted pathogen in the United States. There is no evidence to suggest that the virus can be spread from person to person.

**Meningitis**- Meningitis is an infection of fluid that surrounds a person's spinal cord and brain. High fever, headache, and stiff neck are common symptoms of meningitis, which can develop between several hours to one to two days after exposure. Meningitis can be caused by either a viral or bacterial infection; however, a correct diagnosis is critically important, because treatments for the two varieties differ. Meningitis is transmitted through direct contact with respiratory secretions from an infected carrier. Primary risk groups include infants and young children, household contact with patients, and refugees. In the United States, periodic outbreaks continue to occur, particularly among adolescents and young adults. About 2,600 people in the United States get the disease each year. Generally, 10 to 14 percent of cases are fatal, and 11 to 19 percent of those who recover suffer from permanent hearing loss, mental retardation, loss of limbs, or other serious effects. Two vaccines are available in the United States.

**Lyme Disease** - Lyme disease was named after the town of Lyme, Connecticut, where an unusually large frequency of arthritis-like symptoms was observed in children in 1977. It was later found that the problem was caused by bacteria transmitted to humans by infected deer ticks, causing an average of more than 16,000 reported infections in the United States each year (however, the disease is greatly under-reported). Lyme disease bacteria are not transmitted from person to person. Following a tick bite, 80 percent of patients develop a red —bullseye rash accompanied by tiredness, fever, headache, stiff neck, muscle aches, and joint pain. If untreated, some patients may develop arthritis, neurological abnormalities, and cardiac problems, weeks to months later. Lyme disease is rarely fatal. During early stages of the disease, oral antibiotic treatment is generally effective, while intravenous treatment may be required in more severe cases.

**West Nile Virus** - West Nile virus is a flavivirus spread by infected mosquitoes and is commonly found in Africa, West Asia, and the Middle East. It was first documented in the United States in 1999. Although it is not known where the U.S. virus originated, it most closely resembles strains found in the Middle East. It is closely related to St. Louis encephalitis and can infect humans, birds, mosquitoes, horses, and other mammals.

Most people who become infected with West Nile virus will have either no symptoms or only mild effects. However, on rare occasions, the infection can result in severe and sometimes fatal illness. There is no evidence to suggest that the virus can be spread from person to person.

An abundance of dead birds in an area may indicate that West Nile virus is circulating between the birds and mosquitoes in that area. Although birds are particularly susceptible to the virus, most infected birds survive. The continued expansion of West Nile virus in the United States indicates that it is permanently established in the Western Hemisphere.

**Coronaviruses** – Coronaviruses are a large family of viruses found in both animals and humans and are known to cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS), Severe Acute Respiratory Syndrome (SARS), and Novel Coronavirus (COVID- 19). Coronaviruses can cause respiratory infections and can lead to serious illnesses, like pneumonia, and can be deadly. Typical coronavirus symptoms include fever, cough, headache, runny nose, and sore throat. MERS was first reported in 2012 in Saudi Arabia and spread to more than 25 countries. It produced symptoms that often progressed to pneumonia and 30-40 percent of cases were fatal. SARS emerged in 2002 and spread to more than two dozen countries. It caused acute respiratory distress and had a mortality rate of about 10 percent.

The most significant recent coronavirus, COVID-19, first emerged in Wuhan, China in 2019 and rapidly spread across the world. According to CDC data, as of February 2022, there had been over 78.5 million cases of COVID-19 reported in the United States. COVID-19 spreads when an infected person breathes out droplets and very small particles that contain the virus. These droplets and particles can be breathed in by other people or land on their eyes, noses, or mouth. Symptoms include fever, cough, shortness of breath, fatigue, loss of taste and smell, and more. Symptoms range from mild to severe illness and typically appear between 2-14 days after exposure to the virus.

**Severe Acute Respiratory Syndrome** - Severe acute respiratory syndrome (SARS) is a respiratory illness that has recently been reported in Asia, North America, and Europe. Although the cause of SARS is currently unknown, scientists have detected in SARS patients a previously unrecognized coronavirus that appears to be a likely source of the illness. In general, humans infected with SARS exhibit fevers greater than 100.4 F, headaches, an overall feeling of discomfort, and body aches. Some people also experience mild respiratory symptoms. After two to seven days, SARS patients may develop a dry cough and have trouble breathing. The primary way that SARS appears to spread is by close person-to-person contact; particularly by an infected person coughing or sneezing contaminated droplets onto another person, with a transfer of those droplets to the victim's eyes, nose, or mouth.

**Zika Virus** - Discovered in the Zika forest of Uganda in 1947, the Zika virus is a member of the flavivirus family. It is transmitted to humans through the bite of an infected *Aedes* species mosquito (*Ae. aegypti* and *Ae. albopictus*). Zika virus can also be transmitted from an infected pregnant woman to her baby during pregnancy and can result in serious birth defects, including microcephaly. Less commonly, the virus can be spread through intercourse or blood transfusion. However, most people infected with the Zika virus do not become sick.

**Ebola** - Previously known as Ebola hemorrhagic fever, is a rare and deadly disease caused by infection with one of the Ebola virus species. It was first discovered in 1976 near the Ebola River in what is now the Democratic Republic of the Congo. Since then, outbreaks have appeared sporadically in Africa.

*Warning Time: 1 – More than 24 hours*

*Duration: 4 – More than one week*

### LOCATION

Infectious disease outbreaks can occur anywhere in the planning area, especially where there are groups of people in close quarters.

*Spatial Extent: 4 – Large*

### EXTENT

When on an epidemic scale, diseases can lead to high infection rates in the population causing isolation, quarantine, and potential mass fatalities. An especially severe influenza pandemic or other major disease outbreak could lead to high levels of illness, death, social disruption, and economic loss. Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines.

*Impact: 3 – Critical*

Table 4.110 describes the World Health Organization's six main phases to a pandemic flu as part of their planning guidance.

**Table 4.110 – World Health Organization's Pandemic Flu Phases**

| Phase                | Description  |
|----------------------|--|
| 1                    | No animal influenza virus circulating among animals have been reported to cause infection in humans.   |
| 2                    | An animal influenza virus circulating in domesticated or wild animals is known to have caused infection in humans and is therefore considered a specific potential pandemic threat.  |
| 3                    | An animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people, but has not resulted in human-to-human transmission sufficient to sustain community-level breakouts. |
| 4                    | Human-to-human transmission of an animal or human-animal influenza reassortant virus able to sustain community-level breakouts has been verified.  |
| 5                    | The same identified virus has caused sustained community-level outbreaks in two or more countries in one WHO region.   |
| 6                    | In addition to the criteria defined in Phase 5, the same virus has caused sustained community-level outbreaks in at least one other country in another WHO region.   |
| Post-Peak Period     | Levels of pandemic influenza in most countries with adequate surveillance have dropped below peak levels.  |
| Post-Pandemic Period | Levels of influenza activity have returned to levels seen for seasonal influenza in most countries with adequate surveillance.   |

Source: World Health Organization

## HISTORICAL OCCURRENCES

### *PUBLIC HEALTH EMERGENCIES – INFLUENZA PANDEMICS*

Since the early 1900s, four lethal pandemics have swept the globe: Spanish Flu of 1918-1919; Asian Flu of 1957-1958; Hong Kong Flu of 1968-1969; and Swine Flu of 2009-2010. The Spanish Flu was the most severe pandemic in recent history. The number of deaths was estimated to be 50-100 million worldwide and 675,000 in the United States. Its primary victims were mostly young, healthy adults. The 1957 Asian Flu pandemic killed about 70,000 people in the United States, mostly the elderly and chronically ill. The 1968 Hong Kong Flu pandemic killed 34,000 Americans. The 2009 Swine Flu caused 12,469 deaths in the United States. These historic pandemics are further defined in the following paragraphs along with several “pandemic scares”.

#### **SPANISH FLU (H1N1 VIRUS) OF 1918-1919**

In 1918, when World War I was in its fourth year, another threat began that rivaled the war itself as the greatest killer in human history. The Spanish Flu swept the world in three waves during a two-year period, beginning in March 1918 with a relatively mild assault.

The first reported case occurred at Camp Funston (Fort Riley), Kansas, where 60,000 soldiers trained to be deployed overseas. Within four months, the virus traversed the globe, as American soldiers brought the virus to Europe. The first wave sickened thousands of people and caused many deaths (46 died at Camp Funston), but it was considered mild compared to what was to come. The second and deadliest wave struck in the autumn of 1918 and killed millions. At Camp Funston alone, there were 14,000 cases and 861 deaths reported during the first three weeks of October 1918.

Outbreaks caused by a new variant exploded almost simultaneously in many locations including France, Sierra Leone, Boston, and New York City, where more than 20,000 people died that fall. The flu gained

its name from Spain, which was one of the hardest hit countries. From there, the flu went through the Middle East and around the world, eventually returning to the United States along with the troops.

Of the 57,000 Americans who died in World War I, 43,000 died as a result of the Spanish Flu. At one point, more than 10 percent of the American workforce was bedridden. By a conservative estimate, a fifth of the human race suffered the fever and aches of influenza between 1918 and 1919 and 20 million people died. At the height of the flu outbreak during the winter of 1918-1919, at least 20% of North Carolinians were infected by the disease. Ultimately, 10,000 citizens of the state succumbed to this disease.

#### ASIAN FLU (H2N2 VIRUS) OF 1957-1958

This influenza pandemic was first identified in February 1957 in the Far East. Unlike the Spanish Flu, the 1957 virus was quickly identified, and vaccine production began in May 1957. A number of small outbreaks occurred in the United States during the summer of 1957, with infection rates highest among school children, young adults, and pregnant women; however, the elderly had the highest rates of death. A second wave of infections occurred early the following year, which is typical of many pandemics.

#### HONG KONG FLU (H3N2 VIRUS) OF 1968-1969

This influenza pandemic was first detected in early 1968 in Hong Kong. The first cases in the United States were detected in September 1968, although widespread illness did not occur until December. This became the mildest pandemic of the twentieth century, with those over the age of 65 the most likely to die. People infected earlier by the Asian Flu virus may have developed some immunity against the Hong Kong Flu virus. Also, this pandemic peaked during school holidays in December, limiting student-related infections.

#### PANDEMIC FLU THREATS: SWINE FLU OF 1976, RUSSIAN FLU OF 1977, AND AVIAN FLU OF 1997 AND 1999

Three notable flu scares occurred in the twentieth century. In 1976, a swine-type influenza virus appeared in a U.S. military barracks (Fort Dix, New Jersey). Scientists determined it was an antigenically drifted variant of the feared 1918 virus. Fortunately, a pandemic never materialized, although the news media made a significant argument about the need for a Swine Flu vaccine.

In May 1977, influenza viruses in northern China spread rapidly and caused epidemic disease in children and young adults. By January 1978, the virus, subsequently known as the Russian Flu, had spread around the world, including the United States. A vaccine was developed for the virus for the 1978–1979 flu season. Because illness occurred primarily in children, this was not considered a true pandemic.

In March 1997, scores of chickens in Hong Kong's rural New Territories began to die—6,800 on three farms alone. The Avian Flu virus was especially virulent, and made an unusual jump from chickens to humans. At least 18 people were infected, and six died in the outbreak. Chinese authorities acted quickly to exterminate over one million chickens and successfully prevented further spread of the disease. In 1999, a new avian flu virus appeared. The new virus caused illness in two children in Hong Kong. Neither of these avian flu viruses started pandemics.

#### SWINE FLU (H1N1 VIRUS) OF 2009-2010

This influenza pandemic emerged from Mexico in 2009. The first U.S. case of H1N1, or Swine Flu, was diagnosed on April 15, 2009. The U.S. government declared H1N1 a public health emergency on April 26. By June, approximately 18,000 cases of H1N1 had been reported in the United States. A total of 74 countries were affected by the pandemic.

The CDC estimates that 43 million to 89 million people were infected with H1N1 between April 2009 and April 2010. There were an estimated 8,870 to 18,300 H1N1 related deaths. On August 10, 2010, the World Health Organization (WHO) declared an end to the global H1N1 flu pandemic.

**CORONAVIRUS DISEASE (COVID-19), 2019-2024**

COVID-19 was caused by severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2). First identified in Wuhan, China in December 2019, the virus quickly spread throughout China and then globally. In the United States, COVID-19 was first identified in late January in Washington State and rapidly spread throughout the Country, with large epicenters on both the east and west coasts. On March 13, 2020 the U.S. enters a nationwide emergency and by March 15, 2020 U.S. states begin to shut down to prevent the spread of COVID-19. Almost a year later the U.S. has administered over 100 million vaccinations. In June 2021 the first major variant, the Delta variant, becomes dominant in the U.S. which kicks off a third wave of infections during the summer of 2021. By December 20, 2021, Omicron, the second and most dominant variant in the U.S., had been detected in most U.S. states and territories. The Omicron variant spread more easily than the original virus that caused COVID-19 and the Delta variant.

According to the Johns Hopkins Coronavirus Resource Center, from the start of the pandemic to March 2023, there were over 103 million confirmed cases of COVID-19 in the U.S. resulting in over 1.1 million deaths. In North Carolina, there were over 3.4 million confirmed cases and 28,432 deaths due to COVID-19. Johns Hopkins stopped collecting data as of March 10, 2023. The COVID-19 virus has transitioned to endemic but maintains dual seasonality, with cases peaking twice a year.

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**PUBLIC HEALTH EMERGENCIES - OTHER PANDEMICS****ST. LOUIS ENCEPHALITIS, 1964-2005**

Between 1964 and 2005, there were 4,651 confirmed cases of SLE in the United States. It should be noted, however, that less than 1 percent of SLE infections are clinically apparent, so the vast majority of infections remain undiagnosed. Illnesses range from mild headaches and fever to convulsions, coma, and paralysis. The last major outbreak of SLE occurred in the Midwest from 1974 to 1977, when over 2,500 cases were reported in 35 states. The most recent outbreak of St. Louis encephalitis was in 1999 in New Orleans, Louisiana, with 20 reported cases. The disease is generally milder in children than in adults, with the elderly at highest risk for severe illness and death. Approximately 3 to 30 percent of cases are fatal; no vaccine against SLE exists. In 2014, two U.S. cases were reported and were the first human cases since 2002.

**MENINGITIS, 1996-1997, 2005**

During 1996 and 1997, 213,658 cases of meningitis were reported, with 21,830 deaths, in Africa. According to the North Carolina Division of Public Health, an average of 20 reported cases of Meningitis occurred annually between 2005-2013 following the initial outbreak. In 2023, the CDC confirmed 438 cases of meningitis across the U.S. which is the largest number of cases reported since 2013.

**LYME DISEASE, 2015**

In the United States, Lyme disease is mostly found in the northeastern, mid-Atlantic, and upper north-central regions, and in several counties in northwestern California. In 2019, 93-percent of confirmed Lyme Disease cases were reported from 14 states: Connecticut, Delaware, Maine, Maryland, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Wisconsin. Lyme disease is the most commonly reported vector-borne illness in the United States. According to the CDC, recent estimates based on insurance records suggest that approximately 476,000 Americans are diagnosed and treated with Lyme disease each year. This disease does not occur nationwide and is concentrated heavily in the northeast and upper Midwest. Between 2018 to 2022 the average incidence rate of Lyme disease in North Carolina was 2.82 confirmed and probable cases per 100,000 residents, which is significantly lower than the national average. In 2022, Beaufort County had one confirmed case of Lyme Disease within the Pamlico Region while in 2021, Craven County had two confirmed cases. These were the only confirmed cases reported by the CDC in recent years for the Pamlico Region.



**SEVERE ACUTE RESPIRATORY SYNDROME, 2003**

During November 2002-July 2003, a total of 8,098 probable SARS cases were reported to the World Health Organization (WHO) from 29 countries. In the United States, only 8 cases had laboratory evidence of infection. Since July 2003, when SARS transmission was declared contained, active global surveillance for SARS disease has detected no person-to-person transmission. CDC has therefore archived the case report summaries for the 2003 outbreak. Across North Carolina, there was one confirmed SARS case – a man in Orange County tested positive in June 2003.

**ZIKA VIRUS, 2015**

In May 2015, the Pan American Health Organization issued an alert noting the first confirmed case of a Zika virus infection in Brazil. Since that time, Brazil and other Central and South America countries and territories, as well as the Caribbean, Puerto Rico, and the U.S. Virgin Islands have experienced ongoing Zika virus transmission. In August 2016, the Centers for Disease Control and Prevention (CDC) issued guidance for people living in or traveling to a 1-square-mile area Miami, Florida, identified by the Florida Department of Health as having mosquito-borne spread of Zika. In October 2016, the transmission area was expanded to include a 4.5-square-mile area of Miami Beach and a 1-square mile area of Miami-Dade County. In addition, all of Miami-Dade County was identified as a cautionary area with an unspecified level of risk. As of the end of 2018, the CDC reported 74 cases of Zika across the United States. As of November 2024, there are no current local transmission of Zika virus in the continental U.S. or territories. The last cases of local Zika transmission by mosquitos in the continental U.S. were in Florida and Texas in 2016-17 and no reported cases from U.S. territories since 2019.

**EBOLA, 2014-2016**

Most recently, in March 2014, West Africa experienced the largest outbreak of Ebola in history. Widespread transmission was found in Liberia, Sierra Leone, and Guinea with the number of cases totaling 28,616 and the number of deaths totaling 11,310. In the United States, four cases of Ebola were confirmed in 2014 including a medical aid worker returning to New York from Guinea, two healthcare workers at Texas Presbyterian Hospital who provided care for a diagnosed patient, and the diagnosed patient who traveled to Dallas, Texas from Liberia. All three healthcare workers recovered. The diagnosed patient passed away in October 2014. In March 2016, the WHO terminated the public health emergency for the Ebola outbreak in West Africa.

**PROBABILITY OF FUTURE OCCURRENCE**

It is impossible to predict when the next pandemic will occur or its impact. The CDC continually monitors and assesses pandemic threats and prepares for an influenza pandemic. Novel influenza A viruses with pandemic potential include Asian lineage avian influenza A (H5N1) and (H7N9) viruses. These viruses have all been evaluated using the Influenza Risk Assessment Tool (IRAT) to assess their potential pandemic risk. Because the CDC cannot predict how severe a future pandemic will be, advance planning is needed at the national, state and local level; this planning is done through public health partnerships at the national, state and local level.

Today, a much larger percentage of the world's population is clustered in cities, making them ideal breeding grounds for epidemics. Additionally, the explosive growth in air travel means the virus could literally be spread around the globe within hours. Under such conditions, there may be very little warning time. Most experts believe we will have just one to six months between the time that a dangerous new influenza strain is identified and the time that outbreaks begin to occur in the United States. Outbreaks are expected to occur simultaneously throughout much of the nation, preventing shifts in human and material resources that normally occur with other natural disasters. These and many other aspects make influenza pandemic unlike any other public health emergency or community disaster.

*Probability: 2 – Possible*

## CLIMATE CHANGE

According to the U.S. Global Change Research Program, the influences of climate change on public health is significant and varied. The influences range from the clear threats of temperature extremes and severe storms to less obvious connections related to insects. Climate and weather can also affect water and food quality in particular areas, with implications for public health.

Hot days can be unhealthy—even dangerous. High air temperatures can cause heat stroke and dehydration, and affect people’s cardiovascular and nervous systems. Cities are vulnerable to heat waves, because many houses and apartments lack air conditioning, and urban areas are typically warmer than their rural surroundings. In recent decades, severe heat waves have killed hundreds of people across the State. Heat stress is expected to increase as climate change brings hotter summer temperatures and more humidity. Certain people are especially vulnerable, including children, the elderly, the sick, and the poor.

Higher temperatures and wetter conditions tend to increase mosquito and tick activity, leading to an increased risk of zoonotic diseases. Mosquitos are known to carry diseases such as West Nile virus (WNV), La Crosse/California encephalitis, Jamestown Canyon virus, St. Louis encephalitis, and Eastern equine encephalitis. The two major concerns associated with warmer and wetter conditions are that the mosquito species already found in North Carolina and the diseases that they carry will become more prevalent, and that new species carrying unfamiliar diseases will start to appear for the first time.

Warmer winters with fewer hard freezes in areas that already see WNV-carrying mosquitos are likely to observe both a higher incidence of WNV and a longer WNV season, ultimately leading to an increase in human cases. Non-native mosquito species may move into North Carolina if the climate becomes more suitable for them, bringing with them diseases such as Jamestown Canyon virus, Chikungunya, and Dengue Fever.

Ticks are also well-known disease vectors in North Carolina, carrying pathogens such as Lyme disease, anaplasmosis, Ehrlichiosis, Powassan virus, and Babesiosis. Warmer, wetter weather can lead to an increase in algal blooms and declining beach health. An increase in flood events may also be associated with an increased incidence of mold problems in homes and businesses, as well as contamination of wells and surface waters due to sewer overflows and private septic system failures.

If these predictions come true, communities must contend with the human health impacts related to the increased prevalence of infectious diseases, heat waves, and changes in air and water quality. Public health officials will need to focus on spreading information and enacting pest and disease reduction. Flood prone communities will need to focus on continuously improving flood controls and mitigation strategies, including restricting building and chemical storage in floodplains, upgrading well and septic requirements, and providing water testing kits to residents.

## VULNERABILITY ASSESSMENT

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### *METHODOLOGIES AND ASSUMPTIONS*

Vulnerability to infectious disease was assessed based on past occurrences nationally and internationally as well as publicly available information on these vulnerabilities, as well as attacks occurring in the region.

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### *PEOPLE*

Disease spread and mortality is affected by a variety of factors, including virulence, ease of spread, aggressiveness of the virus and its symptoms, resistance to known antibiotics and environmental factors. While every pathogen is different, diseases normally have the highest mortality rate among the very young, the elderly or those with compromised immune systems. As an example, the unusually deadly

## SECTION 4: RISK ASSESSMENT

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1918 H1N1 influenza pandemic had a mortality rate of 20 percent. If an influenza pandemic does occur, it is likely that many age groups would be seriously affected. The greatest risks of hospitalization and death—as seen during the last two pandemics in 1957 and 1968 as well as during annual outbreaks of influenza—will be to infants, the elderly, and those with underlying health conditions. However, in the 1918 pandemic, most deaths occurred in young adults. Few people, if any, would have immunity to a new virus.

Approximately twenty percent of people exposed to West Nile Virus through a mosquito bite develop symptoms related to the virus; it is not transmissible from one person to another. Preventive steps can be taken to reduce exposure to mosquitos carrying the virus; these include insect repellent, covering exposed skin with clothing and avoiding the outdoors during twilight periods of dawn and dusk, or in the evening when the mosquitos are most active.

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### PROPERTY

For the most part, property itself would not be impacted by a human disease epidemic or pandemic. However, as concerns about contamination increase, property may be quarantined or destroyed as a precaution against spreading illness. Furthermore, staffing shortages could affect the function of critical facilities.

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### ENVIRONMENT

A widespread pandemic would not have an impact on the natural environment unless the disease was transmissible between humans and animals. However, affected areas could result in denial or delays in the use of some areas, and may require remediation.

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### CONSEQUENCE ANALYSIS

Table 4.111 summarizes the potential consequences of infectious disease.

**Table 4.111 – Consequence Analysis - Infectious Disease**

| Category  | Consequences  |
|---|---|
| Public  | Adverse impact expected to be severe for unprotected personnel and moderate to light for protected personnel.   |
| Responders  | Adverse impact expected to be severe for unprotected personnel and uncertain for trained and protected personnel, depending on the nature of the incident.  |
| Continuity of Operations (including Continued Delivery of Services) | Danger to personnel in the area of the incident may require relocation of operations and lines of succession execution. Disruption of lines of communication and destruction of facilities may extensively postpone delivery of services. |
| Property, Facilities and Infrastructure                             | Access to facilities and infrastructure in the area of the incident may be denied until decontamination completed.  |
| Environment   | Incident may cause denial or delays in the use of some areas. Remediation needed.   |
| Economic Condition of the Jurisdiction                              | Local economy and finances adversely affected, possibly for an extended period of time.   |
| Public Confidence in the Jurisdiction's Governance                  | Ability to respond and recover may be questioned and challenged if planning, response, and recovery not timely and effective.   |

### HAZARD SUMMARY BY JURISDICTION

The following table summarizes infectious disease hazard risk by jurisdiction. Infectious disease risk is uniform across the planning area; there is no variation in risk by jurisdiction.

| <b>Jurisdiction</b>      | <b>Probability</b> | <b>Impact</b> | <b>Spatial Extent</b> | <b>Warning Time</b> | <b>Duration</b> | <b>Score</b> | <b>Priority</b> |
|--------------------------|--------------------|---------------|-----------------------|---------------------|-----------------|--------------|-----------------|
| <i>All Jurisdictions</i> | 2                  | 3             | 4                     | 1                   | 4               | 2.8          | M               |

### 4.5.11 CYBER THREAT

#### HAZARD BACKGROUND

The State of North Carolina Hazard Mitigation Plan defines cyber attacks as “deliberate attacks on information technology systems in an attempt to gain illegal access to a computer, or purposely cause damage.” Cyber-attacks use malicious code to alter computer operations or data. The vulnerability of computer systems to attacks is a growing concern as people and institutions become more dependent upon networked technologies. The Federal Bureau of Investigation (FBI) reports that “cyber intrusions are becoming more commonplace, more dangerous, and more sophisticated,” with implications for private- and public-sector networks.

There are many types of cyber-attacks. Among the most common is a direct denial of service, or DDoS attack. This is when a server or website will be queried or pinged rapidly with information requests, overloading the system and causing it to crash.

Malware, or malicious software, can cause numerous problems once on a computer or network, from taking control of users’ machines to discreetly sending out confidential information. Ransomware is a specific type of malware that blocks access to digital files and demands a payment to release them. Hospitals, school districts, state and local governments, law enforcement agencies, businesses, and even individuals can be targeted by ransomware.

Cyber spying or espionage is the act of illicitly obtaining intellectual property, government secrets, or other confidential digital information, and often is associated with attacks carried out by professional agents working on behalf of a foreign government or corporation. According to cybersecurity firm Symantec, in 2016 “...the world of cyber espionage experienced a notable shift towards more overt activity, designed to destabilize and disrupt targeted organizations and countries.”

Major data breaches - when hackers gain access to large amounts of personal, sensitive, or confidential information - have become increasingly common. The Symantec report says more than seven billion identities have been exposed in data breaches over the last eight years. In addition to networked systems, data breaches can occur due to the mishandling of external drives, as has been the case with losses of some state employee data.

Cyber crime can refer to any of the above incidents when motivated primarily by financial gain or other criminal intent.

The most severe type of attack is cyber terrorism, which aims to disrupt or damage systems in order to cause fear, injury, and loss to advance a political agenda.

The North Carolina State Bureau of investigation’ Computer Crime Unit helps law enforcement across North Carolina solve sophisticated crimes involving digital evidence.

*Warning Time: 4 – Less than six hours*

*Duration: 4 – More than one week*

#### LOCATION

Cyber disruption events can occur and/or impact virtually any location in the state where computing devices are used. Incidents may involve a single location or multiple geographic areas. A disruption can have far-reaching effects beyond the location of the targeted system; disruptions that occur far outside the region can still impact people, businesses, and institutions within the region.

*Spatial Extent: 2 – Small*

## EXTENT

The extent or magnitude/severity of a cyber disruption event is variable depending on the nature of the event. A disruption affecting a small, isolated system could impact only a few functions/processes. Disruptions of large, integrated systems could impact many functions/processes, as well as many individuals that rely on those systems.

There is no universally accepted scale to quantify the severity of cyber-attacks. The strength of a DDoS attack is sometimes explained in terms of a data transmission rate. One of the largest DDoS disruptions ever, which brought down some of the internet’s most popular sites on October 21, 2016, peaked at 1.2 terabytes per second.

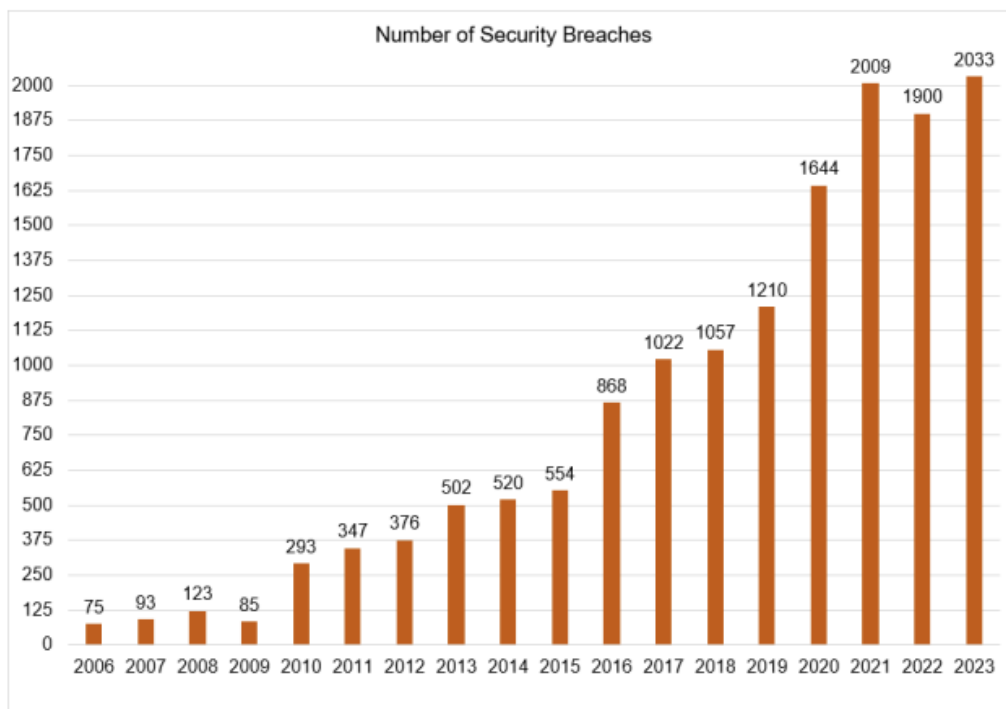
Data breaches are often described in terms of the number of records or identities exposed.

*Impact: 2 – Limited*

## HISTORICAL OCCURRENCES

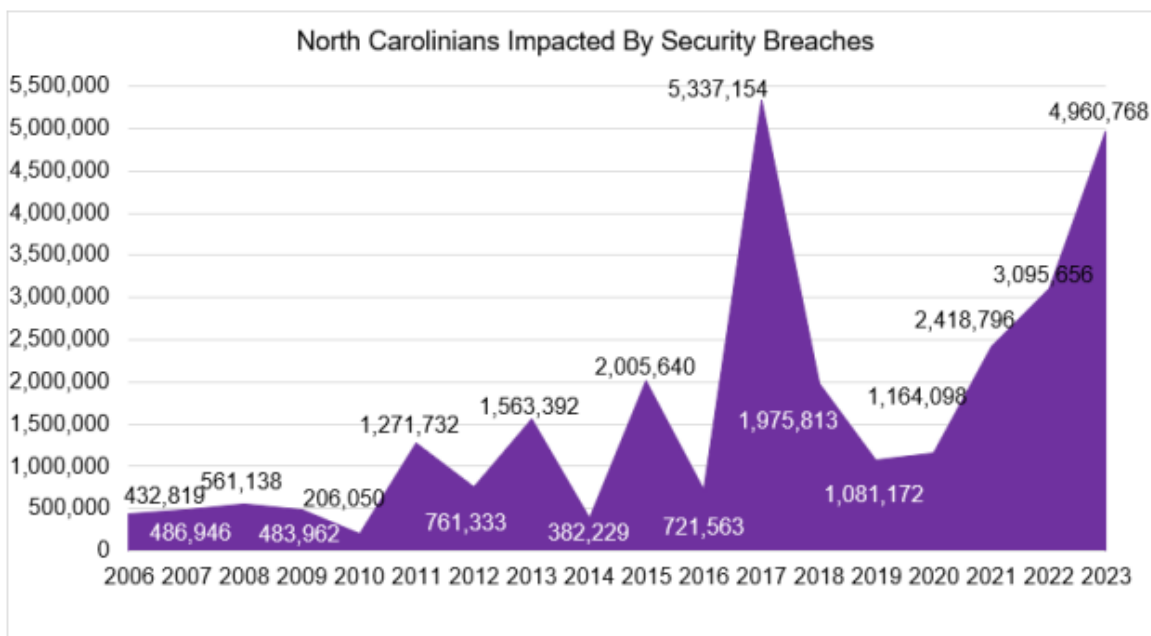
In North Carolina, businesses and organizations that experience data breaches are required to report the breach and the information that was compromised to the NC Department of Justice (DOJ). In 2023, the DOJ received 2,033 data breach notices from organizations according to their annual Data Breach Report. These breaches impacted more than 4.9 million North Carolinians – the second highest number of people impacted in a single year. Additionally, in 2023, hacking-related breaches were at a record high, causing 80 percent of all reported breaches. The report noted that most security breaches impacted general businesses (50%), healthcare industries (14%), and financial services/insurance (23%). It is common for these types of industries to collect many kinds of personal information, making them prime targets for hacking. Figure 4.51 and Figure 4.52 show the findings from the DOJ Annual Data Breach Report.

**Figure 4.51 – Number of Security Breaches in North Carolina**



Source: North Carolina Department of Justice

Figure 4.52 – North Carolinians Impacted by Security Breaches



Note: In 2017, Equifax experienced the largest-ever data breach in history affecting nearly 5 million North Carolinians, resulting in a high number of people having their information compromised that year.

Source: North Carolina Department of Justice

The Privacy Rights Clearinghouse, a nonprofit organization based in San Diego, maintains a timeline of 17,552 unique data breaches resulting from computer hacking incidents in the United States from 2002-2023. The database lists 359 data breaches on file in North Carolina, totaling 16,588,348 records breached since 2005. Local governments in the Pamlico Region have reported concerning data breaches in recent years and notable incidents. One of the largest breaches occurred in December of 2022 when Cott Systems, a cybersecurity company that works with local offices in the state, was shut down by a cyber attack that exposed important resident records from the county register of deeds office in Pamlico County.

### PROBABILITY OF FUTURE OCCURRENCE

Cyber attacks occur daily, but most have negligible impacts at the local or regional level. The possibility of a larger disruption affecting systems within the region is a constant threat, but it is difficult to quantify the exact probability due to such highly variable factors as the type of attack and intent of the attacker. Minor attacks against business and government systems have become a commonplace occurrence but are usually stopped with minimal impact. Similarly, data breaches impacting the information of residents of the Pamlico Region are almost certain to happen in coming years. While attacks targeting local government systems in the Pamlico Region have occurred in the last few years, no significant data breaches happened, and local governments restored their operating systems in a short period of time. Because minor breaches have occurred, major attacks or breaches are possible.

Probability: 2 – Possible

### VULNERABILITY ASSESSMENT

As discussed above, the impacts from a cyber attack vary greatly depending on the nature, severity, and success of the attack.

**METHODOLOGIES AND ASSUMPTIONS**

Vulnerability to cyber attacks was assessed based on past occurrences nationally and internationally as well as publicly available information on these vulnerabilities, as well as attacks occurring in the region.

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**PEOPLE**

Cyber-attacks can have a significant cumulative economic impact. According to the Internet Crime Complaint Center run by the Federal Bureau of Investigation, the U.S. experienced a loss of \$27.6 billion between the years 2018 to 2022. A major cyber-attack has the potential to undermine public confidence and build doubt in their government’s ability to protect them from harm.

Injuries or fatalities from cyber-attacks would generally only be possible from a major cyber terrorist attack against critical infrastructure.

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**PROPERTY**

Short of a major cyber terrorist attack against critical infrastructure, property damage from cyber attacks is typically limited to computer systems.

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**ENVIRONMENT**

Short of a major cyber terrorist attack against critical infrastructure, property damage from cyber attacks is typically limited to computer systems. A major cyber terrorism attack could potentially impact the environment by triggering a release of a hazardous materials, or by causing an accident involving hazardous materials by disrupting traffic-control devices.

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**CONSEQUENCE ANALYSIS**

Table 4.112 summarizes the potential consequences of a cyber threat.

**Table 4.112 – Consequence Analysis – Cyber Threat**

| <b>Category</b>   | <b>Consequences</b>  |
|---|--|
| Public  | Cyber attacks can impact personal data and accounts. Injuries or fatalities could potentially result from a major cyber terrorist attacks against critical infrastructure.   |
| Responders  | Cyber attacks can impact personal data and accounts. Injuries or fatalities could potentially result from a major cyber terrorist attacks against critical infrastructure.   |
| Continuity of Operations (including Continued Delivery of Services) | Agencies that rely on electronic backup of critical files are vulnerable. The delivery of services can be impacted since governments rely, to a great extent, upon electronic delivery of services.  |
| Property, Facilities and Infrastructure                             | Rare. Most attacks affect only data and computer systems. Sabotage of utilities and infrastructure from a major cyber terrorist attacks could potentially result in system failures that damage property on a scale equal with natural disasters. Facilities and infrastructure may become unusable as a result of a cyber-attack. |
| Environment   | Rare. A major attack could theoretically result in a hazardous materials release.  |



**SECTION 4: RISK ASSESSMENT**

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| <b>Category</b>                                    | <b>Consequences</b>  |
|--|--|
| Economic Condition of the Jurisdiction             | Could greatly affect the economy. In an electronic-based commerce society, any disruption to daily activities can have disastrous impacts to the economy. It is difficult to measure the true extent of the impact.              |
| Public Confidence in the Jurisdiction's Governance | The government's inability to protect critical systems or confidential personal data could impact public confidence. An attack could raise questions regarding the security of using electronic systems for government services. |

## 4.6 CONCLUSIONS ON HAZARD RISK

### PRIORITY RISK INDEX

As discussed in Section 4.3 Risk Assessment Methodology and Assumptions, the Priority Risk Index was used to rate each hazard on a set of risk criteria and determine an overall standardized score for each hazard. For some hazards, PRI ratings vary by jurisdiction. In these cases, the overall PRI rating reflects the highest risk that applies to the region. The conclusions drawn from this process are summarized below by classifying hazards into three categories—high, moderate, or low risk—based on the assigned risk value. General assumptions for high, moderate, and low risk hazards are described below, and hazard risk ratings are summarized in Table 4.113:

- **High Risk** – Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread.
- **Moderate Risk** – Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **Low Risk** – Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal. This is not a priority hazard.

**Table 4.113 – Summary of Hazard Risk Classification**

|                                     |   |
|-------------------------------------|---|
| <b>High Risk</b><br>(≥ 3.0)         | Excessive Heat<br>Hurricane & Coastal Hazards<br>Flooding<br>Tornadoes & Thunderstorms<br>Wildfire<br>Severe Winter Weather |
| <b>Moderate Risk</b><br>(2.0 - 2.9) | Drought<br>Dam & Levee Failure  |
| <b>Low Risk</b><br>(< 2.0)          | Earthquake  |

Table 4.114 summarizes the degree of risk assigned to each identified hazard using the PRI method. Where PRI ratings varied by jurisdiction, the range is shown. Additionally, where a hazard encompasses several sub-hazards, the PRI rating for each sub-hazard is provided.

**SECTION 4: RISK ASSESSMENT**

**Table 4.114 – Summary of PRI Results**

| <b>Hazard</b>   | <b>Probability</b>     | <b>Impact</b>    | <b>Spatial Extent</b> | <b>Warning Time</b>            | <b>Duration</b>  | <b>PRI Score</b> |
|---|------------------------|------------------|-----------------------|--------------------------------|------------------|------------------|
| Dam & Levee Failure <sup>1</sup>                        | Unlikely-Possible      | Limited-Critical | Negligible            | Less than 6 hrs                | Less than 1 week | 1.8-2.4          |
| Drought <sup>1</sup>                                    | Likely                 | Minor-Limited    | Large                 | More than 24 hrs               | More than 1 week | 2.5-2.8          |
| Earthquake  | Unlikely               | Minor            | Large                 | Less than 6 hrs                | Less than 6 hrs  | 1.9              |
| Excessive Heat <sup>1</sup>                             | Highly Likely          | Limited-Critical | Large                 | More than 24 hrs               | Less than 1 week | 3.0-3.3          |
| Flooding <sup>1</sup>                                   | Possible-Highly Likely | Critical         | Negligible-Large      | 6 to 12 hours                  | Less than 1 week | 2.3-3.5          |
| Hurricane <sup>2</sup>                                  | Highly Likely          | Catastrophic     | Large                 | More than 24 hrs               | Less than 1 week | 3.6              |
| Coastal Hazards (Erosion & Rip Current) <sup>1, 2</sup> | Unlikely-Highly Likely | Minor-Limited    | Negligible            | More than 24 hrs - 12-24 hours | Less than 1 week | 2.1-2.5          |
| Infectious Disease                                      | Possible               | Critical         | Large                 | More than 24 hrs               | More than 1 week | 2.8              |
| Severe Winter Weather                                   | Highly Likely          | Limited          | Large                 | More than 24 hrs               | Less than 1 week | 3.0              |
| Tornado <sup>3</sup>                                    | Likely                 | Critical         | Negligible            | Less than 6 hrs                | Less than 6 hrs  | 2.5              |
| Thunderstorm Wind <sup>1, 3</sup>                       | Highly Likely          | Limited-Critical | Moderate              | Less than 6 hrs                | Less than 6 hrs  | 2.9-3.2          |
| Lightning & Hail <sup>3</sup>                           | Highly Likely          | Minor            | Negligible            | Less than 6 hrs                | Less than 6 hrs  | 2.2              |
| Wildfire <sup>1</sup>                                   | Possible-Likely        | Limited-Critical | Small-Moderate        | Less than 6 hrs                | Less than 1 week | 2.5-3.1          |
| Cyber Threat  | Possible               | Limited          | Small                 | Less than 6 hrs                | More than 1 week | 2.4              |

<sup>1</sup>Note: PRI ratings for this hazard vary by jurisdiction. The range of ratings are shown here.

<sup>2</sup>Note: This is a sub-hazard for the Hurricane & Coastal Hazards hazard. The overall hazard rating is an average of these sub-hazards.

<sup>3</sup>Note: This is a sub-hazard of the Tornadoes & Thunderstorms hazard. The overall hazard rating is an average of these sub-hazards.

# 5 CAPABILITY ASSESSMENT

This section discusses the capability of the Pamlico Sound region to implement hazard mitigation activities. It consists of the following four subsections:

- 5.1 Overview
  - 5.2 Conducting the Capability Assessment
  - 5.3 Capability Assessment Findings
  - 5.4 Conclusions on Local Capability
- 

## 5.1 OVERVIEW

The purpose of conducting a capability assessment is to determine the ability of a local jurisdiction to implement a comprehensive mitigation strategy, and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, or projects. As in any planning process, it is important to try to establish which goals, objectives, and actions are feasible, based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. A capability assessment helps to determine which mitigation actions are practical and likely to be implemented over time given a local government’s planning and regulatory framework, level of administrative and technical support, amount of fiscal resources, and current political climate.

A capability assessment has two primary components: 1) an inventory of a local jurisdiction’s relevant plans, ordinances, and programs already in place; and 2) an analysis of its capacity to carry them out. Careful examination of local capabilities will detect any existing gaps, shortfalls, or weaknesses with ongoing government activities that could hinder proposed mitigation activities and possibly exacerbate community hazard vulnerability. The capability assessment also highlights the positive mitigation measures already in place or being implemented at the local government level, which should continue to be supported and enhanced through future mitigation efforts.

The capability assessment completed for the Pamlico Sound region serves as a critical planning step toward developing an effective mitigation strategy. Coupled with the risk assessment, the capability assessment helps identify and target effective goals, objectives, and mitigation actions that are realistically achievable under given local conditions.

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## 5.2 CONDUCTING THE CAPABILITY ASSESSMENT

This capability assessment was originally developed using feedback from the HMPC through a detailed Local Capability Self-Assessment worksheet. The self-assessment requested information on a variety of “capability indicators” such as existing local plans, policies, programs, or ordinances that contribute to and/or hinder the region’s ability to implement hazard mitigation actions. Other indicators included information related to the region’s fiscal, administrative, and technical capabilities, such as access to local budgetary and personnel resources for mitigation purposes, and existing education and outreach programs that can be used to promote mitigation. Community representatives were also asked to comment on the current political climate with respect to hazard mitigation, an important consideration for any local planning or decision-making process.

The survey results also provided an extensive and consolidated inventory of existing local plans, ordinances, programs, and resources in place or under development. In completing the survey, local officials were also asked to rate their jurisdiction’s specific capabilities. The survey instrument thereby

not only helps accurately assess the degree of local capability, but it also serves as a good source of introspection for counties and local jurisdictions that want to improve their capabilities. Identified gaps, weaknesses, or conflicts can be recast as opportunities for specific actions to be proposed as part of the mitigation strategy.

The information provided in response to the survey questionnaire was incorporated into a database for further analysis. A general scoring methodology was then applied to quantify each jurisdiction’s overall capability. According to the scoring system, each capability indicator was assigned a point value based on its relevance to hazard mitigation. Additional points were added based on the jurisdiction’s self-assessment of their own planning and regulatory capability, administrative and technical capability, fiscal capability, education and outreach capability, and political capability.

Using this scoring methodology, a total score and an overall capability rating of “High,” “Moderate,” or “Limited” could be determined according to the total number of points received. These classifications are designed to provide nothing more than a general assessment of local government capability. In combination with the narrative responses provided by local officials, the results of this capability assessment provide critical information for developing an effective and meaningful mitigation strategy.

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## **5.3 CAPABILITY ASSESSMENT FINDINGS**

The findings of the capability assessment are summarized in this plan to provide insight into the relevant capacity of the Pamlico Sound Planning Area to implement hazard mitigation activities. All information is based upon the input provided by local government officials through the Local Capability Self-Assessment and subsequent updates by the planning team and the HMPC.

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### **5.3.1 PLANNING AND REGULATORY CAPABILITY**

Planning and regulatory capability is based on the implementation of plans, ordinances, and programs that demonstrate a local jurisdiction’s commitment to guiding and managing growth, development, and redevelopment in a responsible manner, while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning, and transportation planning. Regulatory capability also includes the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built, as well as protecting environmental, historic, and cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate hazard mitigation principles and practices into the local decision-making process.

This assessment is designed to provide a general overview of the key planning and regulatory tools or programs in place or under development for the Pamlico Sound region, along with their potential effect on loss reduction. This information will help identify opportunities to address gaps, weaknesses, or conflicts with other initiatives and integrate the implementation of this plan with existing planning mechanisms where appropriate.

Table 5.1 provides a summary of the relevant local plans, ordinances, and programs already in place or under development for the Pamlico Sound region. A checkmark (✓) indicates that the given item is currently in place and being implemented. An asterisk (\*) indicates that the given item is currently being developed for future implementation. A plus sign (+) indicates that a jurisdiction is covered for that item under a county-implemented version. Each of these local plans, ordinances, and programs should be considered available mechanisms for incorporating the requirements of the Hazard Mitigation Plan.

**SECTION 5: CAPABILITY ASSESSMENT**

**Table 5.1 – Relevant Plans, Ordinances, and Programs**

| Jurisdiction            | Hazard Mitigation Plan | Comprehensive Land Use Plan | Floodplain Management Plan | Open Space Management Plan | Stormwater Management Plan | Emergency Operations Plan | SARA Title III Plan | Radiological Emergency Plan | Continuity of Operations Plan | Evacuation Plan | Disaster Recovery Plan | Capital Improvements Plan | Economic Development Plan | Historic Preservation Plan | Transportation Plan | Flood Damage Prevention Ordinance | Zoning Ordinance | Subdivision Ordinance | Site Plan Review Requirements | Unified Development Ordinance | Post-Disaster Redev. Ordinance | Building Code | Fire Code | Community Wildfire Protection Plan | National Flood Insurance Program | Community Rating System |
|-------------------------|------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|---------------------------|---------------------|-----------------------------|-------------------------------|-----------------|------------------------|---------------------------|---------------------------|----------------------------|---------------------|-----------------------------------|------------------|-----------------------|-------------------------------|-------------------------------|--------------------------------|---------------|-----------|------------------------------------|----------------------------------|-------------------------|
| <b>Beaufort County</b>  | ✓                      | ✓                           |                            |                            |                            | ✓                         | ✓                   | ✓                           | ✓                             | ✓               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Aurora          | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Bath            | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Belhaven        | ✓                      | ✓                           | ✓                          | ✓                          |                            | ✓                         | +                   | +                           | +                             | +               |                        | ✓                         | +                         |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Chocowinity     | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Pantego         | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| City of Washington      | ✓                      | ✓                           | ✓                          | ✓                          | ✓                          | +                         | +                   | +                           | +                             | +               |                        | ✓                         | ✓                         | ✓                          | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Washington Park | ✓                      | ✓                           | ✓                          | ✓                          | ✓                          | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| <b>Carteret County</b>  | ✓                      | ✓                           |                            |                            |                            | ✓                         | ✓                   | ✓                           | ✓                             | ✓               |                        | ✓                         | ✓                         |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Atlantic Beach  | ✓                      | ✓                           |                            | ✓                          | ✓                          | +                         | +                   | +                           | +                             | +               |                        | ✓                         |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Beaufort        | ✓                      | ✓                           |                            | ✓                          |                            | +                         | +                   | +                           | +                             | +               |                        | ✓                         |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Bogue           | ✓                      | +                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | +                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | +             | ✓         |                                    | ✓                                |                         |
| Town of Cape Carteret   | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |

**SECTION 5: CAPABILITY ASSESSMENT**

| Jurisdiction              | Hazard Mitigation Plan | Comprehensive Land Use Plan | Floodplain Management Plan | Open Space Management Plan | Stormwater Management Plan | Emergency Operations Plan | SARA Title III Plan | Radiological Emergency Plan | Continuity of Operations Plan | Evacuation Plan | Disaster Recovery Plan | Capital Improvements Plan | Economic Development Plan | Historic Preservation Plan | Transportation Plan | Flood Damage Prevention Ordinance | Zoning Ordinance | Subdivision Ordinance | Site Plan Review Requirements | Unified Development Ordinance | Post-Disaster Redev. Ordinance | Building Code | Fire Code | Community Wildfire Protection Plan | National Flood Insurance Program | Community Rating System |
|---------------------------|------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|---------------------------|---------------------|-----------------------------|-------------------------------|-----------------|------------------------|---------------------------|---------------------------|----------------------------|---------------------|-----------------------------------|------------------|-----------------------|-------------------------------|-------------------------------|--------------------------------|---------------|-----------|------------------------------------|----------------------------------|-------------------------|
| Town of Cedar Point       | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Emerald Isle      | ✓                      | ✓                           | ✓                          | ✓                          | ✓                          | +                         | +                   | +                           | +                             | +               |                        | ✓                         | +                         |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Indian Beach      | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Morehead City     | ✓                      | ✓                           | ✓                          |                            | *                          | +                         | +                   | +                           | ✓                             | +               |                        | ✓                         | +                         |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Newport           | ✓                      | ✓                           |                            | ✓                          |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Peletier          | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Pine Knoll Shores | ✓                      | ✓                           |                            | ✓                          |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| <b>Craven County</b>      | ✓                      | ✓                           |                            |                            |                            | ✓                         | ✓                   | ✓                           | ✓                             | ✓               |                        | ✓                         | ✓                         |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Bridgeton         | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Cove City         | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Dover             | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| City of Havelock          | ✓                      | ✓                           |                            | ✓                          | ✓                          | +                         | +                   | +                           | +                             | +               |                        | ✓                         |                           |                            | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| City of New Bern          | ✓                      | ✓                           |                            | ✓                          | ✓                          | +                         | +                   | +                           | +                             | +               |                        | ✓                         |                           | ✓                          | ✓                   | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of River Bend        | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |

**SECTION 5: CAPABILITY ASSESSMENT**

| Jurisdiction            | Hazard Mitigation Plan | Comprehensive Land Use Plan | Floodplain Management Plan | Open Space Management Plan | Stormwater Management Plan | Emergency Operations Plan | SARA Title III Plan | Radiological Emergency Plan | Continuity of Operations Plan | Evacuation Plan | Disaster Recovery Plan | Capital Improvements Plan | Economic Development Plan | Historic Preservation Plan | Transportation Plan | Flood Damage Prevention Ordinance | Zoning Ordinance | Subdivision Ordinance | Site Plan Review Requirements | Unified Development Ordinance | Post-Disaster Redev. Ordinance | Building Code | Fire Code | Community Wildfire Protection Plan | National Flood Insurance Program | Community Rating System |
|-------------------------|------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|---------------------------|---------------------|-----------------------------|-------------------------------|-----------------|------------------------|---------------------------|---------------------------|----------------------------|---------------------|-----------------------------------|------------------|-----------------------|-------------------------------|-------------------------------|--------------------------------|---------------|-----------|------------------------------------|----------------------------------|-------------------------|
| Town of Vanceboro       | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| Town of Trent Woods     | ✓                      | ✓                           |                            |                            | ✓                          | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                |                         |
| <b>Pamlico County</b>   | ✓                      | ✓                           |                            |                            |                            | ✓                         | ✓                   | ✓                           | ✓                             | ✓               |                        |                           |                           |                            | ✓                   | ✓                                 |                  | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Alliance        | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 |                  | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Arapahoe        | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 |                  | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    |                                  |                         |
| Town of Bayboro         | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Grantsboro      | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 |                  | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    |                                  |                         |
| Town of Mesic           | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Minnesott Beach | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Oriental        | ✓                      | ✓                           |                            | ✓                          |                            | ✓                         | +                   | +                           | +                             | +               | ✓                      | ✓                         |                           |                            |                     | ✓                                 | ✓                | ✓                     | ✓                             | ✓                             |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Stonewall       | ✓                      | ✓                           |                            |                            |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            |                     | ✓                                 |                  | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |
| Town of Vandemere       | ✓                      | ✓                           |                            | ✓                          |                            | +                         | +                   | +                           | +                             | +               |                        |                           |                           |                            | +                   | ✓                                 | ✓                | ✓                     | ✓                             |                               |                                | ✓             | ✓         |                                    | ✓                                | ✓                       |



A more detailed discussion on the region’s planning and regulatory capability follows, along with the incorporation of additional information based on the narrative comments provided by local officials in response to the survey questionnaire.

### 5.3.1.1 EMERGENCY MANAGEMENT

Hazard mitigation is widely recognized as one of the four primary phases of emergency management, as is shown in Figure 5.1. In reality, mitigation is interconnected with all other phases and is an essential component of effective preparedness, response, and recovery. Opportunities to reduce potential losses through mitigation practices are most often implemented before a disaster event, such as through the elevation of flood-prone structures or by regular enforcement of policies that regulate development. However, mitigation opportunities can also be identified during immediate preparedness or response activities, such as installing storm shutters in advance of a hurricane. Furthermore, incorporating mitigation during the long-term recovery and redevelopment process following a disaster event is what enables a community to become more resilient.

Figure 5.1 – The Four Phases of Emergency Management



Planning for each phase is a critical part of a comprehensive emergency management program and a key to the successful implementation of hazard mitigation actions. As such, the Local Capability Self-Assessment asked several questions across a range of emergency management plans to assess the region’s willingness to plan and their level of technical planning proficiency.

### HAZARD MITIGATION PLAN

A hazard mitigation plan is a community’s blueprint for how it intends to reduce the impact of natural, and in some cases human-caused, hazards on people and the built environment. The essential elements of a hazard mitigation plan include a risk assessment, capability assessment, and mitigation strategy.

- All participating jurisdictions in this regional planning effort have previously been covered by the Pamlico Sound Regional Hazard Mitigation Plan.
- In addition to the official local hazard mitigation plan, several communities have participated in mitigation and resilience planning efforts that involve risk and vulnerability assessment and mitigation or resilience action development. Beaufort County, Aurora, Belhaven, Washington, Washington Park, Beaufort, Cape Carteret, Pine Knoll Shores, Craven County, Pamlico County, and Vandemere have each participated in North Carolina Division of Coastal Management’s Resilient Coastal Communities Program and developed Resilience Strategies through that program. Additionally, the Eastern Carolina Council of Governments and the Mid-East Commission worked with NCORR’s RISE Program to develop the Eastern Carolina Regional Resilience Portfolio and the

Mid-East Regional Resilience Portfolio, which contain prioritized regional resilience projects relevant to the Pamlico Region.

### **DISASTER RECOVERY PLAN**

A disaster recovery plan serves to guide the physical, social, environmental, and economic recovery and reconstruction process following a disaster event. In many instances, hazard mitigation principles and practices are incorporated into local disaster recovery plans with the intent of capitalizing on opportunities to break the cycle of repetitive disaster losses. Disaster recovery plans can also lead to the preparation of disaster redevelopment policies and ordinances to be enacted following a hazard event.

- 1 of the 39 participating jurisdictions has a disaster recovery plan in place.

### **EMERGENCY OPERATIONS PLAN**

An emergency operations plan outlines responsibilities and how resources will be deployed during and following an emergency or disaster.

- All participating jurisdictions have an emergency operations plan either in place or are covered under a county plan (5 jurisdictions have one in place; 34 jurisdictions covered under a county plan).

### **CONTINUITY OF OPERATIONS PLAN**

A continuity of operations plan establishes a chain of command, line of succession, and plans for backup or alternate emergency facilities in case of an extreme emergency or disaster event.

- All of the participating jurisdictions have a continuity of operations plan either in place or are covered under a county plan (5 jurisdictions have one in place; 34 jurisdictions covered under a county plan).

#### **5.3.1.2 GENERAL PLANNING**

The implementation of hazard mitigation activities often involves agencies and individuals beyond the emergency management profession. Stakeholders may include local planners, public works officials, economic development specialists, and others. In many instances, concurrent local planning efforts will help to achieve or complement hazard mitigation goals, even though they may not be designed as such. The Local Capability Self-Assessment asked questions regarding general planning capabilities and the degree to which hazard mitigation is integrated into other ongoing planning efforts in the region.

### **COMPREHENSIVE/GENERAL PLAN**

A comprehensive land use plan, or general plan, establishes the overall vision for what a community wants to be and serves as a guide for future governmental decision making. Typically, a comprehensive plan contains sections on demographic conditions, land use, transportation elements, and community facilities. Given the broad nature of the plan and its regulatory standing in many communities, the integration of hazard mitigation measures into the comprehensive plan can enhance the likelihood of achieving risk reduction goals, objectives, and actions.

- All participating jurisdictions have a comprehensive land use plan in place (38 jurisdictions have one in place; 1 jurisdiction covered under a county plan).

### **CAPITAL IMPROVEMENTS PLAN**

A capital improvements plan guides the scheduling of spending on public improvements. A capital improvements plan can serve as an important mechanism for guiding future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments.

- 11 of the 39 participating jurisdictions have a capital improvements plan in place or under development.

## **HISTORIC PRESERVATION PLAN**

A historic preservation plan is intended to preserve historic structures or districts within a community. An often-overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards, and the identification of ways to reduce future damages. This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards or are within a historic district that cannot easily be relocated out of harm's way.

- 2 of the 39 participating jurisdictions have an historic preservation plan in place or under development.

## **ZONING ORDINANCE**

Zoning represents the primary means by which land use is controlled by local governments. As part of a community's police power, zoning is used to protect the public health, safety, and welfare of those in a given jurisdiction that maintains zoning authority. A zoning ordinance is the mechanism through which zoning is typically implemented. Since zoning regulations enable municipal governments to limit the type and density of development, a zoning ordinance can serve as a powerful tool when applied in identified hazard areas.

- 34 of the 39 participating jurisdictions have a zoning ordinance in place or under development.

## **SUBDIVISION ORDINANCE**

A subdivision ordinance is intended to regulate the development of residential, commercial, industrial, or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.

- All participating jurisdictions have a subdivision ordinance in place or under development.

## **BUILDING CODES, PERMITTING, AND INSPECTIONS**

Building codes regulate construction standards. In many communities, permits and inspections are required for new construction. Decisions regarding the adoption of building codes (that account for hazard risk), the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community.

- All participating jurisdictions have building codes in place.

The adoption and enforcement of building codes by local jurisdictions is routinely assessed through the Building Code Effectiveness Grading Schedule (BCEGS) program, developed by the Insurance Services Office, Inc. (ISO). In North Carolina, the North Carolina Department of Insurance assesses the building codes in effect in a particular community and how the community enforces its building codes, with special emphasis on mitigation of losses from natural hazards. The results of BCEGS assessments are routinely provided to ISO's member private insurance companies, which in turn may offer ratings credits for new buildings constructed in communities with strong BCEGS classifications. The expectation is that communities with well-enforced, up-to-date codes should experience fewer disaster-related losses, and as a result should have lower insurance rates.

In conducting the assessment, ISO collects information related to personnel qualification and continuing education, as well as number of inspections performed per day. This type of information combined with local building codes is used to determine a grade for that jurisdiction. The grades range from 1 to 10, with a BCEGS grade of 1 representing exemplary commitment to building code enforcement, and a grade of 10 indicating less than minimum recognized protection.

### 5.3.1.3 FLOODPLAIN MANAGEMENT

Flooding represents the greatest natural hazard facing the nation, yet the tools available to reduce the impacts associated with flooding are among the most developed when compared to other hazard-specific mitigation techniques. In addition to approaches that cut across hazards such as education, outreach, and the training of local officials, the National Flood Insurance Program (NFIP) contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary for local governments; however, program participation is strongly encouraged by FEMA as a first step for implementing and sustaining an effective hazard mitigation program. It is therefore used as part of this capability assessment as a key indicator for measuring local capability.

In order for a county or municipality to participate in the NFIP, they must adopt a local flood damage prevention ordinance that requires jurisdictions to follow established minimum building standards in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings be protected from damage by a 100-year flood event, and that new development in the floodplain not exacerbate existing flood problems or increase damage to other properties.

A key service provided by the NFIP is the mapping of identified flood hazard areas. Once completed, the Flood Insurance Rate Maps (FIRMs) are used to assess flood hazard risk, regulate construction practices, and set flood insurance rates. FIRMs are an important source of information to educate residents, government officials, and the private sector about the likelihood of flooding in their community.

Table 5.2 provides NFIP and CRS class information (see CRS section below) for each participating jurisdiction in the Pamlico Sound region. Detailed policy and claim information for each participating jurisdiction can be found in Annex A.

All but two jurisdictions in the region participate in the NFIP and will continue to comply with all required provisions of the program. Floodplain management is managed through zoning ordinances, building code restrictions, and the county building inspection program. The jurisdictions will coordinate with NCEM and FEMA to develop maps and regulations related to Special Flood Hazard Areas within their jurisdictional boundaries and, through a consistent monitoring process, will design and improve their floodplain management program in a way that reduces the risk of flooding to people and property.

Arapahoe and Grantsboro in Pamlico County do not currently participate in the NFIP.

### COMMUNITY RATING SYSTEM

An additional indicator of floodplain management capability is active participation in the Community Rating System (CRS). The CRS is an incentive-based program that encourages communities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP. Each of the CRS mitigation activities is assigned a point value. As a community earns points and reaches identified thresholds, they can apply for an improved CRS class. Class ratings, which range from 10 to 1 and increase on 500-point increments, are tied to flood insurance premium reductions. Every class improvement earns an additional 5 percent discount for NFIP policyholders, with a starting discount of 5 percent for Class 9 communities and a maximum possible discount of 45 percent for Class 1 communities.

Community participation in the CRS is voluntary. Any community that is in full compliance with the rules and regulations of the NFIP may apply to FEMA for a CRS classification better than class 10. The CRS application process has been greatly simplified over the past several years, based on community comments intended to make the CRS more user friendly, and extensive technical assistance available for communities who request it.

- 24 of the 39 participating jurisdictions participate in the Community Rating System. Each community's CRS Class is shown in the table below.

**SECTION 5: CAPABILITY ASSESSMENT**

**Table 5.2 - NFIP and CRS Information**

| <b>Jurisdiction</b>       | <b>Date Joined NFIP</b> | <b>Current CRS Class</b> | <b>Current Effective Map Date</b> |
|---------------------------|-------------------------|--------------------------|-----------------------------------|
| <b>Beaufort County</b>    | 07/22/77                | -                        | 01/17/25                          |
| City of Washington        | 02/20/73                | 7                        | 06/19/20                          |
| Town of Aurora            | 05/03/74                | -                        | 06/19/20                          |
| Town of Bath              | 07/08/77                | -                        | 06/19/20                          |
| Town of Belhaven          | 04/13/73                | 8                        | 06/19/20                          |
| Town of Chocowinity       | 05/15/03                | -                        | 06/19/20                          |
| Town of Pantego           | 09/06/74                | -                        | 06/19/20                          |
| Town of Washington Park   | 02/09/73                | 8                        | 06/19/20                          |
| <b>Carteret County</b>    | 02/14/75                | 9                        | 01/17/25                          |
| Town of Atlantic Beach    | 06/28/74                | 8                        | 01/17/25                          |
| Town of Beaufort          | 12/01/72                | 7                        | 11/03/05                          |
| Town of Bogue             | 02/14/75                | -                        | 01/17/25                          |
| Town of Cape Carteret     | 05/24/74                | 8                        | 01/17/25                          |
| Town of Cedar Point       | 02/14/75                | 7                        | 01/17/25                          |
| Town of Emerald Isle      | 06/07/74                | 7                        | 01/17/25                          |
| Town of Indian Beach      | 03/04/85                | -                        | 01/17/25                          |
| Town of Morehead City     | 02/22/74                | 5                        | 11/03/05                          |
| Town of Newport           | 03/01/74                | 8                        | 01/17/25                          |
| Town of Peletier          | 07/16/03                | -                        | 01/17/25                          |
| Town of Pine Knoll Shores | 07/11/75                | 6                        | 01/17/25                          |
| <b>Craven County</b>      | 12/20/74                | 8                        | 01/17/25                          |
| City of Havelock          | 09/13/74                | 7                        | 06/19/20                          |
| City of New Bern          | 02/22/74                | 8                        | 06/15/22                          |
| Town of Bridgeton         | 12/20/74                | -                        | 06/19/20                          |
| Town of Cove City         | 07/02/04                | -                        | NSFHA                             |
| Town of Dover             | 07/02/04                | -                        | NSFHA                             |
| Town of River Bend        | 05/14/82                | 8                        | 06/15/22                          |
| Town of Trent Woods       | 05/04/87                | -                        | 06/15/22                          |
| Town of Vanceboro         | 12/20/74                | -                        | 06/19/20                          |
| <b>Pamlico County</b>     | 01/31/75                | 8                        | 06/19/20                          |
| Town of Alliance          | 07/14/78                | 8                        | 06/19/20                          |
| Town of Arapahoe*         | 07/02/04                | -                        | 06/19/20                          |
| Town of Bayboro           | 07/30/76                | 8                        | 06/19/20                          |
| Town of Grantsboro*       | 06/16/78                | -                        | 06/19/20                          |
| Town of Mesic             | 07/30/76                | 8                        | 06/19/20                          |
| Town of Minnesott Beach   | 03/02/79                | 8                        | 06/19/20                          |
| Town of Oriental          | 01/31/75                | 8                        | 06/19/20                          |
| Town of Stonewall         | 01/31/75                | 8                        | 06/19/20                          |
| Town of Vandemere         | 01/31/75                | 8                        | 06/19/20                          |

Source: FEMA NFIP Policy Statistics

\*Communities not currently participating in the NFIP.

## **FLOOD DAMAGE PREVENTION ORDINANCE**

A flood damage prevention ordinance establishes minimum building standards in the floodplain with the intent to minimize public and private losses due to flood conditions.

- All communities participating in the NFIP are required to adopt a local flood damage prevention ordinance. All counties and all but two municipalities participating in this hazard mitigation plan also participate in the NFIP and they all have adopted flood damage prevention regulations and have appointed floodplain managers to oversee enforcement and implementation of the ordinance.

## **FLOODPLAIN MANAGEMENT PLAN**

A floodplain management plan (or a flood mitigation plan) provides a framework for action regarding corrective and preventative measures to reduce flood-related impacts.

- 5 of the 39 participating jurisdictions have a floodplain management plan in place.

## **OPEN SPACE MANAGEMENT PLAN**

An open space management plan is designed to preserve, protect, and restore largely undeveloped lands in their natural state, and to expand or connect areas in the public domain such as parks, greenways, and other outdoor recreation areas. In many instances open space management practices are consistent with the goals of reducing hazard losses, such as the preservation of wetlands or other flood-prone areas in their natural state in perpetuity.

- 12 of the 39 participating jurisdictions have an open space management plan in place or under development.

## **STORMWATER MANAGEMENT PLAN**

A stormwater management plan is designed to address flooding associated with stormwater runoff. The stormwater management plan is typically focused on design and construction measures that are intended to reduce the impact of more frequently occurring minor urban flooding.

- 8 of the 39 participating jurisdictions have a stormwater management plan in place or under development.

## **SUBSTANTIAL DAMAGE ESTIMATE PROCEDURES**

Properties in communities that participate in the NFIP that are determined to be “substantially damaged” following a flood event must be brought into compliance with the local flood damage prevention ordinance. Determination of substantial damage is a coordinated effort between emergency management, police and fire departments and permitting departments such as planning and building inspections departments. Substantial damage estimating procedures for participating jurisdictions are detailed below in Table 5.3 – Floodplain Management and Substantial Damage/Improvement (SD/SI) Procedures.

Participating jurisdictions that did not provide substantial damage estimating procedures to include in this plan are in the process of developing written protocols for their processes. These will be added to this plan in future updates.

**SECTION 5: CAPABILITY ASSESSMENT**

**Table 5.3 - Floodplain Management and Substantial Damage/Improvement (SD/SI) Procedures**

| <b>Jurisdiction</b> | <b>Applicable local floodplain management regulations</b>  | <b>Designated officials for SD/SI determinations and staff training</b>  | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>  |
|---------------------|--|--|--|--|
| Beaufort County     | Maintains a countywide flood damage prevention ordinance and participates in the NFIP                                | Beaufort County Chief Building Inspector designated as the Floodplain Administrator  | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul>   | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required  |
| City of Washington  | Maintains a citywide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 7) | City of Washington Chief Building Officer designated as the Floodplain Administrator <ul style="list-style-type: none"> <li>• Floodplain Administrator has obtained Certified Floodplain Manager (CFM) designation</li> <li>• Guidance received from the NFIP Eastern Branch</li> <li>• Adequate staff trained, but City faces resource limitations</li> </ul> | Does not currently have Standard Operating Procedures (SOPs), but any project within the SFHA must be reviewed: <ul style="list-style-type: none"> <li>• Projects are reviewed monthly, typically initiated by a building permit, and SI/SD compliance is assessed as part of the FDP process</li> <li>• Floodplain Administrator uses valuation data from the Beaufort GIS/Tax Office</li> <li>• Post-disaster damage assessments are conducted following significant storm events in coordination with the Building Inspector</li> <li>• Projects are monitored using iWorq software, spreadsheets, and paper records</li> </ul> | SI/SD information is available through mailings, the City's website, and informational brochures: <ul style="list-style-type: none"> <li>• Applicants are informed of the 50% threshold on FDPs</li> <li>• Relevant ordinance sections are cited, the percentage applicable to the project is calculated, and the remaining amount is noted before triggering a SI determination</li> <li>• SD determinations are issued via mail, and notices are posted on affected homes</li> </ul> |
| Town of Aurora      | Maintains a townwide flood damage prevention ordinance and participates in the NFIP                                  | Beaufort County Chief Building Inspector designated as the Floodplain Administrator  | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul>   | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required  |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b> | <b>Applicable local floodplain management regulations</b>  | <b>Designated officials for SD/SI determinations and staff training</b>  | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>  |
|---------------------|--|--|--|--|
| Town of Bath        | Maintains a townwide flood damage prevention ordinance and participates in the NFIP                                  | Town of Bath Town Administrator designated as the Floodplain Administrator   | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required  |
| Town of Belhaven    | Maintains a townwide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 8) | Town of Belhaven Town Manager designated as the Floodplain Administrator: <ul style="list-style-type: none"> <li>• Town has one certified floodplain manager (CFM) that receives FEMA training annually</li> </ul> | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Staff surveys damage of homes/buildings following a storm event (as soon as its safe)</li> <li>• Use the information from the site surveys to compare building permits issued</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul>                       | NFIP participation requires communication with citizens on relevant topics (including SI/SD): <ul style="list-style-type: none"> <li>• Provide educational information at Town Hall, public library, and website</li> <li>• If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required</li> </ul> |
| Town of Chocowinity | Participates in the NFIP   | Town of Chocowinity Mayor designated as Floodplain Administrator   | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required  |
| Town of Pantego     | Participates in the NFIP   | Pantego Town Clerk designated as Floodplain Administrator  | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required  |



**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>     | <b>Applicable local floodplain management regulations</b>  | <b>Designated officials for SD/SI determinations and staff training</b>   | <b>Processes used by the community to make SD/SI determinations</b>   | <b>Communication procedures of the community for SD/SI requirements</b>  |
|-------------------------|--|---|---|--|
| Town of Washington Park | Participates in the NFIP and is a CRS community (Class 8)  | City of Washington Chief Building Officer designated as the Floodplain Administrator: <ul style="list-style-type: none"> <li>• Floodplain Administrator has obtained Certified Floodplain Manager (CFM) designation</li> <li>• Guidance received from the NFIP Eastern Branch</li> <li>• Adequate staff trained, but City faces resource limitations</li> </ul> | Does not current have Standard Operating Procedures (SOPs), but any project within the SFHA must be reviewed: <ul style="list-style-type: none"> <li>• Projects are reviewed monthly, typically initiated by a building permit, and SI/SD compliance is assessed as part of the FDP process</li> <li>• Floodplain Administrator uses valuation data from the Beaufort GIS/Tax Office</li> <li>• Post-disaster damage assessments are conducted following significant storm events in coordination with the Building Inspector and Town Manager</li> <li>• Projects are monitored using iWorq software, spreadsheets, and paper records</li> </ul> | SI/SD information is available through mailings, the City's website, and informational brochures: <ul style="list-style-type: none"> <li>• Applicants are informed of the 50% threshold on FDPs</li> <li>• Relevant ordinance sections are cited, the percentage applicable to the project is calculated, and the remaining amount is noted before triggering a SI determination</li> <li>• SD determinations are issued via mail, and notices are posted on affected homes</li> </ul>   |
| Carteret County         | Maintains a countywide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 9) | Carteret County Director of Planning and Development designated as Floodplain Administrator: <ul style="list-style-type: none"> <li>• Staff have attended FEMA SDAP workshop(s) and online training(s)</li> <li>• Serves as the Floodplain Administrator for the Towns of Bogue, Indian Beach, and Peletier, handling SI/SD determinations</li> </ul>           | Substantial damage/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Utilize knowledge gained through FEMA SI/SD Training in combination with County Building Inspector knowledge</li> <li>• Compile information into the FEMA SDE software, including the SDE tool, to determine if a structure has suffered substantial damage post-hazard</li> </ul>   | If work constitutes substantial improvements or repair of substantial damage: <ul style="list-style-type: none"> <li>• Substantial Damage Determination Letter is drafted and sent to property owner's mailing address as listed on County's tax parcel card</li> <li>• Indicates property must be brought into full compliance with the local Flood Damage Prevention and Protection Ordinance</li> <li>• If structure is deemed a life/safety issue, it will be posted by the building inspector</li> <li>• Includes supporting documentation pertaining to ICC eligibility and funding to demolish, relocate, or elevate structure</li> </ul> |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>    | <b>Applicable local floodplain management regulations</b>  | <b>Designated officials for SD/SI determinations and staff training</b>  | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>   |
|------------------------|--|--|--|---|
| Town of Atlantic Beach | Maintains a townwide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 8) | Town of Atlantic Beach Building Inspector designated as the Floodplain Administrator   | Substantial damage/improvements determined by Floodplain Administrator with Carteret County Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul>  | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required   |
| Town of Beaufort       | Maintains a townwide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 7) | Town of Beaufort Building Inspector designated as the Floodplain Administrator: <ul style="list-style-type: none"> <li>• Staff involved in procedures includes planners, building officials, and certified floodplain managers (CFMs)</li> </ul> | Substantial damage/improvements determined by Floodplain Administrator: <ul style="list-style-type: none"> <li>• Staff deploy to the Town's nine affected divisions to monitor impact areas/determine where to focus efforts</li> <li>• Self-reporting and fly overs with either aircraft or drone are also utilized for reporting purposes</li> <li>• Once impact area is determined, information is provided to staff to guide and inform assessments</li> <li>• Information is tracking using FEMA's SDE tool software and sent to Carteret County for disaster estimations</li> <li>• Work is field verified by inspectors to ensure constructions is up to code and in compliance with applicable ordinances</li> </ul> | If/when homeowners submit permit(s) for repair: <ul style="list-style-type: none"> <li>• The data collected post-disaster is referenced and will notify staff if substantial damage is triggered</li> <li>• If SD is triggered, the building must come into compliance with all Town ordinances</li> </ul> If/when homeowners submit permit to improve property without damage: <ul style="list-style-type: none"> <li>• Substantial improvement protocols are activated</li> <li>• Entails review of project scope, evaluations of structure's depreciated value, and work is adjusted based on determination</li> </ul> |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>   | <b>Applicable local floodplain management regulations</b>  | <b>Designated officials for SD/SI determinations and staff training</b>   | <b>Processes used by the community to make SD/SI determinations</b>   | <b>Communication procedures of the community for SD/SI requirements</b>  |
|-----------------------|--|---|---|--|
| Town of Bogue         | Maintains a townwide flood damage prevention ordinance and participates in the NFIP.                                 | Carteret County Director of Planning and Development designated as Floodplain Administrator: <ul style="list-style-type: none"> <li>• Staff have attended FEMA SDAP workshop(s) and online training(s)</li> </ul>   | Substantial damage/improvements determined by Floodplain Administrator with Carteret County Building Official coordination: <ul style="list-style-type: none"> <li>• Utilize knowledge gained through FEMA SI/SD Training in combination with County Building Inspector knowledge</li> <li>• Compile information into the FEMA SDE software, including the SDE tool, to determine if a structure has suffered substantial damage post-hazard</li> </ul>   | If work constitutes substantial improvements or repair of substantial damage: <ul style="list-style-type: none"> <li>• Substantial Damage Determination Letter is drafted and sent to property owner's mailing address as listed on County's tax parcel card</li> <li>• Indicates property must be brought into full compliance with the local Flood Damage Prevention and Protection Ordinance</li> <li>• If structure is deemed a life/safety issue, it will be posted by the building inspector</li> <li>• Includes supporting documentation pertaining to ICC eligibility and funding to demolish, relocate, or elevate structure</li> </ul> |
| Town of Cape Carteret | Maintains a townwide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 8) | Town of Cape Carteret Town Planner is designated as the Floodplain Administrator: <ul style="list-style-type: none"> <li>• Town Manager maintains a roster of staff available to conduct SI/SD activities</li> <li>• Town Planner is the primary person responsible for SI/SD activities</li> </ul> | Substantial damage/improvements determined by Floodplain Administrator with Carteret County Building Official coordination: <ul style="list-style-type: none"> <li>• Use Appendix E of the SDE User Manual and Field Workbook to estimate percentage of damage of residential structures</li> <li>• Use Appendix F of SDE User Manual and Field Workbook to estimate percentage of damage of non-residential structures</li> <li>• Documentation/storing of SI/SD determination data is managed by Carteret County Emergency Services Department</li> </ul> | Does not have a documented procedure for communicating SI/SD determinations to structure owners: <ul style="list-style-type: none"> <li>• Will develop letter templates and documents to notify residents of determinations</li> </ul>   |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>  | <b>Applicable local floodplain management regulations</b>  | <b>Designated officials for SD/SI determinations and staff training</b>   | <b>Processes used by the community to make SD/SI determinations</b>   | <b>Communication procedures of the community for SD/SI requirements</b>   |
|----------------------|--|---|---|---|
| Town of Cedar Point  | Maintains a townwide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 7) | Cedar Point Town Administrator designated as Floodplain Administrator   | Substantial damage/improvements determined by Floodplain Administrator with Carteret County Building Official coordination: <ul style="list-style-type: none"> <li>• Use WebEOC to complete initial windshield surveys to identify no visible damage, some damage, and substantial damage (following NFIP description)</li> <li>• Investigate structures identified as “some damage” to determine if they exceed initial threshold identified and appropriately fall within “substantial damage”</li> <li>• Use FEMA’s SDE tool to confirm SD determination (if contested by property owner or Town)</li> </ul> As a secondary measure: <ul style="list-style-type: none"> <li>• Require cost estimate for repair permit</li> <li>• Compare with the tax value or CRS suitable appraisal</li> <li>• Determine if the substantial damage threshold would be crossed if the project were permitted</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required   |
| Town of Emerald Isle | Participates in the NFIP and is a CRS community (Class 7)  | Town of Emerald Isle Planning Director designated as Floodplain Administrator: <ul style="list-style-type: none"> <li>• Staff available to conduct SI/SD activities during disaster operations</li> </ul> | Substantial damage/improvements determined by Floodplain Administrator with Carteret County Building Official coordination: <ul style="list-style-type: none"> <li>• Obtain the structure value through tax records available through Carteret County online GIS system</li> <li>• Recommend applicant secure an independent appraisal</li> </ul>   | The following communication methods are used to communicate the results of SI/SD determinations to structure owners: <ul style="list-style-type: none"> <li>• Letter or email to structure owners/residents</li> <li>• Paper handed directly to the structure owner/resident</li> <li>• Post the determination at a physical or virtual community site</li> </ul> |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>   | <b>Applicable local floodplain management regulations</b>  | <b>Designated officials for SD/SI determinations and staff training</b>   | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>  |
|-----------------------|--|---|--|--|
| Town of Indian Beach  | Maintains a townwide flood damage prevention ordinance and participates in the NFIP.                                 | Carteret County Director of Planning and Development designated as Floodplain Administrator: <ul style="list-style-type: none"> <li>• Staff have attended FEMA SDAP workshop(s) and online training(s)</li> </ul> | Substantial damage/improvements determined by Floodplain Administrator with Carteret County Building Official coordination: <ul style="list-style-type: none"> <li>• Utilize knowledge gained through FEMA SI/SD Training in combination with County Building Inspector knowledge</li> <li>• Compile information into the FEMA SDE software, including the SDE tool, to determine if a structure has suffered substantial damage post-hazard</li> </ul>            | If work constitutes substantial improvements or repair of substantial damage: <ul style="list-style-type: none"> <li>• Substantial Damage Determination Letter is drafted and sent to property owner's mailing address as listed on County's tax parcel card</li> <li>• Indicates property must be brought into full compliance with the local Flood Damage Prevention and Protection Ordinance</li> <li>• If structure is deemed a life/safety issue, it will be posted by the building inspector</li> <li>• Includes supporting documentation pertaining to ICC eligibility and funding to demolish, relocate, or elevate structure</li> </ul> |
| Town of Morehead City | Maintains a townwide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 5) | Morehead City Building Inspector designated as Floodplain Administrator   | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required  |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b> | <b>Applicable local floodplain management regulations</b>                            | <b>Designated officials for SD/SI determinations and staff training</b>   | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>  |
|---------------------|--|---|--|--|
| Town of Newport     | Maintains a townwide flood damage prevention ordinance and participates in the NFIP. | Town of Newport Ordinance Administrator designated as Floodplain Administrator  | Substantial damage/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimate the market value of the building or structure before the damage occurred and before any repairs are made</li> <li>• Compare cost to perform improvement, cost to repair damaged building to its pre-damaged condition, or combined costs of improvements and repairs to the market value</li> <li>• Determine/document if proposed work constitutes substantial improvement or repair of substantial damage</li> </ul> | If work constitutes substantial improvements or repair of substantial damage: <ul style="list-style-type: none"> <li>• Notify the applicant of determination and that compliance with flood-resistant construction requirements of NC Building Code and Town Flood Damage Prevention Ordinance is required</li> </ul>  |
| Town of Peletier    | Maintains a townwide flood damage prevention ordinance and participates in the NFIP. | Carteret County Director of Planning and Development designated as Floodplain Administrator: <ul style="list-style-type: none"> <li>• Staff have attended FEMA SDAP workshop(s) and online training(s)</li> </ul> | Substantial damage/improvements determined by Floodplain Administrator with Carteret County Building Official coordination: <ul style="list-style-type: none"> <li>• Utilize knowledge gained through FEMA SI/SD Training in combination with County Building Inspector knowledge</li> <li>• Compile information into the FEMA SDE software, including the SDE tool, to determine if a structure has suffered substantial damage post-hazard</li> </ul>  | If work constitutes substantial improvements or repair of substantial damage: <ul style="list-style-type: none"> <li>• Substantial Damage Determination Letter is drafted and sent to property owner's mailing address as listed on County's tax parcel card</li> <li>• Indicates property must be brought into full compliance with the local Flood Damage Prevention and Protection Ordinance</li> <li>• If structure is deemed a life/safety issue, it will be posted by the building inspector</li> <li>• Includes supporting documentation pertaining to ICC eligibility and funding to demolish, relocate, or elevate structure</li> </ul> |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>       | <b>Applicable local floodplain management regulations</b>   | <b>Designated officials for SD/SI determinations and staff training</b>   | <b>Processes used by the community to make SD/SI determinations</b>   | <b>Communication procedures of the community for SD/SI requirements</b>   |
|---------------------------|---|---|---|---|
| Town of Pine Knoll Shores | Maintains a townwide flood damage prevention ordinance and participates in the NFIP and is a CRS community (Class 6)  | Town of Pine Knoll Shores Building Inspector designated as Floodplain Administrator   | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Use assessed value of structure (excluding the land) recorded by the Property Appraiser’s Officer or engage a licensed property appraiser</li> <li>• Obtain/submit a detailed and complete cost estimate signed by a licensed general contractor, including all damages or improvements</li> <li>• If structure is deemed substantially damaged, applicant must submit an elevation certificate to determine lowest floor elevation (lowest floor must be elevated to or above the 100-year flood elevation)</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required   |
| Craven County             | Maintains a separate countywide flood damage prevention ordinance and participates in the NFIP <ul style="list-style-type: none"> <li>• Building inspections done for Cove City, Dover, River Bend, Trent Woods, and Vanceboro</li> </ul> | Chief Building Inspector (Planning & Inspections Department) is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul>  | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required <ul style="list-style-type: none"> <li>• Encouraged to contact flood insurance provider to inquire about increased cost of compliance (ICC) policy</li> </ul> |
| City of Havelock          | Maintains a local flood damage prevention ordinance and participates in the NFIP  | Planning Director (Planning & Inspections Department) is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations        | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul>  | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required   |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b> | <b>Applicable local floodplain management regulations</b>                        | <b>Designated officials for SD/SI determinations and staff training</b>   | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>   |
|---------------------|--|---|--|---|
| City of New Bern    | Maintains a local flood damage prevention ordinance and participates in the NFIP | Chief Building Inspector (Development Services Department) is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required   |
| Town of Bridgeton   | Maintains a local flood damage prevention ordinance and participates in the NFIP | Floodplain Administrator is designated by the Board of Commissioners and trained to make determinations consistent with building codes and floodplain regulations                                 | Substantial damages/improvements determined by Floodplain Administrator: <ul style="list-style-type: none"> <li>• Floodplain development permit required prior to commencement of any development activities</li> </ul>  | If permitted work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required   |
| Town of Cove City   | Community is Non-Special Flood Hazard Area (NSFHA) and participates in the NFIP  | Mayor is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations  | Community is Non-Special Flood Hazard Area (NSFHA). If applicable, substantial damages/improvements would be determined by the Floodplain Administrator.   | Community is Non-Special Flood Hazard Area (NSFHA). If applicable, and if permitted work constitutes substantial improvement or repair of substantial damage, applicants would be notified and compliance with building codes and ordinances required |
| Town of Dover       | Community is Non-Special Flood Hazard Area (NSFHA) and participates in the NFIP  | Mayor is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations  | Community is Non-Special Flood Hazard Area (NSFHA). If applicable, substantial damages/improvements would be determined by the Floodplain Administrator.   | Community is Non-Special Flood Hazard Area (NSFHA). If applicable, and if permitted work constitutes substantial improvement or repair of substantial damage, applicants would be notified and compliance with building codes and ordinances required |



**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b> | <b>Applicable local floodplain management regulations</b>                             | <b>Designated officials for SD/SI determinations and staff training</b>  | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>   |
|---------------------|---|--|--|---|
| Town of River Bend  | Maintains a local flood damage prevention ordinance and participates in the NFIP      | Assistant Zoning Administrator (AZA) is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations  | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Town of Trent Woods | Maintains a local flood damage prevention ordinance and participates in the NFIP      | Town Zoning Administrator is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations   | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Town of Vanceboro   | Maintains a local flood damage prevention ordinance and participates in the NFIP      | Town Clerk is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations  | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Pamlico County      | Maintains a countywide flood damage prevention ordinance and participates in the NFIP | Pamlico County Emergency Planner (Emergency Management Department) is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations <ul style="list-style-type: none"> <li>• Pamlico County Building Inspections office is transitioning to floodplain management roles</li> </ul> | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b> | <b>Applicable local floodplain management regulations</b> | <b>Designated officials for SD/SI determinations and staff training</b>                    | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>   |
|---------------------|---|--|--|---|
| Town of Alliance    | Participating in the NFIP                                 | Pamlico County Building Inspections office is transitioning to floodplain management roles | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul>   | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Town of Arapahoe*   | Not participating in the NFIP                             | Pamlico County Building Inspections office is transitioning to floodplain management roles | Community not participating in NFIP. If applicable, substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Town of Bayboro     | Participating in the NFIP                                 | Pamlico County Building Inspections office is transitioning to floodplain management roles | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul>   | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Town of Grantsboro* | Not participating in the NFIP                             | Pamlico County Building Inspections office is transitioning to floodplain management roles | Community not participating in NFIP. If applicable, substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>     | <b>Applicable local floodplain management regulations</b>                        | <b>Designated officials for SD/SI determinations and staff training</b>   | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>   |
|-------------------------|--|---|--|---|
| Town of Mesic           | Participating in the NFIP  | Pamlico County Building Inspections office is transitioning to floodplain management roles  | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Town of Minnesott Beach | Maintains a local flood damage prevention ordinance and participates in the NFIP | Mayor is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations        | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Town of Oriental        | Maintains a local flood damage prevention ordinance and participates in the NFIP | Town Manager is designated as floodplain administrator and trained to make determinations consistent with building codes and floodplain regulations | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |
| Town of Stonewall       | Participating in the NFIP  | Pamlico County Building Inspections office is transitioning to floodplain management roles  | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b> | <b>Applicable local floodplain management regulations</b> | <b>Designated officials for SD/SI determinations and staff training</b>                    | <b>Processes used by the community to make SD/SI determinations</b>  | <b>Communication procedures of the community for SD/SI requirements</b>   |
|---------------------|---|--|--|---|
| Town of Vandemere   | Participating in the NFIP                                 | Pamlico County Building Inspections office is transitioning to floodplain management roles | Substantial damages/improvements determined by Floodplain Administrator with Building Official coordination: <ul style="list-style-type: none"> <li>• Estimation of market value or obtaining appraisal</li> <li>• Cost comparison to improve, to repair a damaged building to pre-damaged condition, or combined, vs. market value of building/structure</li> <li>• Determination of whether work constitutes substantial improvement/repair of damage</li> </ul> | If work constitutes substantial improvement or repair of substantial damage, applicants are notified and compliance with building codes and flood prevention ordinance required |

Source: Local governments

\*Communities not currently participating in the NFIP

**5.3.2 ADMINISTRATIVE AND TECHNICAL CAPABILITY**

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and if there are adequate personnel resources to complete these activities. The degree of intergovernmental coordination among departments will also affect administrative capability for the implementation and success of proposed mitigation activities.

Technical capability can generally be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in using geographic information systems (GIS) to analyze and assess community hazard vulnerability. The Local Capability Self-Assessment was used to capture information on administrative and technical capability through the identification of available staff and personnel resources.

Table 5.4 provides a summary of the Local Capability Self-Assessment results for the region with regard to relevant staff and personnel resources. A checkmark indicates the presence of a staff member(s) in that jurisdiction with the specified knowledge or skill.

**SECTION 5: CAPABILITY ASSESSMENT**

**Table 5.4 - Relevant Staff/Personnel Resources**

| Jurisdiction            | Planners with knowledge of land development and land management practices | Engineers or professionals trained in construction practices related to buildings and/or infrastructure | Planners or engineers with an understanding of natural and/or human-caused hazards | Building Official | Emergency manager | Floodplain manager | Land surveyors | Scientist familiar with the hazards of the community | Staff with education or expertise to assess the community's vulnerability to hazards | Personnel skilled in Geographic Information Systems (GIS) and/or HAZUS | Resource development staff or grant writers | Maintenance programs to reduce risk | Warning systems/services | Mutual Aid Agreements |
|-------------------------|---|---|--|-------------------|-------------------|--------------------|----------------|--|--|--|---|-------------------------------------|--------------------------|-----------------------|
| <b>Beaufort County</b>  | ✓   | ✓   | ✓  | ✓                 | ✓                 | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Aurora          |   |   |  |                   |                   |                    |                |  | ✓  |  |   |                                     | ✓                        |                       |
| Town of Bath            |   |   |  |                   |                   |                    |                |  | ✓  |  |   |                                     | ✓                        |                       |
| Town of Belhaven        | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Chocowinity     |   |   |  |                   |                   |                    |                |  | ✓  |  |   |                                     | ✓                        |                       |
| Town of Pantego         |   |   |  |                   |                   |                    |                |  | ✓  |  |   |                                     | ✓                        |                       |
| City of Washington      | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Washington Park |   |   |  |                   |                   |                    |                |  | ✓  |  |   |                                     | ✓                        |                       |
| <b>Carteret County</b>  | ✓   | ✓   | ✓  | ✓                 | ✓                 | ✓                  |                | ✓  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Atlantic Beach  | ✓   | ✓   | ✓  | ✓                 | ✓                 | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Beaufort        | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Bogue           | ✓   | ✓   | ✓  | ✓                 | ✓                 | ✓                  | ✓              |  | ✓  | ✓  | ✓   |                                     | ✓                        | ✓                     |
| Town of Cape Carteret   | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  |  | ✓   | ✓                                   | ✓                        |                       |
| Town of Cedar Point     | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  |  | ✓   | ✓                                   | ✓                        |                       |
| Town of Emerald Isle    | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Indian Beach    |   |   |  |                   |                   |                    |                |  |  |  |   |                                     | ✓                        |                       |
| Town of Morehead City   | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Newport         | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Peletier        |   |   |  |                   |                   |                    |                |  |  |  |   |                                     | ✓                        |                       |

**SECTION 5: CAPABILITY ASSESSMENT**

| Jurisdiction              | Planners with knowledge of land development and land management practices | Engineers or professionals trained in construction practices related to buildings and/or infrastructure | Planners or engineers with an understanding of natural and/or human-caused hazards | Building Official | Emergency manager | Floodplain manager | Land surveyors | Scientist familiar with the hazards of the community | Staff with education or expertise to assess the community's vulnerability to hazards | Personnel skilled in Geographic Information Systems (GIS) and/or HAZUS | Resource development staff or grant writers | Maintenance programs to reduce risk | Warning systems/services | Mutual Aid Agreements |
|---------------------------|---|---|--|-------------------|-------------------|--------------------|----------------|--|--|--|---|-------------------------------------|--------------------------|-----------------------|
| Town of Pine Knoll Shores | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| <b>Craven County</b>      | ✓   | ✓   | ✓  | ✓                 | ✓                 | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Bridgeton         |   |   |  |                   |                   | ✓                  |                |  | ✓  |  |   | ✓                                   | ✓                        |                       |
| Town of Cove City         |   |   |  |                   |                   | ✓                  |                |  | ✓  |  |   | ✓                                   | ✓                        |                       |
| Town of Dover             |   |   |  |                   |                   | ✓                  |                |  | ✓  |  |   | ✓                                   | ✓                        |                       |
| City of Havelock          | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| City of New Bern          | ✓   | ✓   | ✓  | ✓                 |                   | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of River Bend        |   | ✓   |  | ✓                 |                   | ✓                  |                |  | ✓  |  |   | ✓                                   | ✓                        | ✓                     |
| Town of Trent Woods       |   | ✓   |  | ✓                 |                   | ✓                  |                |  | ✓  |  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Vanceboro         |   |   |  |                   |                   | ✓                  |                |  | ✓  |  |   | ✓                                   | ✓                        |                       |
| <b>Pamlico County</b>     | ✓   | ✓   | ✓  | ✓                 | ✓                 | ✓                  |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Alliance          |   |   |  |                   |                   |                    |                |  |  |  |   |                                     | ✓                        |                       |
| Town of Arapahoe          |   |   |  |                   |                   |                    |                |  |  |  |   |                                     | ✓                        |                       |
| Town of Bayboro           |   |   |  |                   |                   |                    |                |  | ✓  |  |   |                                     | ✓                        |                       |
| Town of Grantsboro        |   |   |  |                   |                   |                    |                |  |  |  |   |                                     | ✓                        |                       |
| Town of Mesic             |   |   |  |                   |                   |                    |                |  | ✓  |  |   |                                     | ✓                        |                       |
| Town of Minnesott Beach   |   |   |  |                   |                   |                    |                |  | ✓  |  |   |                                     | ✓                        |                       |
| Town of Oriental          | ✓   |   | ✓  |                   |                   |                    | ✓              | ✓  | ✓  |  | ✓   | ✓                                   | ✓                        | ✓                     |
| Town of Stonewall         |   |   |  |                   |                   |                    |                |  |  |  |   |                                     | ✓                        |                       |
| Town of Vandemere         | ✓   | ✓   | ✓  |                   |                   |                    |                |  | ✓  | ✓  | ✓   | ✓                                   | ✓                        | ✓                     |

Source: Local Capability Assessment Survey

**5.3.3 FISCAL CAPABILITY**

The ability of a local government to implement mitigation actions is often dependent on the amount of money available. This may take the form of outside grant funding awards or locally based revenue and financing. The costs associated with mitigation policy and project implementation vary widely. In some cases, policies are tied primarily to staff time or administrative costs associated with the creation and monitoring of a given program. In other cases, direct expenses are linked to an actual project such as the acquisition of flood-prone houses, which can require a substantial commitment from local, state, and federal funding sources.

The Local Capability Self-Assessment was used to capture information on the region’s fiscal capability through the identification of locally available financial resources.

Table 5.5 provides a summary of the results for the region with regard to relevant fiscal resources. A checkmark indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for state and federal mitigation grant funds).

**Table 5.5 - Relevant Fiscal Resources**

| Jurisdiction            | Capital Improvement Programming | Community Development Block Grants (CDBG) | Special Purpose Taxes | Gas/Electric Utility Fees | Water/Sewer Fees | Stormwater Utility Fees | Development Impact Fees | General Obligation Bonds | Revenue Bonds | Special Tax Bonds | Other |
|-------------------------|---------------------------------|---|-----------------------|---------------------------|------------------|-------------------------|-------------------------|--------------------------|---------------|-------------------|-------|
| <b>Beaufort County</b>  |                                 |   |                       |                           | ✓                |                         |                         |                          |               |                   |       |
| Town of Aurora          |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| Town of Bath            |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| Town of Belhaven        | ✓                               | ✓   |                       | ✓                         | ✓                |                         |                         |                          |               |                   |       |
| Town of Chocowinity     |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| Town of Pantego         |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| City of Washington      | ✓                               |   |                       | ✓                         | ✓                |                         |                         |                          |               |                   |       |
| Town of Washington Park |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| <b>Carteret County</b>  | ✓                               | ✓   |                       |                           | ✓                |                         |                         |                          |               |                   |       |
| Town of Atlantic Beach  |                                 |   |                       |                           |                  | ✓                       |                         |                          |               |                   |       |
| Town of Beaufort        | ✓                               |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| Town of Bogue           |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| Town of Cape Carteret   |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| Town of Cedar Point     |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| Town of Emerald Isle    | ✓                               |   |                       |                           |                  |                         |                         |                          |               |                   |       |
| Town of Indian Beach    |                                 |   |                       |                           |                  |                         |                         |                          |               |                   |       |



**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>       | <b>Capital Improvement Programming</b> | <b>Community Development Block Grants (CDBG)</b> | <b>Special Purpose Taxes</b> | <b>Gas/Electric Utility Fees</b> | <b>Water/Sewer Fees</b> | <b>Stormwater Utility Fees</b> | <b>Development Impact Fees</b> | <b>General Obligation Bonds</b> | <b>Revenue Bonds</b> | <b>Special Tax Bonds</b> | <b>Other</b> |
|---------------------------|--|--|------------------------------|----------------------------------|-------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------|--------------------------|--------------|
| Town of Morehead City     | ✓                                      |  |                              |                                  | ✓                       |                                |                                |                                 |                      |                          |              |
| Town of Newport           | ✓                                      |  |                              |                                  | ✓                       |                                | ✓                              |                                 |                      |                          |              |
| Town of Peletier          |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Pine Knoll Shores |  |  |                              |                                  | ✓                       |                                |                                |                                 |                      |                          |              |
| <b>Craven County</b>      | ✓                                      | ✓  | ✓                            |                                  | ✓                       |                                |                                |                                 |                      |                          |              |
| Town of Bridgeton         |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Cove City         |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Dover             |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| City of Havelock          | ✓                                      |  |                              | ✓                                | ✓                       |                                |                                |                                 |                      |                          |              |
| City of New Bern          | ✓                                      | ✓  |                              | ✓                                | ✓                       | ✓                              |                                |                                 |                      |                          |              |
| Town of River Bend        |  | ✓  | ✓                            |                                  | ✓                       | ✓                              | ✓                              | ✓                               | ✓                    |                          |              |
| Town of Trent Woods       |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Vanceboro         |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| <b>Pamlico County</b>     |  |  |                              |                                  | ✓                       |                                |                                |                                 |                      |                          |              |
| Town of Alliance          |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Arapahoe          |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Bayboro           |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Grantsboro        |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Mesic             |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Minnesott Beach   |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Oriental          | ✓                                      |  |                              |                                  | ✓                       |                                |                                |                                 |                      |                          |              |
| Town of Stonewall         |  |  |                              |                                  |                         |                                |                                |                                 |                      |                          |              |
| Town of Vandemere         | ✓                                      | ✓  | ✓                            |                                  |                         |                                | ✓                              |                                 |                      |                          |              |

Source: Local Capability Assessment Survey

5.3.4 EDUCATION AND OUTREACH CAPABILITY

This type of local capability refers to education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information. Examples include natural disaster or safety related school programs; participation in community programs such as Firewise or StormReady; and activities conducted as part of hazard awareness campaigns such as a Tornado Awareness Month.

Table 5.6 provides a summary of the results for the region with regard to relevant education and outreach resources. A checkmark (✓) indicates that the given resource is locally available for hazard mitigation purposes. An asterisk (\*) indicates that a given resource is currently in the process of being obtained. A plus sign (+) indicates that a jurisdiction is covered for that item by a county program.

Table 5.6 - Education and Outreach Resources

| Jurisdiction            | Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | Natural disaster or safety related school programs | StormReady certification | Firewise Communities certification | Public-private partnership initiatives addressing disaster-related issues | Other |
|-------------------------|---|---|--|--------------------------|------------------------------------|---|-------|
| <b>Beaufort County</b>  | ✓   | ✓   | ✓  |                          |                                    | ✓   |       |
| Town of Aurora          |   |   |  |                          |                                    |   |       |
| Town of Bath            |   |   |  |                          |                                    |   |       |
| Town of Belhaven        | ✓   | ✓   | ✓  |                          |                                    | ✓   |       |
| Town of Chocowinity     |   |   |  |                          |                                    |   |       |
| Town of Pantego         |   |   |  |                          |                                    |   |       |
| City of Washington      | ✓   | ✓   | ✓  |                          |                                    |   |       |
| Town of Washington Park |   |   |  |                          |                                    |   |       |
| <b>Carteret County</b>  | ✓   | ✓   | ✓  | ✓                        |                                    | ✓   |       |
| Town of Atlantic Beach  | ✓   | ✓   |  |                          |                                    |   |       |
| Town of Beaufort        | ✓   | ✓   |  |                          |                                    |   |       |
| Town of Bogue           |   |   |  |                          |                                    |   |       |
| Town of Cape Carteret   |   |   |  |                          |                                    |   |       |
| Town of Cedar Point     |   |   |  |                          |                                    |   |       |
| Town of Emerald Isle    | ✓   | ✓   | ✓  |                          |                                    |   |       |
| Town of Indian Beach    |   |   |  |                          |                                    |   |       |
| Town of Morehead City   | ✓   | ✓   |  |                          |                                    |   |       |
| Town of Newport         | ✓   | ✓   |  |                          |                                    |   |       |
| Town of Peletier        |   |   |  |                          |                                    |   |       |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>       | <b>Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.</b> | <b>Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)</b> | <b>Natural disaster or safety related school programs</b> | <b>StormReady certification</b> | <b>Firewise Communities certification</b> | <b>Public-private partnership initiatives addressing disaster-related issues</b> | <b>Other</b> |
|---------------------------|--|--|---|---------------------------------|---|--|--------------|
| Town of Pine Knoll Shores | ✓  | ✓  |   |                                 |   |  |              |
| <b>Craven County</b>      | ✓  | ✓  | ✓   | ✓                               |   | ✓  |              |
| Town of Bridgeton         |  |  |   |                                 |   |  |              |
| Town of Cove City         |  |  |   |                                 |   |  |              |
| Town of Dover             |  |  |   |                                 |   |  |              |
| City of Havelock          | ✓  | ✓  |   |                                 |   | ✓  |              |
| City of New Bern          | ✓  | ✓  |   |                                 |   | ✓  |              |
| Town of River Bend        | ✓  | ✓  |   |                                 |   |  |              |
| Town of Trent Woods       |  | ✓  |   |                                 |   |  |              |
| Town of Vanceboro         |  |  |   |                                 |   |  |              |
| <b>Pamlico County</b>     | ✓  | ✓  | ✓   | ✓                               |   |  |              |
| Town of Alliance          |  |  |   |                                 |   |  |              |
| Town of Arapahoe          |  |  |   |                                 |   |  |              |
| Town of Bayboro           |  |  |   |                                 |   |  |              |
| Town of Grantsboro        |  |  |   |                                 |   |  |              |
| Town of Mesic             |  |  |   |                                 |   |  |              |
| Town of Minnesott Beach   |  |  |   |                                 |   |  |              |
| Town of Oriental          | ✓  | ✓  |   | *                               |   | ✓  |              |
| Town of Stonewall         |  |  |   |                                 |   |  |              |
| Town of Vandemere         | ✓  | ✓  | +   |                                 |   | ✓  |              |

Source: Local Capability Assessment Survey

**5.3.5 MITIGATION CAPABILITY**

This type of local capability refers to the mitigation strategies and actions that are developed by the communities in this plan.

Table 5.7 provides a summary of the results for the planning area with regard to relevant mitigation resources. A checkmark (✓) indicates that the given resource is locally available for hazard mitigation purposes.

**Table 5.7 - Mitigation Resources**

| <b>Jurisdiction</b>       | <b>Do you apply for mitigation grant funding?</b> | <b>Do you perform reconstruction projects?</b> | <b>Do you perform building elevations?</b> | <b>Do you perform acquisitions?</b> |
|---------------------------|---|--|--|-------------------------------------|
| <b>Beaufort County</b>    | ✓   | ✓  | ✓  | ✓                                   |
| Town of Aurora            | ✓   | ✓  | ✓  | ✓                                   |
| Town of Bath              | ✓   | ✓  | ✓  | ✓                                   |
| Town of Belhaven          | ✓   | ✓  | ✓  | ✓                                   |
| Town of Chocowinity       | ✓   | ✓  | ✓  | ✓                                   |
| Town of Pantego           | ✓   | ✓  | ✓  | ✓                                   |
| City of Washington        | ✓   | ✓  | ✓  | ✓                                   |
| Town of Washington Park   | ✓   | ✓  | ✓  | ✓                                   |
| <b>Carteret County</b>    | ✓   | ✓  | ✓  |                                     |
| Town of Atlantic Beach    | ✓   | ✓  | ✓  | ✓                                   |
| Town of Beaufort          | ✓   | ✓  | ✓  | ✓                                   |
| Town of Bogue             | ✓   | ✓  | ✓  | ✓                                   |
| Town of Cape Carteret     | ✓   | ✓  | ✓  | ✓                                   |
| Town of Cedar Point       | ✓   | ✓  | ✓  | ✓                                   |
| Town of Emerald Isle      | ✓   | ✓  | ✓  | ✓                                   |
| Town of Indian Beach      | ✓   | ✓  | ✓  | ✓                                   |
| Town of Morehead City     | ✓   | ✓  | ✓  | ✓                                   |
| Town of Newport           | ✓   |  |  |                                     |
| Town of Peletier          | ✓   | ✓  | ✓  | ✓                                   |
| Town of Pine Knoll Shores | ✓   | ✓  | ✓  | ✓                                   |
| <b>Craven County</b>      | ✓   | ✓  | ✓  | ✓                                   |
| Town of Bridgeton         | ✓   | ✓  | ✓  | ✓                                   |
| Town of Cove City         | ✓   | ✓  | ✓  | ✓                                   |
| Town of Dover             | ✓   | ✓  | ✓  | ✓                                   |
| City of Havelock          | ✓   | ✓  | ✓  | ✓                                   |
| City of New Bern          | ✓   | ✓  | ✓  | ✓                                   |
| Town of River Bend        | ✓   | ✓  | ✓  | ✓                                   |
| Town of Trent Woods       | ✓   | ✓  | ✓  | ✓                                   |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>     | <b>Do you apply for mitigation grant funding?</b> | <b>Do you perform reconstruction projects?</b> | <b>Do you perform building elevations?</b> | <b>Do you perform acquisitions?</b> |
|-------------------------|---|--|--|-------------------------------------|
| Town of Vanceboro       | ✓   | ✓  | ✓  | ✓                                   |
| <b>Pamlico County</b>   | ✓   | ✓  | ✓  | ✓                                   |
| Town of Alliance        | ✓   | ✓  | ✓  | ✓                                   |
| Town of Arapahoe        | ✓   | ✓  | ✓  | ✓                                   |
| Town of Bayboro         | ✓   | ✓  | ✓  | ✓                                   |
| Town of Grantsboro      | ✓   | ✓  | ✓  | ✓                                   |
| Town of Mesic           | ✓   | ✓  | ✓  | ✓                                   |
| Town of Minnesott Beach | ✓   | ✓  | ✓  | ✓                                   |
| Town of Oriental        | ✓   | ✓  | ✓  | ✓                                   |
| Town of Stonewall       | ✓   | ✓  | ✓  | ✓                                   |
| Town of Vandemere       | ✓   | ✓  | ✓  | ✓                                   |

**5.3.6 POLITICAL CAPABILITY**

One of the most difficult capabilities to evaluate involves the political will of a jurisdiction to enact meaningful policies and projects designed to reduce the impact of future hazard events. Hazard mitigation may not be a local priority, or it may conflict with or be seen as an impediment to other goals of the community, such as growth and economic development. Therefore, the local political climate must be considered in designing mitigation strategies, as it could be the most difficult hurdle to overcome in accomplishing their adoption and implementation.

The Local Capability Self-Assessment was used to capture information on political capability of the region. Survey respondents were asked to rate political support as they perceive it and identify general examples of local political capability, such as guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum state or federal requirements (e.g., building codes, floodplain management, etc.). The comments provided by the participating jurisdictions are listed below:

HMPC representatives from all participating jurisdictions responded that political leaders are at least potentially willing to implement mitigation measures. Additionally, many of the participating jurisdictions have some local standards that exceed state requirements. For example, Washington, Washington Park, Atlantic Beach, Beaufort, Cedar Point, Morehead City, Newport, Pine Knoll Shores, and Havelock have a one-foot freeboard requirement; Craven County, Pamlico County, Cape Carteret, Emerald Isle, New Bern, River Bend, Vanceboro, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, and Vandemere require a two-foot freeboard.

**5.3.7 LOCAL SELF-ASSESSMENT RATING**

In addition to the inventory and analysis of specific local capabilities, the Local Capability Self-Assessment asked counties and local jurisdictions within the Pamlico Sound region to assign a rating of

**SECTION 5: CAPABILITY ASSESSMENT**

their perceived capability across each of the capability categories and overall as either “limited,” “moderate,” or “high.”

Table 5.8 summarizes the results of the self-assessment ratings for each community in the Pamlico Sound Region.

**Table 5.8 - Self-Assessment of Capability**

| <b>Jurisdiction</b>       | <b>Plans, Ordinances, Codes and Programs</b> | <b>Administrative and Technical Capability</b> | <b>Fiscal Capability</b> | <b>Education and Outreach Capability</b> | <b>Mitigation Capability</b> | <b>Political Capability</b> | <b>OVERALL CAPABILITY</b> |
|---------------------------|--|--|--------------------------|--|------------------------------|-----------------------------|---------------------------|
| <b>Beaufort County</b>    | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Aurora            | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| Town of Bath              | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| Town of Belhaven          | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Chocowinity       | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| Town of Pantego           | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| City of Washington        | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Washington Park   | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| <b>Carteret County</b>    | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Atlantic Beach    | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Beaufort          | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Bogue             | Moderate                                     | Moderate                                       | Limited                  | Limited                                  | Moderate                     | Limited                     | Moderate                  |
| Town of Cape Carteret     | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| Town of Cedar Point       | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| Town of Emerald Isle      | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Indian Beach      | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| Town of Morehead City     | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Newport           | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Peletier          | Limited                                      | Limited  | Limited                  | Limited                                  | Limited                      | Limited                     | Limited                   |
| Town of Pine Knoll Shores | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| <b>Craven County</b>      | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Bridgeton         | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| Town of Cove City         | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| Town of Dover             | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| City of Havelock          | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| City of New Bern          | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of River Bend        | Moderate                                     | Moderate                                       | Moderate                 | Limited                                  | Moderate                     | Moderate                    | Moderate                  |
| Town of Trent Woods       | High   | High   | High                     | High                                     | High                         | High                        | High                      |
| Town of Vanceboro         | Moderate                                     | Moderate                                       | Moderate                 | Moderate                                 | Moderate                     | Moderate                    | Moderate                  |
| <b>Pamlico County</b>     | High   | High   | High                     | High                                     | High                         | High                        | High                      |

**SECTION 5: CAPABILITY ASSESSMENT**

| Jurisdiction            | Plans, Ordinances, Codes and Programs | Administrative and Technical Capability | Fiscal Capability | Education and Outreach Capability | Mitigation Capability | Political Capability | OVERALL CAPABILITY |
|-------------------------|---------------------------------------|---|-------------------|-----------------------------------|-----------------------|----------------------|--------------------|
| Town of Alliance        | Limited                               | Limited                                 | Limited           | Limited                           | Limited               | Limited              | Limited            |
| Town of Arapahoe        | Limited                               | Limited                                 | Limited           | Limited                           | Limited               | Limited              | Limited            |
| Town of Bayboro         | Limited                               | Limited                                 | Limited           | Limited                           | Limited               | Limited              | Limited            |
| Town of Grantsboro      | Limited                               | Limited                                 | Limited           | Limited                           | Limited               | Limited              | Limited            |
| Town of Mesic           | Limited                               | Limited                                 | Limited           | Limited                           | Limited               | Limited              | Limited            |
| Town of Minnesott Beach | Limited                               | Limited                                 | Limited           | Limited                           | Limited               | Limited              | Limited            |
| Town of Oriental        | High                                  | High                                    | High              | High                              | High                  | High                 | High               |
| Town of Stonewall       | Limited                               | Limited                                 | Limited           | Limited                           | Limited               | Limited              | Limited            |
| Town of Vandemere       | Moderate                              | Moderate                                | Moderate          | Moderate                          | Moderate              | Moderate             | Moderate           |

Source: Local Capability Assessment Survey

## 5.4 CONCLUSIONS ON LOCAL CAPABILITY

In order to form meaningful conclusions on the assessment of local capability, a quantitative scoring methodology was designed and applied to results of the Local Capability Assessment Survey. This methodology attempts to assess the overall level of capability of the Pamlico Sound region to implement hazard mitigation actions.

Table 5.9 shows the results of the capability assessment using the designed scoring methodology. The capability score is based solely on the information provided by local officials in response to the Local Capability Self-Assessment. According to the assessment, the average local capability score for all responding jurisdictions is 73, which falls into the Moderate capability ranking.

**Table 5.9 - Capability Assessment Results**

| Jurisdiction            | Overall Capability Score | Overall Capability Rating |
|-------------------------|--------------------------|---------------------------|
| Beaufort County         | 87                       | Moderate                  |
| Town of Aurora          | 60                       | Low                       |
| Town of Bath            | 60                       | Low                       |
| Town of Belhaven        | 100                      | Moderate                  |
| Town of Chocowinity     | 60                       | Low                       |
| Town of Pantego         | 60                       | Low                       |
| City of Washington      | 106                      | High                      |
| Town of Washington Park | 72                       | Moderate                  |
| Carteret County         | 102                      | High                      |
| Town of Atlantic Beach  | 95                       | Moderate                  |
| Town of Beaufort        | 91                       | Moderate                  |
| Town of Bogue           | 64                       | Low                       |

**SECTION 5: CAPABILITY ASSESSMENT**

| <b>Jurisdiction</b>       | <b>Overall Capability Score</b> | <b>Overall Capability Rating</b> |
|---------------------------|---------------------------------|----------------------------------|
| Town of Cape Carteret     | 70                              | Low                              |
| Town of Cedar Point       | 70                              | Low                              |
| Town of Emerald Isle      | 100                             | Moderate                         |
| Town of Indian Beach      | 56                              | Low                              |
| Town of Morehead City     | 96                              | Moderate                         |
| Town of Newport           | 84                              | Moderate                         |
| Town of Peletier          | 49                              | Low                              |
| Town of Pine Knoll Shores | 88                              | Moderate                         |
| Craven County             | 100                             | Moderate                         |
| Town of Bridgeton         | 59                              | Low                              |
| Town of Cove City         | 59                              | Low                              |
| Town of Dover             | 59                              | Low                              |
| City of Havelock          | 97                              | Moderate                         |
| City of New Bern          | 99                              | Moderate                         |
| Town of River Bend        | 73                              | Moderate                         |
| Town of Trent Woods       | 74                              | Moderate                         |
| Town of Vanceboro         | 59                              | Low                              |
| Pamlico County            | 87                              | Moderate                         |
| Town of Alliance          | 49                              | Low                              |
| Town of Arapahoe          | 43                              | Low                              |
| Town of Bayboro           | 53                              | Low                              |
| Town of Grantsboro        | 43                              | Low                              |
| Town of Mesic             | 53                              | Low                              |
| Town of Minnesott Beach   | 53                              | Low                              |
| Town of Oriental          | 92                              | Moderate                         |
| Town of Stonewall         | 49                              | Low                              |
| Town of Vandemere         | 80                              | Moderate                         |

Source: Local Capability Assessment Survey, NCEM Risk Management Tool

As previously discussed, one of the reasons for conducting a capability assessment is to examine local capabilities to detect any existing gaps or weaknesses within ongoing government activities that could hinder proposed mitigation activities and possibly exacerbate community hazard vulnerability. These gaps or weaknesses have been identified, for each jurisdiction, in the tables found throughout this section. The participating jurisdictions used the capability assessment as part of the basis for the mitigation actions that are identified in Section 7; therefore, each jurisdiction addresses their ability to expand on and improve their existing capabilities through the identification of their mitigation actions.



# 6 MITIGATION STRATEGY

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

This section describes the process for developing the mitigation strategy for the Pamlico Sound Regional Hazard Mitigation Plan. It describes how the Region met the requirements for Planning Step 6 (Set Goals), Planning Step 7 (Review Possible Activities), and Planning Step 8 (Draft an Action Plan). This section includes the following sub-sections:

- 6.1 Goals and Objectives
- 6.2 Identification & Analysis of Mitigation Activities

## 6.1 GOALS AND OBJECTIVES

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

Goal setting builds upon the findings of Section 4, which documents the hazards and associated risks that threaten the Pamlico Sound Region, and Section 5, which evaluates the capacity of the Region to reduce the impact of those hazards. The intent of goal setting is to identify areas where feasible actions can be taken or improvements to existing capabilities can be made so that community vulnerability to hazards is reduced. Goals are also necessary to guide the review of possible mitigation measures. This plan needs recommend actions that are appropriate for the Region. Mitigation goals need to reflect community priorities and should be consistent with other local plans.

- **Goals** are general guidelines that explain what is to be achieved. They are usually broad-based policy type statements, long term and represent global visions. Goals help define the benefits that the plan is trying to achieve.
- **Objectives** are short term aims that, when combined, form a strategy or course of action to meet a goal. Unlike goals, objectives are specific and measurable.

### 6.1.1 COORDINATION WITH OTHER PLANNING EFFORTS

The goals of this plan need to be consistent with and complement the goals of other local planning efforts. The primary planning documents that the goals of this plan should complement and be consistent with are the participating jurisdictions’ comprehensive plans. Comprehensive plans are important because they are developed and designed to guide future growth within their communities so they encompass long-term strategies and can be critical to reducing long term vulnerabilities. Keeping the Hazard Mitigation Plan and Comprehensive Plans consistent ensures that land development is done with awareness and understanding of hazard risk and that mitigation projects complement rather than contradict community development objectives.

### 6.1.2 GOAL SETTING

At the third planning meeting, the HMPC reviewed and discussed the goals from the 2020 plan. The conversation highlighted the importance of having the goals reflect community input and ensuring that future planning reduces vulnerability in local communities. The existing mitigation goals were found to be aligned with current priorities with very minor revisions needed. The HMPC noted the strong momentum of mitigation and resilience, with significant funding opportunities available.

Specific suggestions for revisions included making Goal 1 more concise and adding language to the goals and objectives to encourage retreat from hazardous areas, limit development in the floodplain, and reinforce infrastructure. These revisions are incorporated into the revised and reaffirmed goals and objectives of this plan update, which are detailed below in Section 6.1.3.

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### 6.1.3 RESULTING GOALS AND OBJECTIVES

The HMPC agreed upon four general goals for this planning effort and included specific objectives in support of each goal. The refined goals and objectives are as follows:

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**Goal 1 – Reduce the risk to people and property from natural hazards through land development regulations, capital improvements, planning/investment, and proactive long-range planning for land use and post-disaster redevelopment.**

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**Objective 1.1:** Reinforce infrastructure and reduce the length of time that local infrastructure systems are inoperable due to hazard impacts.

**Objective 1.2:** Limit development and preserve open space in floodplain areas.

**Objective 1.3:** Reduce flooding and erosion vulnerability through land development initiatives, maintenance, and improvement of storm drainage.

**Objective 1.4:** Encourage retreat from hazardous areas.

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**Goal 2 – Provide education and notification to citizens that empowers them to protect themselves and their families from natural hazards.**

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**Objective 2.1:** Ensure adequate warning and notification relating to hazards including efforts to establish well publicized, accessible shelter facilities that meet national standards for safety and supply.

**Objective 2.2:** Improve the public awareness and understanding of local vulnerability to hazards and improve disaster warning/post-disaster information efforts.

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**Goal 3 – Fulfill Federal and State requirements for receipt of future disaster recovery and hazard mitigation assistance.**

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**Objective 3.1:** Improve all participating jurisdictions' general hazard mitigation capability.

**Objective 3.2:** Work toward compliance with all State and Federal planning and regulatory requirements including standards for Local Emergency Operations Plans, Flood Damage Prevention Ordinances, Continuity of Operations Plans, and the Community Rating System.

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**Goal 4 – Improve interjurisdictional/interagency cooperation and coordination, especially regarding the reduction of natural hazard impacts.**

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**Objective 4.1:** Reduce the risk of damage from wildfires to existing and future development.

**Objective 4.2:** Ensure effective local/interagency communication and response during disaster events.

## 6.2 IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIVITIES

**Requirement §201.6(c)(3)(ii): [The mitigation strategy section shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.**

To identify and select mitigation projects that support the mitigation goals and objectives, the risks and vulnerabilities associated with all hazards identified and evaluated in Section 4 Risk Assessment were evaluated for mitigation opportunities. The HMPC analyzed viable mitigation options that supported the identified goals and objectives, addressed key problems, risks, or vulnerabilities, and aligned with other local plans and efforts. The HMPC was provided with the following list of mitigation categories which are utilized as part of the CRS planning process but are also applicable to multi-hazard mitigation:

- Prevention
- Property Protection
- Natural Resource Protection
- Emergency Services
- Structural Projects
- Public Information and Outreach

The HMPC was also provided with examples of potential mitigation actions for each of the above categories. The HMPC was instructed to consider both future and existing buildings in evaluating possible mitigation actions. Facilitated discussions took place to examine and analyze the options. The HMPC also considered which actions from the previous plan that were not already completed should be continued in this action plan.

More details on mitigation alternatives considered by the HMPC are provided in Appendix C.

### 6.2.1 PRIORITIZATION PROCESS

In the process of identifying continuing and new mitigation actions, the HMPC was provided with a set of prioritization criteria to assist in deciding why one recommended action might be more important, more effective, or more likely to be implemented than another. HMPC members were asked to consider a set of prioritization criteria, which were grouped into three categories: Suitability, Risk Reduction, and Cost. The criteria for the prioritization process included the following:

- **Suitability**
  - Appropriateness of Action
  - Community Acceptance
  - Technical and Administrative Feasibility
  - Environmental Impact
  - Legal Conformance
  - Consistency with Existing Plans and Other Community Goals

- **Risk Reduction**
  - Scope of Benefits
  - Potential to Save Lives
  - Importance of Benefits
  - Level of Inconvenience or Unintended Consequence
  - Losses Avoided
  - Number of People to Benefit
- **Cost**
  - Estimate of Upfront Cost
  - Estimate of Ongoing Cost
  - Benefit to Cost Ratio
  - Financing Availability
  - Affordability
  - Elimination of Repetitive Damages

In accordance with the DMA requirements, an emphasis was placed on the importance of a benefit-cost analysis in determining action priority, as reflected in the prioritization criteria above. For each action, the HMPC considered the benefit-cost analysis in terms of:

- Ability of the action to address the problem
- Contribution of the action to save life or property
- Available technical and administrative resources for implementation
- Availability of funding and perceived cost-effectiveness

The consideration of these criteria helped to prioritize and refine mitigation actions but did not constitute a full benefit-cost analysis. The cost-effectiveness of any mitigation alternative will be considered in greater detail through performing benefit-cost project analyses when seeking FEMA mitigation grant funding for eligible actions associated with this plan.

Using these prioritization criteria, the HMPC assigned each action a ranking of High, Medium, or Low priority. The prioritization ranking for each mitigation action considered by the HMPC is provided in Section 7 Mitigation Action Plans.

## 7 MITIGATION ACTION PLANS

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

This section provides the mitigation action plan for each participating jurisdiction, grouped by county. To improve regional coordination and increase capability to implement projects, many actions are multi-jurisdictional but will be led by the respective county.

The following acronyms are used to identify potential funding sources for each action:

- ARC – American Red Cross
- BRIC – Building Resilient Infrastructure and Communities
- FEMA – Federal Emergency Management Agency
- GF – General Fund
- HMGP – Hazard Mitigation Grant Program
- NCDEQ – North Carolina Department of Environmental Quality
- NCDOT – North Carolina Department of Transportation
- NCDPS – North Carolina Department of Public Safety
- UHMA – Unified Hazard Mitigation Assistance
- USDA – United States Department of Agriculture

Table 7.1 – Mitigation Action Plan, Beaufort County

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule        | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|-------------------|----------|------------------|----------|---|------------------|---------------------------|--------------------------------|---------------|--|
| B1       | Continue to coordinate all development/planning decisions with review of appropriate CAMA LUP's including stated redevelopment policies and actions.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | Med      | 1.3              | PP       | <b>Beaufort County Planning,</b><br>Municipal Administrations   | To Be Determined | GF, NCDEQ                 | Other - as opportunities arise | Carry Forward | All jurisdictions currently utilize their respective CAMA Land Use Plan when making decisions regarding development proposals.   |
| B2       | Maintain reciprocal mutual aid agreements with surrounding communities for fire protection and emergency response.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 4.2              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations, Volunteer Fire Departments   | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years         | Carry Forward | Beaufort County Emergency Services maintains mutual aid agreements with neighboring communities and updates them annually. County also participates in statewide mutual aid agreement, updated annually.   |
| B3       | Annually evaluate adequacy of existing local early warning and emergency response communications equipment and prepare annual capital improvements plans to improve early warning and communication effectiveness before, during, and following disaster events. Complete needs assessment, purchase and installation of additional stream gages connected to a flood warning system and provision of signage and other means of communicating risk information to the public. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 2.1              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations, Beaufort County Soil & Water, Beaufort County Public Works, Beaufort County Inspections, Committee of 100, Mid-East Commission, North Carolina Department of Transportation, Department of Environmental and Natural Resources, Newport / Morehead City, NC National Weather Service | Staff Time       | GF, NCDPS, FEMA, BRIC     | Ongoing - next 5 years         | Carry Forward | Beaufort County Emergency Services reviews its emergency notification system annually in coordination with tabletop exercises associated with the EOP. County started a new mass notification software in the past two years, and additional updates are anticipated to begin in the summer of 2025. County has applied for BRIC funding for flood gages and flood gage poles. |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)                                    | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|--|----------|------------------|----------|---|------------------|---------------------------|-------------------------|---------------|--|
| B4       | Develop standard protocols for training/certification of volunteer staff for shelter management, traffic control, first aid, etc., to improve volunteer response capability during and following disaster events, including coordination with American Red Cross personnel on an annual basis. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 2.1              | ES       | <b>Beaufort County Emergency Services,</b><br>Beaufort County Social Services | To Be Determined | GF, NCDPS, ARC            | 2-3 years               | Carry Forward | Beaufort County Emergency Services continues to work towards improving emergency shelters and updates to the state CRES plan. A list of shelters is maintained on the County website. In 2024, the County has developed a new Short Term Recovery Plan, Long Term Recovery Plan, Disaster Reunification Plan, and has completed a THIRA. The County established a Long Term Recovery group that meets biannually before and after storm season. SPR is underway. County updated to following CPG version 3. Update to follow FEMA NIMS procedures. |
| B5       | Complete an annual evaluation of each designated emergency shelter, including structural inspection, resource inventory, staffing plan, and vulnerability assessment, including coordination with American Red Cross (ARC) personnel.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 2.1              | ES       | <b>Beaufort County Emergency Services,</b><br>Beaufort County Social Services | To Be Determined | GF, NCDPS, ARC            | 2-3 years               | Carry Forward | Beaufort County Emergency Services continues to work towards improving emergency shelters and updates to the state CRES plan. A list of shelters is maintained on the County website. Annually update contracts with ARC.  |
| B6       | Provide citizens and visitors with maps of evacuation routes which will facilitate the evacuation of the county in case of a hazardous event.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | High     | 2.2              | ES, PIO  | <b>Beaufort County Emergency Services,</b><br>Beaufort County Social Services | To Be Determined | GF, NCDPS, ARC            | 2-3 years               | Carry Forward | Evacuation maps are currently available on the County website or through the Emergency Services Department. Action revised as hard copy maps are no longer a priority.   |
| B7       | Continue to monitor and establish programs to maintain continuity of government operations through annual review and update of the Continuity of Operations Plan (COOP).   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards  | Med      | 4.2              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations       | Staff Time       | GF, NCDPS                 | Ongoing - as needed     | Carry Forward | The County COOP is reviewed annually and updated as necessary.   |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|--|-------------------|----------|------------------|----------|---|------------------|---------------------------|-------------------------|---------------|---|
| B8       | Continue to support and participate in the directives of the County Emergency Operations Plan (EOP). The EOP includes evacuation procedures and response to hazards not addressed in this plan such as hazardous materials, petroleum products, hazardous waste, nuclear threat/attack, and civil disorder. The County will review and update the EOP annually to ensure that it coordinates with the most recent NCEM and NCOEMS directives.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | Med      | 3.2              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations                             | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Beaufort County Emergency Services works closely with all participating municipalities to review and update the Emergency Operations Plan (EOP) on an annual basis. The County completed a full rewrite of the EOP in 2024. The basic EOP is posted on the county's <a href="#">website</a> .   |
| B9       | Continue to apply for grant funds, allocate local funding, and work with local electric service providers to procure and maintain back-up generators/transfer switches for all critical public facilities, with an emphasis on emergency services facilities, critical water/sewer facilities, and shelter facilities. Evaluate the equipment on a regular basis to assure it continues to meet the needs of the operations occurring at each facility. Back-up generators are still needed at Southside High School and John Cotten Tayloe Elementary School. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 1.1              | PP       | <b>Beaufort County Emergency Services,</b><br>Independent Facility Operators, Town Public Utilities | To Be Determined | GF, NCDPS, NCDOT, HMGP    | Ongoing - next 5 years  | Carry Forward | Beaufort County Emergency Services will continue to work towards establishing permanent pad mount generators at all critical facilities. This effort will initially focus on primary and backup shelter facilities. Recently won LESCGP FY24 grant for transfer switches to improve shelter capacity at S.W. Snowden Elementary School. |
| B10      | Hold an annual public hazard mitigation meeting, attended by the HMPC and participating jurisdictions, to educate the public and elected officials and receive comments about the location of high risk facilities/development, the jurisdictions' overall vulnerability to natural and man-made hazards, and the jurisdictions' hazards mitigation efforts.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 2.2              | PIO      | <b>Beaufort County Emergency Services,</b><br>Beaufort County Planning, Municipal Administrations   | Staff Time       | GF                        | 1 Year                  | Carry Forward | Beaufort County Emergency Services holds a public officials conference at least annually to educate decision makers on the vulnerability to hazards and mitigation efforts.   |
| B11      | Maintain the Hazard Mitigation Planning Committee (HMPC) and hold annual HMPC meetings to continue relationship-building and communicate about mitigation measures taking place throughout the community.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 3.1              | P        | <b>Pamlico Sound HMPC,</b><br>Beaufort County Administration, Municipal Administrations             | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | The HMPC will be maintained to ensure implementation and update the PSRHMP.   |



SECTION 7: MITIGATION ACTION PLANS

| Action # | Description   | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)                               | Estimated Cost   | Potential Funding Sources             | Implementation Schedule            | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|---|--|--|----------|------------------|----------|--|------------------|---------------------------------------|------------------------------------|---------------|---|
| B12      | Maintain continual contact/working relationship with electric service providers in the county to address the following:<br>1) Disaster preparedness techniques (e.g., tree trimming, vegetation planting requirements, pole replacement);<br>2) Identification of critical electrical facilities needing retrofit or upgrade and map with elevation reference marks;<br>3) Identification of problem areas and potential solutions; and<br>4) Communication with county officials during and immediately after a natural hazard event that results in loss of electrical power. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Tornado & Thunderstorm, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 1.1              | P        | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations  | Staff Time       | GF, NCDPS, Electric Service Providers | Other - meet annually              | Carry Forward | Beaufort County Emergency Services continues to meet annually with all electric service providers operating in the county.  |
| B13      | Monitor trees and vegetation on publicly owned property to assure that no property or utility damage will occur as a result of diseased or dying trees or other vegetation.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Flooding, Hurricanes & Coastal Hazards, Severe Winter Weather, Tornado & Thunderstorm  | Med      | 1.1              | ES       | <b>Beaufort County Public Works,</b><br>Municipal Administrations        | Staff Time       | GF                                    | Ongoing - over the next five years | Carry Forward | Beaufort County, as well as municipal, public works departments will maintain trees on public property and in right of ways to minimize the impact of falling limbs and trees in the event of a natural disaster. |
| B14      | Continue to maintain all property acquired with public mitigation funds within the Special Flood Hazard Area (SFHA) as undisturbed open space in perpetuity. Continue to pro-actively establish open space within the floodplain and floodway as grant funds become available to carry out this initiative.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | High     | 1.2              | PP       | <b>Beaufort County Administration,</b><br>Municipal Administrations      | To Be Determined | GF, NCDPS                             | Ongoing - in process               | Carry Forward | All jurisdictions actively maintain these sites and promote reuse that is permitted under FEMA guidelines.  |
| B15      | Integrate new greenway and public park improvements into comprehensive planning and capital improvement efforts for land not suitable for development (including coordination with all local certified CAMA Land Use Plans).  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | High     | 1.2              | P, SP    | <b>Beaufort County Parks and Recreation,</b><br>Beaufort County Planning | To Be Determined | GF, NCDEQ                             | Other - as opportunities arise     | Carry Forward | Beaufort County updated its certified CAMA Land Use plan this year and will use the updated LUP to promote these strategies.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost | Potential Funding Sources   | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|---|----------|------------------|----------|---|----------------|-----------------------------|-------------------------|---------------|--|
| B16      | Annually review local floodplain ordinances to provide improved flood protection standards and require freeboard for retrofitting and new construction as required by NC State Building Code. The County will consider establishing a freeboard requirement.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure | Med      | 3.2              | PP       | <b>Beaufort County Administration,</b><br>Municipal NFIP participants                                       | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | All jurisdictions will review and amend their respective Flood Damage Prevention Ordinances. All jurisdictions will consider establishing a freeboard requirement, except for Washington and Washington Park who already have a 2-foot freeboard established.  |
| B17      | Maintain current listings of Severe Repetitive Loss properties and conduct annual outreach activities to encourage homeowners to participate in FEMA-sponsored residential acquisition and elevation programs. Continue to apply for HMGP/HMA funding for residential acquisition and elevation of vulnerable structures.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure | Med      | 2.2              | PP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS, HMGP, BRIC, UHMA | Ongoing - as needed     | Carry Forward | Beaufort County in coordination with all participating municipal jurisdictions will utilize annual as well as post-disaster funding to treat repetitive loss properties through elevation or acquisition/ demolition. The County holds meetings 2-3 times per year as grant funding becomes available to educate property owners about mitigation opportunities. |
| B18      | Encourage County Commissioners and elected officials of non-CRS communities to participate in the Community Rating System.   | Beaufort County, Aurora, Bath, Chocowinity, Pantego  | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure | High     | 1.3              | PP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF                          | Ongoing - next 5 years  | Carry Forward | Non-CRS communities will consider joining the program through implementation of this plan. Belhaven, Washington and Washington Park will continue to implement their program annually.   |
| B19      | Continue to work with local real estate agencies and manufactured home vendors to ensure that agents are informing clients when property for sale is located within an SFHA. The county will provide these agencies with brochures documenting the concerns relating to development located within the flood prone areas and ways that homeowners may make their home more disaster resistant to strong winds, lightning, and heavy rains. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure | High     | 2.2              | PP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | This activity is carried out by the County for the benefit of all Citizens including all participating municipal jurisdictions.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost | Potential Funding Sources   | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|--|--|----------|------------------|----------|---|----------------|-----------------------------|-------------------------|---------------|---|
| B20      | Make information regarding hazards and development regulations within floodplains available through the following:<br><br>1) Ensure that local libraries maintain information relating to flooding and flood protection,<br><br>2) Provide a link on the municipal website to FEMA resources addressing flooding and flood protection, evacuation procedures, disaster preparedness, and post-disaster recovery, and<br><br>3) Provide website links to relevant hazard mitigation measures. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | Med      | 2.2              | PP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | This activity is carried out by the County for the benefit of all Citizens including all participating municipal jurisdictions.   |
| B21      | Promote national "awareness" weeks (i.e., hurricane preparedness, severe weather preparedness, etc.) through local media. ("Awareness" weeks are listed on the National Weather Service website at <a href="#">Preparedness and Weather Safety - NWS Raleigh, NC</a> )   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards  | High     | 2.2              | PIO      | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations                                     | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | Beaufort County will continue to implement this strategy for the benefit of all Citizens, including all participating jurisdictions. The County uses social media and cable channel for outreach.   |
| B22      | Educate the general public to the importance of weather alert radios and systems that can operate on alternative power and can provide up-to-the-moment information regarding locations of severe storms and possible tornadoes.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure, Severe Winter Weather, Earthquake, Tornado & Thunderstorm | Med      | 2.1              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations                                     | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | Beaufort County developed a new outreach program for this activity in 2024.   |
| B23      | Maintain a Hazardous Material Action Plan that addresses the proper containment of spills, etc. This effort will be coordinated with the county LEPC.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding   | Med      | 4.2              | ES       | <b>Beaufort County Local Emergency Planning Committee,</b><br>Municipal Administrations                     | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | Beaufort County will continue to facilitate the meeting of the County LEPC. The LEPC meets quarterly and is growing.  |
| B24      | Monitor natural and man-made drainage structures to ensure they are clear and functioning properly; prioritize needed drainage projects and review funding alternatives annually.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | High     | 1.3              | SP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS, NCDOT, USDA, HMA | Ongoing - next 5 years  | Carry Forward | The County will continue to monitor drainage conditions to identify flooding hot spots and system deficiencies. Once identified engineered solutions will be established. Ag Extension Office has been working with USDA to receive and implement grants. |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources                  | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|--|----------|------------------|----------|---|------------------|--|-------------------------|---------------|--|
| B25      | Continue to coordinate annually with the NC Forest Service to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Wildfire   | High     | 4.1              | PP       | <b>Beaufort County Emergency Services</b> , Beaufort County Board of Commissioners, Municipal Administrations | Staff Time       | GF, NC Forest Service, NCDPS               | Other - Annually        | Carry Forward | Beaufort County coordinates with NC Forest Service daily on wildfire risk identification and communication.  |
| B26      | Maintain Debris Removal and Monitoring Services Contracts for post-disaster response. These services should focus on preparing documentation necessary to ensure full reimbursement of cost associated with community cleanup and immediate infrastructure restoration.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 1.1              | ES       | <b>Beaufort County Emergency Services</b> , Beaufort County Board of Commissioners, Municipal Administrations | To Be Determined | GF, NCDPS, FEMA                            | Ongoing - As needed     | Carry Forward | Post-disaster debris removal contracts are in place with the State. Beaufort County is working on putting pre-disaster contracts in place for debris removal, potable water, emergency power, critical needs, response and recovery, and consultant resources. |
| B27      | Work to implement all strategies outlined within the Hurricane Matthew Resilient Redevelopment Plan.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | Med      | 3.1              | P        | <b>Beaufort County Board of Commissioners</b> , Municipal Governing Boards                                    | To Be Determined | GF, NCDPS, FEMA, NCDCM, USDA, NCDEQ, NCDOT | Ongoing - next 5 years  | Carry Forward | Beaufort County has HMGP projects from Hurricane Matthew in progress.  |
| B28      | Installation of automatic bar screen device and other improvements to the Jack's Creek Pump Station to improve function of equipment and safety to operating personnel.  | Washington   | Hurricanes & Coastal Hazards, Flooding   | High     | 3.1              | SP       | <b>Municipal Administration</b>   | To Be Determined | FEMA HHDP, BRID, Local                     | 2026                    | New           | Applied for funding in 2023. Will continue to pursue funding for implementation.   |
| B29      | Create or Update Community Wildfire Protection Plans in each fire district   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Wildfire   | Med      | 4.1              | P, PIO   | <b>Beaufort County Staff</b> , NC Forest Service  | To Be Determined | Grant Funds                                | 3-5 years               | New           |  |
| B30      | Solar Resiliency Backup for Critical Facilities and Infrastructure   | Beaufort County  | All Hazards  | High     | 1.1              | PP       | <b>Beaufort County Emergency Services</b>   | \$545,000        | Grant Funds (BRIC)                         | 3 years                 | New           | LOI submitted to the State and waiting on next stage.  |

**SECTION 7: MITIGATION ACTION PLANS**

| <b>Action #</b> | <b>Description</b>   | <b>Applicable Jurisdictions</b> | <b>Hazards Addressed</b> | <b>Priority</b> | <b>Goal &amp; Objective</b> | <b>Category</b> | <b>Lead/Participating Agencies (Lead in bold)</b> | <b>Estimated Cost</b> | <b>Potential Funding Sources</b> | <b>Implementation Schedule</b> | <b>2025 Status</b> | <b>2025 Status Comments/ Explanation</b>              |
|-----------------|--|---------------------------------|--------------------------|-----------------|-----------------------------|-----------------|---|-----------------------|----------------------------------|--------------------------------|--------------------|---|
| B31             | Cyber Continuity of Operations through implementation of resilient communication strategies and system improvements. | Beaufort County                 | Cyber Threat             | High            | 4.2                         | P, ES           | <b>Beaufort County Emergency Services</b>         | \$50,000              | Grant Funds                      | 2 years                        | New                | Submitted for grant funding. Waiting on award status. |

Table 7.2 - Mitigation Action Plan, Carteret County

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|---|-------------------|----------|------------------|---------------------|---|------------------|---------------------------|-------------------------|---------------|--|
| CA3      | Annually review and maintain the County's Continuity of Operations Plan (COOP) to ensure ongoing government operations following a disaster event. The County, in conjunction with all participating municipal jurisdictions, will review this plan annually and update as deemed necessary.   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards       | Med      | 3.2              | ES                  | <b>Carteret County Emergency Services,</b><br>Municipal Administrations                               | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | County Risk Management is working with County Departments to complete COOP update. County will review and update this plan annually. Beaufort, Cedar Point, and Pine Knoll Shores cooperate with the County's Continuity of Operations Plan.   |
| CA4      | Annually review and update the County's Emergency Operations Plan (EOP) to ensure compliance with all NCEM and NCOEMS procedures and policies. Through these updates, the County will work closely with all participating municipalities to ensure that all jurisdictions continue to be educated and prepared for activation of the EOP in the event of a disaster event. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards       | Med      | 3.2              | ES                  | <b>Carteret County Emergency Services</b>   | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Carteret County Emergency Services works closely with all participating municipalities to review and update the Emergency Operations Plan (EOP) annually. Beaufort and Pine Knoll Shores cooperate with the County's Emergency Operations Plan.  |
| CA5      | Maintain, and where necessary, install backup generators at all identified critical facilities. Additionally, County Emergency Services will evaluate the equipment on a regular basis to ensure it continues to meet operational demands at county facilities.  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards       | High     | 1.2              | PP                  | <b>Carteret County Emergency Services,</b><br>Independent Facility Operators<br>Town Public Utilities | To Be Determined | GF, NCDPS, NCDOT, HMGP    | Ongoing - next 5 years  | Carry Forward | Carteret County Emergency Services evaluates all emergency generators on a regular basis to ensure operability. A new County radio system project is in progress. In Beaufort, permanent backup generators have been installed at the Town's Police Department, Fire Department, Public Works, Public Utilities, and Town Hall buildings, as well on most utility lift stations. Pine Knoll Shores evaluates all emergency generators on a regular basis to ensure operability |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed  | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule   | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|--|----------|------------------|---------------------|---|------------------|---------------------------|---------------------------|---------------|--|
| CA6      | Maintain a contract with a qualified post-disaster recovery service provider. This contract will include the provision of essential services and equipment, including generators, and will include documentation required for reimbursement from FEMA/NCCEM. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Severe Winter Weather, Earthquake, Wildfire, Dam & Levee Failure                 | Med      | 3.1              | PP                  | <b>Carteret County Governing Board,</b><br>Municipal Governing Boards                             | To Be Determined | GF, HMGP                  | Other - Reviewed Annually | Carry Forward | Carteret County and Pine Knoll Shores maintain contractors for generators and storm cleanup. Beaufort maintains a contractor for storm debris removal. Cedar Point maintains contracts with two separate post-disaster recovery service providers. The current contracts were entered into in June 2024.   |
| CA7      | Hold a public information meeting (once annually) aimed at educating the public and elected officials about the jurisdictions' overall vulnerability to natural and man-made hazards, and the jurisdictions' hazard mitigation efforts.                      | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards  | High     | 2.2              | PIO                 | <b>Carteret County Emergency Services,</b><br>Carteret County Planning, Municipal Administrations | Staff Time       | GF                        | 1 Year                    | Carry Forward | Carteret County Emergency Services holds an annual hurricane expo prior to hurricane season. Beaufort hosts <a href="#">annual information meetings</a> , most recently alongside the National Weather Service. Cedar Point held a public information meeting in August 2024 during a Board of Commissioners Work Session. Pine Knoll Shore Emergency Management holds a hazard mitigation conference at least annually. The Strategic Planning Committee routinely brings in subject matter experts to learn how to be more resilient against man-made and natural hazards. |
| CA8      | Continue to maintain the County's Crisis Management System to efficiently deal with emergency situations. These efforts will involve training for officials and relevant staff regarding use of the program.   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 4.2              | ES                  | <b>Carteret County Emergency Services,</b><br>Carteret County Planning                            | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years    | Carry Forward | Carteret County Emergency Services provides annual training to officials and all relevant staff on the County's Crisis Management system. Carteret County conducts an annual EOC activation exercise.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed  | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources             | Implementation Schedule        | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|--|----------|------------------|---------------------|---|------------------|---------------------------------------|--------------------------------|---------------|--|
| CA9      | Meet annually with all electric service providers operating within the County prior to hurricane season, in preparation for the effects of severe weather, and will provide the preliminary planning steps required for effective post-disaster recovery.              | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Earthquake, Dam & Levee Failure | Med      | 4.2              | ES                  | <b>Carteret County Emergency Services,</b> Municipal Administrations                                      | Staff Time       | GF, NCDPS, Electric Service Providers | Other - meet annually          | Carry Forward | Carteret County Emergency Services meets annually with electric service providers. Pine Knoll Shores continues to meet annually with Carteret Craven Electric Co-Op to address utility concerns and post-disaster recovery. Cedar Point held a telephone conference with electric service providers.   |
| CA10     | Maintain all property acquired within the Special Flood Hazard Area (SFHA) as undisturbed open space in perpetuity. Continue to proactively establish open space within the floodplain and floodway as HMGP grant funds become available to carry out this initiative. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricane & Coastal Hazards, Dam & Levee Failure   | High     | 1.2              | NRP                 | <b>Carteret County Planning,</b> Municipal Administrations  | Staff Time       | GF, NCDPS                             | Ongoing - next 5 years         | Carry Forward | Carteret County and Pine Knoll Shores will maintain property within the SFHA acquired with FMA or HMGP funding as undisturbed open space. Carteret County will continue to seek FMA/HMGP funding for open space preservation. Beaufort has not acquired any property within the SFHA with FMA or HMGP funding. Cedar Point actively protects its 56-acre park and is looking for other parcels to acquire with grant funds.  |
| CA11     | Integrate, when feasible, new greenway and public park improvements into comprehensive planning and capital improvement efforts (including coordination with the County's certified CAMA Land Use Plans).  | Carteret County, Beaufort, Morehead City  | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure  | High     | 1.2              | P, SP               | <b>Carteret County Parks and Recreation,</b> Carteret County Planning, Morehead City Parks and Recreation | To Be Determined | GF, NCDEQ                             | Other - as opportunities arise | Carry Forward | The County updated and adopted its CAMA LUP in 2021/22 and these items have been incorporated into the updated CAMA LUP. Beaufort's new Parks & Recreation Comprehensive Plan (2024), CAMA and Comprehensive Land Use Plan (2023), the Resilient Beaufort plan (2018) emphasize greenway and park establishment, expansion, and improvement. Pine Knoll Shores is currently updating its certified CAMA Land Use plan and pedestrian master plan this year and will incorporate these items into the updated plan. |



SECTION 7: MITIGATION ACTION PLANS

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)                 | Estimated Cost       | Potential Funding Sources   | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|---|---|---|----------|------------------|---------------------|--|----------------------|-----------------------------|-------------------------|---------------|--|
| CA13     | Review and update respective Flood Damage Prevention Ordinances as deemed necessary. Once annually, all jurisdictions will conduct a review to ensure that the current FDPO is compliant with all FEMA and NCEM mandates. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | Med      | 1.2              | PP                  | <b>Carteret County Planning, Municipal Administrations</b> | Staff Time           | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | Carteret County amended and updated its FDPO in 2020 and again in 2023 to align with the State's most recent edition of the Coastal Model Ordinance and to incorporate new Coastal A flood zone construction standards. The current adopted FDPO is in compliance with all State and Federal floodplain management requirements. Beaufort is beginning a comprehensive update to land development ordinances to create a new Unified Development Ordinance, which will include the integration and modernization of the Town's Flood Damage Prevention Ordinance in accordance with current best practices and guidance from FEMA and NCEM. Pine Knoll Shores has recently updated its flood protection ordinance. Cedar Point updated its Flood Damage Prevention Ordinance in preparation of new FEMA maps that took effect June 19, 2020. A subsequent review was made to determine compliance with NCGS 160-D. |
| CA14     | Strive to maintain respective CRS ratings through implementation of a comprehensive floodplain management program.  | Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores                                | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 3.2              | P, PP               | <b>Carteret County Planning, Municipal Administrations</b> | \$15,000/ Staff Time | GF, NCDPS, HMGP, BRIC, UHMA | Ongoing - next 5 years  | Carry Forward | Carteret County is now a CRS Class 9. County staff will continue to provide CRS recertification documentation on an annual basis and conduct credited activities to maintain this rating. Staff will continually look for ways to improve the CRS rating. Beaufort's Class 7 CRS rating is maintained through annual outreach and reporting efforts. Staff will work towards a class reduction at the next cycle visit. Pine Knoll Shores continues to participate in the CRS program will provide documentation to maintain class 6 CRS rating. Cedar Point actively seeks to maintain and improve its CRS rating.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)                    | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|--|--|---|----------|------------------|---------------------|---|------------------|---------------------------|-------------------------|---------------|---|
| CA15     | Maintain a map information service involving the following:<br>(1) Provide information relating to Flood Insurance Rate Maps (FIRMs) to all inquirers, including a provision of information on whether a given property is located with a flood hazard area;<br>(2) Provide information regarding the flood insurance purchase requirement;<br>(3) Maintain historical and current FIRMs;<br>(4) Advertise once annually in the local newspaper the availability of FIRMs; and<br>(5) Provide information to inquirers about local floodplain management requirements. | Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 2.2              | PIO                 | <b>Carteret County Planning,</b><br>Municipal Administrations | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Carteret County and Pine Knoll Shores continue to provide a map information service to residents/visitors/ property owners/real estate agents and anyone else inquiring about FIRM information.<br>Beaufort maintains paper FIRMs in Town Hall in the Planning & Inspections Department. The town tracks map changes, annexations, new subdivisions, LOMR/LOMAs, and other FIRM changes in digital and paper format. Digital versions are stored on the server, which is backed up to a cloud system. The town further maintains all paper FIRMs dating prior to 1999. Beaufort conferences with contractors, property owners, real estate agents, developers, and other interested parties regarding the FIRMs, flood insurance purchase requirement, and applicable floodplain management requirements.<br>Cedar Point maintains both paper and digital (GIS and PDF) maps of the most recent FIRM. |
| CA16     | Mail a notice annually to all property owners in an effort to educate citizens about dangers associated with flooding in low-lying coastal areas.  | Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 2.2              | PIO                 | <b>Carteret County Planning,</b><br>Municipal Administrations | To Be Determined | GF, NCDPS                 | Other - Once Annually   | Carry Forward | Carteret County mails all property owners a flood tips brochure each year with their tax bill regardless of flood zone. 100% of property owners receive this flood tips brochure. Additionally, property owners in Repetitive Loss Areas (RLAs) receive annual notification on their susceptibility to flooding and grant opportunities.<br>Beaufort also provides information throughout the year in the Town's newsletter with the monthly water/sewer bill mailings.   |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)                    | Estimated Cost | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|---|---|---|----------|------------------|---------------------|---|----------------|---------------------------|-------------------------|---------------|---|
| CA17     | Make information regarding hazards and development regulations within floodplains available through:<br>(1) Ensure that the local library maintains information relating to flooding and flood protection;<br>(2) Provide a link on the county website to FEMA resources addressing flooding and flood protection;<br>(3) Provide a link on all participating municipalities' websites to FEMA resources addressing flooding and flood protection, evacuation procedures, disaster preparedness, and post-disaster recovery; and<br>(4) Provide website links to relevant hazard mitigation websites.<br>(5) Provide information to local real estate agents. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | Med      | 2.2              | PIO                 | <b>Carteret County Planning,</b><br>Municipal Administrations | Staff Time     | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Carteret County maintains links to numerous FEMA and NFIP resources on its Carteret County Flood Information website and emergency preparedness website. Beaufort staff annually confirms that flood information is maintained at the Beaufort Branch Carteret County Public Library; several links to relevant resources are found in the <a href="#">Hurricane Preparedness/Flood Information website</a> and throughout the Town website; and information is provided to local real estate agents as part of Community Rating System outreach. Cedar Point and Pine Knoll Shores maintain links to FEMA resources on their websites. |
| CA18     | Support the efforts of the Carteret County Local Emergency Planning Committee (LEPC) in their effort to address hazards associated with the storage of chemicals, noxious waste material and bulk fuel.   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Hurricanes & Coastal Hazards, Flooding                      | Low      | 4.2              | ES                  | <b>Carteret County LEPC</b>                                   | Staff Time     | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Carteret County is working on getting a more active LEPC. Staff from Pine Knoll Shores will continue to participate in the LEPC.  |
| CA19     | Continue to monitor water resources to mitigate the impacts of drought conditions. These efforts will include maintaining a local water shortage ordinance. This ordinance will be activated in coordination with all utility providers as the need arises.   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Drought   | Med      | 1.5              | P, NRP              | <b>Carteret County Planning,</b><br>Municipal Administrations | Staff Time     | GF, NCDEQ                 | Other - As necessary    | Carry Forward | Carteret County continually monitors water resources and maintains a water shortage ordinance. Beaufort's Public Utilities Department monitors water availability and has a <a href="#">water shortage ordinance</a> for emergencies. Pine Knoll Shores continually monitors water resources. The town does not currently have a water shortage ordinance but will investigate this moving forward. Cedar Point Public Works Department tracks/reviews rainfall data.   |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources   | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|---|---|---|----------|------------------|---------------------|--|----------------|-----------------------------|-------------------------|---------------|--|
| CA20     | Collaborate to provide education and training to local government officials to broaden understanding of public policy relating to hazard mitigation.  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards   | Low      | 4.2              | PIO                 | <b>Carteret County Emergency Services,</b><br>Carteret County Administration, Municipal Administration           | Staff Time     | GF                          | Other - Annually        | Carry Forward | County staff attend meetings of the Carteret County Floodplain Administrators group and support efforts to provide training to local government officials. The County employs two CFMs. Beaufort and Pine Knoll Shores staff participate in meetings of Carteret County's Floodplain Administrators group. Beaufort employs one CFM with another staff member training to become CFM by the end of 2025. Pine Knoll Shores employs two CFMs. Cedar Point seeks opportunities for education of officials.   |
| CA21     | Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLPs) and other high risk properties from future flooding events. The County will maintain a list of RLPs, and on an annual basis, will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Carteret County will assist all municipal jurisdictions in working through the structural mitigation grant funding process. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 3.1              | PP                  | <b>Carteret County Planning Department,</b><br>Carteret County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS, HMGP, BRIC, UHMA | Ongoing - next 5 years  | Carry Forward | Carteret County continues to aggressively seek out grant funding for elevating RLPs and SRLPs and is currently administering a grant program to rehabilitate and mitigate properties during recent hurricanes. The County also maintains an up-to-date list of all RLPs and SRLPs in the County. Beaufort provides information on available funding to property owners and provides assistance with the application process as possible. Pine Knoll Shores continues to aggressively seek grant funding for elevating RLPs. This is a particular challenge because Pine Knoll Shores generally is not favorable for grant opportunities. Cedar Point will be seeking participants from the Repetitive Loss List to assist with mitigation through the FMA program. |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources    | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|---|----------|------------------|---------------------|--|----------------|------------------------------|-------------------------|---------------|--|
| CA22     | <p>Increase the availability of skilled contractors to perform needed work post hazard by:</p> <ul style="list-style-type: none"> <li>Developing a partnership with major local contractors in selected areas (roofing, tree trimming, etc.), such that they will deploy resources and skilled contractors to affected areas as needed.</li> <li>Creating local contractor retention plan (perhaps with incentives related to permits, commitments for County/City projects, a reduction in community college tuition, etc.) to reduce the flight of local skilled labor.</li> </ul>   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorms, Severe Winter Weather, Earthquake, Dam & Levee Failure | Med      | 2.2              | PP                  | <b>Carteret County Planning Department,</b><br>Carteret County Board of Commissioners, Municipal Administrations | Staff Time     | GF                           | 2 to 3 years            | Carry Forward | Carteret County has a team of licensed building inspectors that continually work with local contractors to streamline the building and debris removal process immediately after an emergency or disaster situation. Beaufort works with local and traveling contractors to ensure proper permitting and inspections are provided for post-hazard work.       |
| CA23     | <p>Improve awareness regarding the intensity of natural hazard events as they materialize and subside by:</p> <ul style="list-style-type: none"> <li>Establishing an emergency radio broadcast frequency that runs a recorded message pre- and post-hazard to communicate critical-time sensitive information. It could include things like routes/ bridges that are open or closed, weather/hazard forecasts, location of emergency shelters.</li> <li>More fully utilizing County/Town websites to provide pre-hazard and post-hazard recovery information (debris pick up schedule, critical dates, forms, phone numbers, housing availability, etc.).</li> </ul> | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Earthquake, Dam & Levee Failure  | High     | 2.2              | ES                  | <b>Carteret County Emergency Services,</b><br>Carteret County Board of Commissioners, Municipal Administrations  | Staff Time     | GF                           | 2 to 3 years            | Carry Forward | Beaufort provides access to a mass notification platform called Regroup to broadcast emergency messaging via email, text message/SMS, and voice call, with <a href="#">online signup</a> . Beaufort utilizes social media platforms, "sunshine list" emails, and website posting for emergency messaging in addition to emergency alerts and press releases. |
| CA24     | <p>Continue to coordinate annually with the NC Forest Service to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards.</p>  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Wildfire  | High     | 4.1              | PP                  | <b>Carteret County Emergency Services,</b><br>Carteret County Board of Commissioners, Municipal Administrations  | Staff Time     | GF, NC Forest Service, NCDPS | Other - Annually        | Carry Forward | In Progress. Carteret County coordinates with NC Forest Service on wildfire mitigation and preparedness.   |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed                     | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost            | Potential Funding Sources                | Implementation Schedule | 2025 Status | 2025 Status Comments/Explanation |
|----------|---|---|---------------------------------------|----------|------------------|---------------------|---|---------------------------|--|-------------------------|-------------|----------------------------------|
| CA25     | Conduct wildfire risk assessments in all participating communities, engage residents, and co-create individual mitigation action plans to protect people, property, and natural resources from wildland fire. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Wildfire                              | Med      | 4.1              | P, PP               | <b>Carteret County Emergency Services,</b><br>Municipal Administrations                 | Staff Time                | GF, NC Forest Service, NCDPS             | 3-5 years               | New         |                                  |
| CA26     | Improve stormwater management planning and implement stormwater improvement projects.   | Emerald Isle  | Flooding, Hurricane & Coastal Hazards | High     | 1.3              | SP                  | <b>Emerald Isle Planning Department</b>   | TBD; will vary by project | GF, BRIC, HMGP, State grant funds, NCDEQ | 3-5 years               | New         |                                  |
| CA27     | Support beach preservation efforts through the Carteret County Shoreline Protection Office, including stabilizing erosion hazard areas.   | Carteret County, Emerald Isle   | Flooding, Hurricane & Coastal Hazards | Med      | 1.3              | SP                  | <b>Carteret County Shoreline Protection Office,</b><br>Emerald Isle Planning Department | TBD                       | Local funds                              | 3-5 years               | New         |                                  |
| CA28     | Create or Update Community Wildfire Protection Plans in each fire district  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Wildfire                              | Med      | 4.1              | P, PIO              | <b>Carteret County Staff,</b><br>NC Forest Service                                      | To Be Determined          | Grant Funds                              | 3-5 years               | New         |                                  |

Table 7.3 – Mitigation Action Plan, Craven County

| Action # | Description   | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost | Potential Funding Sources | Implementation Schedule                         | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|---|--|---|----------|------------------|---------------------|---|----------------|---------------------------|---|---------------|---|
| CR1      | Review respective Comprehensive Land Use Plans annually to ensure that the Future Land Use Map adequately delineates portions of the community deemed unsuitable for development due to existing environmental conditions. This effort will also involve the identification of potential drainage easements and open space areas that will positively affect drainage conditions within areas documented as stormwater/flooding hot spots. Additionally, the County will attempt to identify portions of the County susceptible to wildfire damage. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure, Wildfire | Med      | 1.3              | P                   | <b>Craven County Planning Department,</b> Craven County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPCM, NCDPS, Other  | 2 to 3 years                                    | Carry Forward | In Progress. Craven County, as well as participating municipal jurisdictions, will consider updating the County's Comprehensive land Use Plan over the next three fiscal years.   |
| CR2      | Review respective Flood Damage Prevention Ordinances to assess whether any revisions and/or updates have been mandated by FEMA or NCEM. Additionally, jurisdictions will consider whether regulatory options are available to provide for more effective floodplain management.   | Craven County, Bridgeton, Cove City, Havelock, New Bern, River Bend, Trent Woods, Vanceboro        | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure           | Med      | 3.1              | P                   | <b>Craven County Planning Department,</b> Craven County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS                 | Other – Review annually                         | Carry Forward | Implementation is ongoing as needed. Craven County, and all participating municipal jurisdictions, will review their respective Flood Damage Prevention Ordinances annually, or as directed by NCDPS. Auto adopt of map changes has been incorporated within the Craven County Flood Damage Prevention Ordinance. |
| CR3      | Continue to support NCDEQ in efforts to enforce the Neuse River Basinwide Water Quality Management Rules.   | Craven County, Havelock, New Bern, River Bend, Trent Woods   | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure           | Low      | 1.3              | NRP                 | <b>Craven County Planning Department,</b> Municipal Administrations                                       | Staff Time     | GF                        | Ongoing – next 5 years                          | Carry Forward | These rules are currently being enforced. Changes in standards will coincide with amendments established by NCDEQ.  |
| CR4      | Consider the data and recommendations outlined within this plan when preparing updates to respective Capital Improvements Plans. All recommendations regarding capital expenditures will focus on siting infrastructure and public facilities outside of the Flood Hazard Area.   | Craven County, New Bern, River Bend, Havelock  | All Hazards   | Med      | 1.3              | SP                  | <b>Craven County Board of Commissioners,</b> Municipal Elected Boards                                     | Staff Time     | GF                        | Other – review annually with budget preparation | Carry Forward | Craven County, New Bern, River Bend and Havelock establish capital outlay for infrastructure projects through their respective Capital Improvements Plans. This will continue to occur in line with annual budget preparation.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost       | Potential Funding Sources     | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|--|---|----------|------------------|---------------------|--|----------------------|-------------------------------|-------------------------|---------------|---|
| CR5      | Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLP's) from future flooding events. The County will maintain a list of RLP's, and on an annual basis, will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Craven County will assist all municipal jurisdictions in working through the structural mitigation grant funding process. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure           | High     | 3.1              | PP                  | <b>Craven County Planning Department,</b><br>Craven County Board of Commissioners, Municipal Administrations | Staff Time           | GF, NCDPS, HMGP, BRIC, UHMA   | Ongoing - as needed     | Carry Forward | Craven County in coordination with all participating municipal jurisdictions will utilize annual as well as post disaster funding to treat repetitive loss properties through elevation, acquisition/demolition, or reconstruction. |
| CR6      | Continue to expand upon the County's Emergency Notification System available to all residents. Craven County Emergency Services will coordinate with all municipal jurisdictions regarding registration.   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | High     | 2.2              | ES                  | <b>Craven County Emergency Services,</b><br>Municipal Administrations  | Staff Time, \$30,000 | GF, NCDPS                     | Ongoing - next 5 years  | Carry Forward | Craven County utilizes, and will continue to employ, the CODE RED Emergency Alert System to notify residents of the status of natural hazard events.  |
| CR7      | Consider all of the data, information, maps and recommendations outlined throughout this plan when siting for the development of all new critical facilities.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure, Wildfire | Med      | 1.3              | PP                  | <b>Craven County Board of Commissioners,</b><br>Municipal Elected Boards                                     | To Be Determined     | GF, NCDPS, FEMA, USDA         | Ongoing - as needed     | Carry Forward | Mitigation measures will be considered any time development or relocation of any County or Municipal facility (critical) takes place.   |
| CR8      | Develop a formal system and plan for evaluating and assessing the availability and effectiveness of all critical facilities outlined within this plan. Craven County will coordinate with NCEM, American Red Cross, local animal shelters, local care homes, etc., in making determinations related to need and capacity required in the event of a disaster.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | High     | 2.1              | P                   | <b>Craven County Emergency Services,</b><br>Craven County Board of Commissioners, Municipal Elected Boards   | Staff Time           | GF, NCDPS, American Red Cross | Ongoing - Next 5 years  | Carry Forward | Craven County in coordination with all participating municipal jurisdictions, will work through this exercise annually, as well as following the effects of a natural hazard event through the corrective action planning process.  |
| CR9      | In conjunction with annual EOP updates, determine if access to all critical facilities is readily available in the event of a flooding event. Careful consideration should be given to localized flooding issues that may restrict access along limited access thoroughfares. Where access issues are identified, the County will establish a plan for alternative transportation.   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure           | High     | 3.2              | ES                  | <b>Craven County Emergency Services,</b><br>Municipal Administrations  | Staff Time           | GF, NCDPS                     | Ongoing - as needed     | Carry Forward | The County EOP is reviewed annually and updated as necessary.   |



**SECTION 7: MITIGATION ACTION PLANS**

| Action # | Description   | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources    | Implementation Schedule        | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|---|--|--|----------|------------------|---------------------|--|----------------|------------------------------|--------------------------------|---------------|---|
| CR10     | Continue to maintain the County's Continuity of Operations Plan (COP). This effort will include an annual update addressing risk management, service retention, alternative staffing procedures and recovery checklist for each County department.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards  | Med      | 3.2              | ES                  | <b>Craven County Emergency Services,</b> Municipal Administrations                                       | Staff Time     | GF, NCDPS                    | Ongoing - as needed            | Carry Forward | The County COP is reviewed annually and updated as necessary.   |
| CR11     | Review and update the County Emergency Operations Plan (EOP) on an annual basis. This update will involve coordination with all municipalities to ensure that all emergency contacts are accurate.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards  | Med      | 3.2              | ES                  | <b>Craven County Emergency Services,</b> Municipal Administrations                                       | Staff Time     | GF, NCDPS                    | Ongoing - as needed            | Carry Forward | The County EOP is reviewed annually and updated as necessary.   |
| CR12     | Continue to coordinate annually with the NC Forest Service to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Wildfire   | High     | 4.1              | PP                  | <b>Craven County Emergency Services,</b> Craven County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NC Forest Service, NCDPS | Other - Annually               | Carry Forward | In Progress. Craven County, with the assistance of the North Carolina Forest Service, are now working in partnership to develop Fire Wise tactics to implement within the County. |
| CR13     | Work to expand upon the County's Special Medical Needs Registry (SMNR). The SMNR is available to all County residents. Effective participation will require close cooperation between County ES and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities. It should be noted that applicants must be approved once application is made. Application alone does not result in guaranteed emergency service. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 2.2              | ES                  | <b>Craven County Emergency Services,</b> Municipal Administrations                                       | Staff Time     | GF                           | Ongoing - over next five years | Carry Forward | The County will work with participating municipal jurisdictions to advertise, maintain, and expand upon the County's special needs registry.                                      |
| CR14     | Continue to maintain the County's Local Emergency Planning Committee (LEPC) focused on monitoring the presence and proliferation of hazard materials throughout the County. The LEPC and County staff will continue to monitor these materials as submitted.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Hurricanes & Coastal Hazards, Flooding   | Med      | 4.2              | ES                  | <b>Craven County LEPC</b>  | Staff Time     | GF, NCDPS                    | Ongoing - next 5 years         | Carry Forward | Craven County Emergency Management will coordinate and maintain the County LEPC with representation from all participating municipalities.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|---|----------|------------------|---------------------|---|------------------|---------------------------|-------------------------|---------------|--|
| CR15     | Maintain information on the County website relating to evacuation and sheltering. Emergency information on the website will include: evacuation routes, sheltering, delays and closures, pet sheltering options, and special needs information.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | High     | 2.2              | PIO                 | <b>Craven County Emergency Services,</b> Municipal Administrations  | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Craven County maintains this information on the County's website and will continue to do so through the planning period.   |
| CR16     | Continue to provide detailed information regarding properties located within flood hazard areas as outlined under CRS Manual Section 322.a through 322.g.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods            | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 3.2              | PP                  | <b>Craven County Planning Department,</b> Craven County Board of Commissioners, Municipal Administrations | Staff Time       | GF                        | Ongoing - next 5 years  | Carry Forward | Craven County, Havelock, New Bern, and River Bend will continue to implement all activities defined under their respective CRS programs. Other Craven County municipalities will consider joining the program through implementation of this plan. |
| CR17     | Continue to maintain a library of materials focused on educating citizens, builders, realtors and developers about the dangers associated with floodplain development. This information will also provide material outlining sound techniques for floodplain development and floodproofing of existing structures. The County will also maintain staff educated in these issues to work with prospective builders. | Craven County, Havelock, New Bern, River Bend  | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | Med      | 2.2              | PIO, PP             | <b>Craven County Planning Department,</b> Craven County Board of Commissioners, Municipal Administrations | Staff Time       | GF                        | Ongoing - next 5 years  | Carry Forward | This activity is carried out by the County for the benefit of all Citizens including all participating municipal jurisdictions.  |
| CR18     | Maintain a contract with a qualified post-disaster recovery service provider. This contract will include the provision of essential services and equipment, including generators, and will include documentation required for reimbursement from FEMA/NCEM.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | Med      | 1.1              | PP                  | <b>Craven County Board of Commissioners,</b> Municipal Governing Boards                                   | To Be Determined | GF, NCDPS                 | Other - Review Annually | Carry Forward | Craven County, and all participating municipal jurisdictions, maintains a contractor for generators and storm cleanup.   |
| CR19     | Maintain reciprocal mutual aid agreements with all neighboring communities in an effort to ensure adequate fire protection throughout the County. Additionally, all jurisdictions will provide preventive maintenance efforts to ensure the fire hydrants and equipment are working properly.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | High     | 4.2              | ES                  | <b>Craven County Emergency Services,</b> Municipal Administrations, Volunteer Fire Departments            | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Craven County Emergency Services maintains mutual aid agreements with neighboring communities and updates them annually.   |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost                            | Potential Funding Sources                  | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|--|---|----------|------------------|---------------------|---|---|--|-------------------------|---------------|---|
| CR20     | Work to implement all strategies outlined within the Hurricane Matthew Resilient Redevelopment Plan.   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure             | Med      | 3.1              | P                   | <b>Craven County Board of Commissioners,</b><br>Municipal Governing Boards  | To Be Determined                          | GF, NCDPS, FEMA, NCDCM, USDA, NCDEQ, NCDOT | Ongoing - next 5 years  | Carry Forward | Craven County continues to utilize the Hurricane Matthew Resilient Redevelopment Plan to seek funding opportunities for items identified within this plan.  |
| CR21     | Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of Craven County Schools and other critical facilities that involves general public usage during and after disaster events (such as generators, structural modifications, etc.) which would make structures more resilient during future storms and natural hazard events. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure, Earthquake | High     | 2.1              | SP                  | <b>Craven County Planning Department,</b><br>Craven County Administration, Municipal Administrations  | Based on need and availability of funding | GF, FEMA, NCDPS                            | Ongoing - next 5 years  | Carry Forward | Craven County monitors and applies for grant funding as the need arises and/or funding becomes available. The County has currently applied for FMA funding and will continue to utilize funding when available to improve the resiliency of County Critical Facilities. |
| CR22     | Craven County will purchase a flood barrier system that will be installed around the Bryan Well site to protect the electrical and SCADA systems from further flood damage   | Craven County  | Flooding, Hurricanes & Coastal Hazards                                  | High     | 3.1              | PP                  | <b>Craven County Water Department,</b><br>Craven County Manager's Office, Craven County Planning Department, Eastern Carolina Council of Governments, Management Consultant, Engineering Consultant | To Be Determined                          | BRIC, Local Funding                        | 2026                    | New           | Applied for funding in 2023. Will continue to pursue funding for implementation.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed                      | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost                            | Potential Funding Sources | Implementation Schedule | 2025 Status | 2025 Status Comments/Explanation   |
|----------|--|--|--|----------|------------------|---------------------|--|---|---------------------------|-------------------------|-------------|--|
| CR23     | The City of New Bern will procure services to complete a flood study assessing the effectiveness of stormwater culverts running under railroad embankments and designing system improvements that will reduce flooding impacts on surrounding properties   | New Bern   | Flooding, Hurricanes & Coastal Hazards | High     | 3.1              | SP                  | <b>City of New Bern</b> , Citizens Advocating Resiliency and Education (C.A.R.E.), American Flood Coalition, Duffyfield Residents' Council, Historic Dryborough Neighborhood Association, Sound Rivers, NC Coastal Federation, The North Carolina Railroad Company, Norfolk Southern Railway Company | To Be Determined                          | BRIC, Local Funding       | 2026                    | New         | Applied for funding in 2023. Will continue to pursue funding for implementation.   |
| CR24     | Trent Woods will begin implementation of its Stormwater Management Plan by completing a comprehensive investigation of existing storm drainage capacity and as necessary, upsizing existing culverts, rehabilitating channels through dredging, expanding the capacity of existing ditches, and enhancing performance through the creation of infiltration ditches | Trent Woods  | Flooding, Hurricanes & Coastal Hazards | High     | 3.1              | SP                  | <b>Town of Trent Woods</b> , Golden LEAF Foundation, NC DEQ Stormwater Division, State Legislature, Eastern Carolina Council of Government, Management Consultant, Engineering Consultant  | To Be Determined                          | BRIC, Local Funding       | 2026                    | New         | Applied for funding in 2023. Will continue to pursue funding for implementation.   |
| CR25     | Consider historical and cultural preservation opportunities when applying for federal grants   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards                            | Med      | 2.2              | PP                  | <b>Craven County Planning Department</b>   | Based on need and availability of funding | FEMA, NCDPS               | Ongoing-Next 5 years    | New         | Cultural resources are impacted by climate change. In partnership with the National Conference of State Historic Preservation and the National Park Service, new tools are being developed to help guide managing historic structures. |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description   | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost                            | Potential Funding Sources | Implementation Schedule | 2025 Status | 2025 Status Comments/ Explanation  |
|----------|---|--|--|----------|------------------|---------------------|---|---|---------------------------|-------------------------|-------------|--|
| CR26     | Work to create drainage maps within all areas of the County that are outside regularly maintained NCDOT right of ways to help address localized drainage issues that often lead to flood damage to homes, land, crops and other structures within the County. Craven County will seek out any grant funding that may assist in the maintenance of drainage ditches, blueline streams or other tributaries that convey water to the river. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes and Coastal Hazards, Dam Failure, Levee Failure, Tsunamis | Med      | 1.3              | SP                  | <b>Craven County Planning Department, Craven County Soil and Water Conservation</b> | Based on need and availability of funding | GF, FEMA, NCDPS, Other    | Ongoing-Next 5 years    | New         | Common flooding issues can be attributed to lack of maintenance to the existing drainage system. Often maintenance exceeds landowner capability to correct.  |
| CR27     | Integration of environmentally friendly flood control measures will be implemented where necessary, such as the installation of living shorelines, marsh sills, flood barriers etc. to protect environmentally sensitive areas and maintain the natural floodplain.   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes and Coastal Hazards, Dam Failure, Levee Failure, Tsunamis | Med      | 1.2              | NRP                 | <b>Craven County Planning Department, Craven County Soil and Water Conservation</b> | Based on need and availability of funding | GF, FEMA, NCDPS, Other    | Ongoing - as needed     | New         | Craven County will seek out funding opportunities to help reestablish shorelines and floodplain lost to natural disasters or other means of degradation through environmentally friendly methods and techniques. |
| CR28     | Create or Update Community Wildfire Protection Plans in each fire district  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Wildfire   | Med      | 4.1              | P, PIO              | <b>Craven County Staff, NC Forest Service</b>                                       | To Be Determined                          | Grant Funds               | 3-5 years               | New         |  |
| CR29     | Conduct Curbside Rapid Wildfire Risk Assessments within fire spread distance of the Croatan National Forest.  | Craven County, Havelock, New Bern  | Wildfire   | High     | 4.1              | P                   | <b>Local fire departments, NC Forest Service, Croatan Area Fireshed Partnership</b> | To Be Determined                          | Grant funds               | 1-2 years               | New         |  |
| RB1      | Construct new road through Northwest Quadrant Area, connecting Plantation Drive to Old Pollocksville Road to serve as additional ingress/egress route during flood events that block the primary and other access roads.  | River Bend   | Flooding, Hurricane & Coastal Hazards, Dam & Levee Failure                     | High     | 4.2              | ES                  | <b>River Bend Town Council</b>  | \$2,000,000                               | GF, FEMA, NCDPS, Town     | Ongoing - next 5 years  | New         |  |
| RB2      | Relocate Water Wells #1 & #2 and Water Treatment Plants #1 & #2 outside of the 100-year floodplain.   | River Bend   | Flooding, Hurricane & Coastal Hazards  | High     | 1.1              | PP                  | <b>River Bend Town Council</b>  | \$18,000,000                              | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |  |

**SECTION 7: MITIGATION ACTION PLANS**

| Action # | Description   | Applicable Jurisdictions | Hazards Addressed                     | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold) | Estimated Cost | Potential Funding Sources | Implementation Schedule | 2025 Status | 2025 Status Comments/ Explanation |
|----------|---|--------------------------|---------------------------------------|----------|------------------|---------------------|--|----------------|---------------------------|-------------------------|-------------|-----------------------------------|
| RB3      | Flood Mitigation at Wastewater Treatment Plant by raising top of structures to above base flood elevation and plus 2' freeboard where possible. | River Bend               | Flooding, Hurricane & Coastal Hazards | High     | 1.1              | PP                  | <b>River Bend Town Council</b>             | \$5,000,000    | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |                                   |
| RB4      | Relocate Wastewater Treatment Plant outside of the 100-year floodplain.   | River Bend               | Flooding, Hurricane & Coastal Hazards | Low      | 1.1              | PP                  | <b>River Bend Town Council</b>             | \$60,000,000   | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |                                   |
| RB5      | Floodproof sewer lift stations in floodplain  | River Bend               | Flooding, Hurricane & Coastal Hazards | Med      | 1.1              | PP                  | <b>River Bend Town Council</b>             | \$1,000,000    | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |                                   |
| RB6      | Improve Stormwater Drainage System Capacity in flood hazard areas   | River Bend               | Flooding, Hurricane & Coastal Hazards | High     | 1.3              | SP                  | <b>River Bend Town Council</b>             | \$4,000,000    | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |                                   |

SECTION 7: MITIGATION ACTION PLANS

Table 7.4 - Mitigation Action Plan, Pamlico County

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost | Potential Funding Sources               | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|---|----------|------------------|----------|---|----------------|---|-------------------------|---------------|--|
| P1       | In the event of a substantial flooding event, or other natural hazard occurrence, perform damage assessments in coordination with NCEM. These assessments will assist the County in determining the extent of the damage caused by the respective disaster event. This data will be utilized as a tool for land use planning and future hazard mitigation plan updates and to gauge the effectiveness of the County's two-foot freeboard requirement.                          | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards   | Med      | 3.1              | PP       | <b>Pamlico County Emergency Services,</b><br>Pamlico County Administration, Municipal Administrations   | Staff Time     | GF, NCDPS                               | Ongoing - as necessary  | Carry Forward | Post-Florence there were gaps in collection of building level damage assessments. The County is working to improve capability and procedures for damage assessments and to track the resulting data. Outside partnerships and resources are needed. CAMA land use plan update currently underway.  |
| P2       | Continue to monitor drainage conditions throughout the County, in particular, issues associated with drainage ditches and agricultural runoff canals situated throughout the County. Once issues are identified, the County will work with municipal jurisdictions and State agencies to identify short- and long-term solutions to these issues.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Wildfire, Dam & Levee Failure | High     | 1.3              | NRP      | <b>Pamlico County Administration,</b><br>Pamlico County Emergency Services, Municipal Administrations   | Staff Time     | GF, NCDEQ, NCDOT                        | Ongoing - In Process    | Carry Forward | Living shoreline project at Whittaker Pointe in Oriental has been completed. Water and Soil Department has received grants and is working on drainage maintenance across the county. Lowland and Hobucken still need ditch maintenance, especially along Hwy 304N. Current issues cause roadway flooding, which affects access to a Coast Guard station that responds to Pamlico Sound. Coastal Dynamics Design Lab is working with Pamlico County. CDDL has done a hydraulics study of the county and completing a Flood Print evaluation of flood vulnerability in the County and opportunities for mitigation, including living shorelines. |
| P3       | Continue to proactively seek grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLP's) and other high-risk properties from future flooding events. The County will maintain a list of RLP's, and on an annual basis, will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Pamlico County will assist all municipal jurisdictions in working through the structural mitigation grant funding process. | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure                                   | Med      | 3.1              | PP       | <b>Pamlico County Planning Department,</b><br>Pamlico County Board of Commissioners, Municipal Administrations, United Way, NC Volunteers Active in Disasters | Staff Time     | GF, NCDPS, HMGP, BRIC, UHMA, United Way | Ongoing - as needed     | Carry Forward | One acquisition completed in the last five years. Multiple elevations have been completed and a new round will begin soon; approximately 70 applicants are interested. The County is working with the Eastern Carolina COG to manage these projects. Pamlico County has coordinated with the Pamlico County Disaster Recovery Coalition (PCDRC) and partners to support post-event repairs to preserve structures and prepare them for elevation.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|---|----------|------------------|----------|---|----------------|---------------------------|-------------------------|---------------|--|
| P4       | Continue to educate County residents about flood-related health hazards, including the linkage between flooding (standing water) and the proliferation of mosquitos, as well as mold intrusion.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Dam & Levee Failure | Med      | 2.2              | PIO      | <b>Pamlico County Administration,</b><br>Pamlico County Emergency Services, Pamlico County Health Department, Municipal Administrations | Staff Time     | GF, NCDEQ, NCDPS          | Ongoing - in process    | Carry Forward | Pamlico County Health Department maintains an educational program regarding mosquito abatement and provides some resources for abatement. Duke students worked with PCDRRC to study health impacts of mold. PCDRRC has held some workshops on mold remediation.  |
| P5       | Make a range of materials related to flood insurance, flood protection, floodplain management, information on floodplains, and how to find a qualified contractors/ realtors familiar with floodproofing and elevation techniques, available through various avenues including: <ul style="list-style-type: none"> <li>Placing materials in the local library</li> <li>Maintaining documents at the County Planning and Economic Development office</li> <li>Disseminating information to local contractors</li> <li>Distributing information to churches and other community-based organizations</li> <li>Establishing a means to distribute information to schoolchildren</li> </ul> | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Dam & Levee Failure | High     | 2.2              | PIO      | <b>Pamlico County Planning Department,</b><br>Pamlico County Board of Commissioners, Municipal Administrations                          | Staff Time     | GF                        | Ongoing - next 5 years  | Carry Forward | Grant funded Lead for NC Fellow in place in Pamlico County is supporting public information coordination. The County annually coordinates outreach before hurricane season. Pamlico County collaborates with other partner agencies and organizations to share relevant information & resources. The Town of Oriental independently provides educational information sessions on hazard mitigation and preparedness. Town of Vandemere created an Emergency Management board to share information from the County. |
| P6       | Review and update the County Emergency Operations Plan on an annual basis. This update will involve coordination with all municipalities to ensure that all emergency contacts are accurate and that all jurisdictions are adequately prepared.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards   | Med      | 3.2              | ES       | <b>Pamlico County Emergency Services,</b><br>Municipal Administrations  | Staff Time     | GF, NCDPS                 | Ongoing - as needed     | Carry Forward | The County EOP is reviewed annually and updated as necessary. The County is in the process of completing a full update to the EOP.   |



SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources     | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|--|---|--|----------|------------------|----------|--|----------------|-------------------------------|-------------------------|---------------|---|
| P7       | Continue to work with the North Carolina Department of Environmental Quality to enforce standards outlined within the statewide stormwater management program. Currently, this program generally addresses stormwater management for projects disturbing an area equal to or greater than one acre. Additionally, the County will monitor localized flooding issues and, where feasible, address these issues through the installation of stormwater best management practices (BMPs). | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure  | Med      | 1.3              | P        | <b>Pamlico County Administration</b><br>Municipal Administration   | Staff Time     | GF, NCDPS, NCDEQ              | Ongoing - In Process    | Carry Forward | Pamlico County Inspections Department provides development review services throughout the County and works with NCDEQ to enforce state stormwater regulations.  |
| P8       | Develop a formal system and plan for evaluating and assessing the availability and effectiveness of all critical facilities outlined within this plan and acquire any additional equipment or backup power to ensure continuity of operations at these facilities. Pamlico County will coordinate with NCEM, Red Cross, Salvation Army, local animal shelters, local care homes etc., in making determinations relating to need and capacity.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | High     | 2.1              | P        | <b>Pamlico County Emergency Services,</b><br>Pamlico County Board of Commissioners, Municipal Elected Boards | Staff Time     | GF, NCDPS, American Red Cross | 2 to 3 years            | Carry Forward | Pamlico County coordinates with partner organizations and all participating municipal jurisdictions on critical facility protection. New County EOC is under construction.                                |
| P9       | Ensure that there is adequate capacity for snow and ice removal in the event of a major snowstorm. The County will work with the North Carolina Department of Transportation (NCDOT) and North Carolina Emergency Management (NCEM) to ensure that all resources necessary are available to carry out this effort. Additionally, the County will work closely with the County school system, as well as other entities, to make determinations regarding closures and delays.          | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Severe Winter Weather  | Med      | 1.1              | P        | <b>Pamlico County Emergency Services,</b><br>Municipal Administrations, NCDOT                                | Staff Time     | GF, NCDPS, NCDOT              | Ongoing - In Process    | Carry Forward | Pamlico County and Towns do not own equipment for snow and ice removal but Emergency Management coordinates with NCDOT on road pre-treatment, road clearing, and communicating road safety to the public. |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost         | Potential Funding Sources    | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|-------------------|----------|------------------|----------|---|------------------------|------------------------------|-------------------------|---------------|--|
| P10      | Continue to maintain all development regulations, emergency and land use related plans, and applications for permits on the respective jurisdictions' website. This information will be maintained and updated as deemed necessary. If a local website does not exist, municipal jurisdictions will consider developing one through implementation of this plan.   | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards       | High     | 1.3              | PIO      | <b>Pamlico County Administration,</b><br>Municipal Administrations  | Staff Time/<br>\$3,500 | GF                           | 3 to 5 years            | Carry Forward | Pamlico County continues to maintain current plans and development regulations on the County website. Vandemere developed a website within the last year. Oriental and Grantsboro maintain town websites.        |
| P11      | Continue to coordinate annually with the NC Forest Service to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards. | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Wildfire          | High     | 4.1              | PP       | <b>Pamlico County Emergency Services,</b><br>Pamlico County Board of Commissioners, Municipal Administrations | Staff Time             | GF, NC Forest Service, NCDPS | Other - Annually        | Carry Forward | NC Forest Service notifies the County of daily fire risk as well as controlled burns and other wildfire mitigation.  |
| P12      | Maintain reciprocal mutual aid agreements with all neighboring communities. Additionally, all jurisdictions will provide preventive maintenance efforts to ensure the fire hydrants and equipment are working properly.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards       | High     | 4.2              | ES       | <b>Pamlico County Emergency Services,</b><br>Municipal Administrations, Volunteer Fire Departments            | Staff Time             | GF, NCDPS                    | Ongoing - next 5 years  | Carry Forward | Pamlico County is part of the statewide mutual aid agreement and has mutual aid agreements with all municipalities and neighboring counties. Fire departments have mutual aid agreements with NC Forest Service. |
| P13      | Maintain Debris Removal and Monitoring Services Contracts for post disaster response. These services should focus on preparing documentation necessary to ensure full reimbursement of cost associated with community cleanup and immediate infrastructure restoration.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards       | Med      | 1.1              | PP       | <b>Pamlico County Emergency Services,</b><br>Pamlico County Board of Commissioners, Municipal Administrations | To Be Determined       | GF, NCDPS, FEMA              | Ongoing - As needed     | Carry Forward | Debris Removal and Monitoring Services Contracts are in place. A statewide agreement is underway.  |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)                              | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|---|---|---|----------|------------------|----------|---|------------------|---------------------------|-------------------------|---------------|---|
| P14      | Maintain all property acquired through annual and post disaster mitigation funding as open space in perpetuity. Additionally, appropriate reuse strategies will be developed regarding this dedicated open space.                     | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 1.2              | PP       | <b>Pamlico County Administration,</b><br>Municipal Administrations      | To Be Determined | GF, NCDPS                 | Ongoing - in process    | Carry Forward | Pamlico County is coordinating with NC Department of Commerce's Creating Outdoor Recreational Economies program. Looking into creating a kayak trail, parks, natural habitat areas, and other passive recreation opportunities on preserved coastal open space properties. Derelict/abandoned structures present an ongoing risk but funding is needed to mitigate these buildings. |
| P15      | Create or Update Community Wildfire Protection Plans in each fire district  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Wildfire  | Med      | 4.1              | P, PIO   | <b>Pamlico County Fire Departments,</b><br>NC Forest Service            | To Be Determined | Grant Funds               | 3-5 years               | New           |   |
| P16      | Encourage planting native vegetation to support infiltration, reduce runoff, and protect property and water quality. Provide resources from NC State Cooperative Extension to educate the public on the benefits of native plantings. | Pamlico County  | Flooding, Hurricanes & Coastal Hazards                      | Med      | 2.2              | PIO      | <b>Pamlico County Administration,</b><br>NC State Cooperative Extension | Staff Time       | GF                        | 1-2 years               | New           |   |
| P17      | Identify and equip a facility to serve as a new emergency shelter.  | Pamlico County  | All Hazards   | High     | 2.1              | ES, PP   | <b>Pamlico County Emergency Services</b>                                | To Be Determined | GF, Grant Funds           | 3-5 years               | New           |   |
| P18      | Integrate hazard mitigation into land use planning.   | Pamlico County  | All Hazards   | Med      | 1.2, 1.3, 1.4    | P        | <b>Pamlico County Planning Department</b>                               | Staff Time       | GF                        | 1-2 years               | New           | CAMA Land Use Plan update is currently underway.  |
| P19      | Develop a backup communications system in the event of cell tower failure.  | Pamlico County  | All Hazards   | High     | 4.2              | ES       | <b>Pamlico County Administration</b>                                    | To Be Determined | GF                        | 2-3 years               | New           |   |

SECTION 7: MITIGATION ACTION PLANS

| Action # | Description  | Applicable Jurisdictions | Hazards Addressed                      | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold) | Estimated Cost             | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|--|--------------------------|--|----------|------------------|----------|--|----------------------------|---------------------------|-------------------------|---------------|---|
| OR1      | Annual outreach to residents for hurricane season preparations, quarterly meetings with Church reps to disseminate prep materials, instructions for before, during, and following disasters. Keep seasonal information in Town Hall and disseminate to businesses. Distribute through mailings (newsletter), social media, traditional media materials. Disseminate info on elevation for new construction, restrict building in floodplain. | Oriental                 | Flooding, Hurricanes & Coastal Hazards | High     | 2.2              | PIO      | <b>Town of Oriental Administration</b>     | \$2,000                    | General fund              | Ongoing annually        | Carry Forward | Annual Outreach done May 2024 for Hurricane Season 2024 with representatives from NOAA, NWS, churches. Hurricane packages updated and distributed in same time frame. Social media used extensively. New TextMyGov service enabled for emergency messaging. All building elevation information distributed with permitting paperwork. |
| OR2      | Annual outreach to realtors to make sure most updated building restrictions in GMO are disseminated to all potential buyers.   | Oriental                 | Flooding, Hurricanes & Coastal Hazards | High     | 2.2              | PIO      | <b>Town of Oriental Administration</b>     | \$100                      | General fund              | Ongoing annually        | Carry Forward | Monthly updates on any changes to GMO distributed through website, social media, news outlets   |
| OR3      | Annual review by Planning Board and Town Board and make changes to GMO that prevent recurrent flooding and enhance drainage capacity.  | Oriental                 | Flooding, Hurricanes & Coastal Hazards | High     | 1.3              | P        | <b>Town of Oriental Administration</b>     | \$500                      | General fund              | Ongoing annually        | Carry Forward | Priority drainage through budgeting process in order of severity. Substantial dedicated funds annually.   |
| OR4      | Annual ditch clearing and assessment of town-maintained open and covered culverts. Annual education of residents/businesses about the flow of drainage (culverts not there to take water away, but to settle solids), Priority list established and reviewed for clearing/blockage of street culverts, education about ownership of land vs. rights-of-way, necessity of clearing residentially maintained ditches.                          | Oriental                 | Flooding, Hurricanes & Coastal Hazards | High     | 1.3              | PP       | <b>Town of Oriental Administration</b>     | \$16,000-\$20,000 annually | General fund              | Ongoing annually        | Carry Forward | Residential education, drainage plan, green waste disposal to assist in removing vegetation- funded at \$20,000.  |
| VM1      | Annual outreach to residents for hurricane season preparations. Distribute through website, newsletter, social media, and/or traditional media materials.  | Vandemere                | Flooding, Hurricanes & Coastal Hazards | High     | 2.2              | PIO      | <b>Town of Vandemere Administration</b>    | \$2,000                    | General fund              | Ongoing annually        | New           |   |

# 8 PLAN MAINTENANCE

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

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning. This section discusses how the Mitigation Action Plans will be implemented by participating jurisdictions and outlines the method and schedule for monitoring, updating, and evaluating the plan. This section also discusses incorporating the plan into existing planning mechanisms and how the public will continue to be involved in the planning process. It consists of the following three subsections:

- 8.1 Implementation
- 8.2 Monitoring, Evaluation, and Enhancement
- 8.3 Continued Public Involvement

## 8.1 IMPLEMENTATION

### 8.1.1 MITIGATION ACTION PLAN IMPLEMENTATION

Each jurisdiction participating in this plan update is responsible for implementing specific mitigation actions as prescribed in their Mitigation Action Plan (found in Section 7). In each Mitigation Action Plan, every proposed action is assigned to a specific local department or agency to ensure responsibility and accountability for each action. Additionally, a timeline or target date for implementation is provided for each action to help assess whether reasonable progress is being made toward implementation. When applicable, potential funding sources have also been identified for actions. The participating jurisdictions will seek funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. These criteria will be reviewed and updated as needed as part of the HMPC's regular review of the Hazard Mitigation Plan and the Mitigation Action Plans. This approach enables individual jurisdictions to track progress and update their own unique Mitigation Action Plan as needed without altering the broader focus of the regional plan.

### 8.1.2 PLAN INTEGRATION

Another important implementation mechanism that is highly effective and low-cost is incorporation of the Hazard Mitigation Plan recommendations and their underlying principles into other local plans and programs. Where possible, plan participants will use existing plans and/or programs to implement the Mitigation Action Plan. It will be the responsibility of the HMPC representatives from each participating jurisdiction to determine and pursue opportunities for integrating the findings and goals of this plan with other local planning documents. HMPC members should strive to ensure that the goals and strategies of new and updated local planning documents for their jurisdictions or agencies are consistent with the goals and actions of the Hazard Mitigation Plan and will not contribute to increased hazard vulnerability in the region. Methods for integration may include:

- Monitoring other planning/program agendas;
- Attending other planning/program meetings;

**SECTION 8: PLAN MAINTENANCE**

- Participating in other planning processes; and
- Monitoring community budget meetings for other community program opportunities.

Table 8.1 details each jurisdiction’s efforts to integrate the 2020 Pamlico Sound Regional Hazard Mitigation Plan into other local planning efforts as well as any opportunities for integration of this plan update.

**Table 8.1 – Integration Efforts**

| <b>Jurisdiction</b> | <b>Integration of 2020 plan</b>   | <b>Intended integration of this plan update</b>   |
|---------------------|---|---|
| Beaufort County     | Risk assessment findings and goals were integrated with Beaufort County’s RCCP Resilience Strategy.   | Continued integration will be pursued as opportunities arise.   |
| Aurora              | Risk assessment findings and goals were integrated with Aurora’s RCCP Resilience Strategy.  | Continued integration will be pursued as opportunities arise.   |
| Bath                | No integration occurred   | Integration will be pursued as opportunities arise.   |
| Belhaven            | Risk assessment findings and goals were integrated with Belhaven’s RCCP Resilience Strategy. Mitigation actions supported implementation of the Town’s CRS Program.         | The Town will continue to use the plan to support CRS participation and for guidance regarding capital expenditures that will involve projects outlined in the plan update. |
| Chocowinity         | No integration occurred   | Integration will be pursued as opportunities arise.   |
| Pantego             | No integration occurred   | Integration will be pursued as opportunities arise.   |
| Washington          | Risk assessment findings and goals were integrated with Washington’s RCCP Resilience Strategy.  | Continued integration will be pursued as opportunities arise.   |
| Washington Park     | Risk assessment findings and goals were integrated with Washington Park’s RCCP Resilience Strategy. Mitigation actions supported implementation of the Town’s CRS Program.  | The Town will continue to use the plan to support CRS participation and for guidance regarding capital expenditures that will involve projects outlined in the plan update. |
| Carteret County     | Natural hazard areas were addressed in the County’s 2021 Land Use Plan update. Mitigation actions supported implementation of the County’s Community Rating System Program. | The County will use this plan to support implementation of Land Use Plan policies and actions related to natural hazard areas.  |
| Atlantic Beach      | Natural hazard areas were addressed in the Town’s 2021 Land Use Plan update. Mitigation actions supported implementation of the Town’s CRS Program.                         | The Town will continue to use this plan to assist with implementation of the Town’s CRS Program and to implement policies and actions outlined in the Land Use Plan.        |
| Beaufort            | Risk assessment findings and goals were integrated with Beaufort’s RCCP Resilience Strategy. Mitigation actions supported implementation of the Town’s CRS Program.         | The Town will continue to use the plan to support CRS participation and for guidance regarding capital expenditures that will involve projects outlined in the plan update. |

**SECTION 8: PLAN MAINTENANCE**

| <b>Jurisdiction</b> | <b>Integration of 2020 plan</b>   | <b>Intended integration of this plan update</b>   |
|---------------------|---|---|
| Bogue               | The Town has incorporated hazard mitigation information on the town website.  | Continued integration will be pursued as opportunities arise.   |
| Cape Carteret       | Risk assessment findings and goals were integrated with Cape Carteret's RCCP Resilience Strategy. Mitigation actions supported implementation of the Town's CRS Program.                | The Town will continue to use the plan to support CRS participation and for guidance regarding capital expenditures that will involve projects outlined in the plan update. |
| Cedar Point         | The Town integrated the Hazard Mitigation Plan with 2024 updates to the UDO, Zoning Map, and Comprehensive Plan. Mitigation actions supported implementation of the Town's CRS Program. | The Town will continue to utilize this plan to support mitigation through land use planning and policies and to help implement the Town's CRS Program.                      |
| Emerald Isle        | Mitigation actions supported implementation of the Town's CRS Program.  | The Town will continue to use the plan to support CRS Program participation.  |
| Indian Beach        | No integration occurred   | Integration will be pursued as opportunities arise.   |
| Morehead City       | Risk assessment findings, goals, objectives, and actions were integrated with the Town's Floodplain Management Plan update.   | Continued integration will be pursued as opportunities arise.   |
| Newport             | Mitigation actions supported implementation of the Town's CRS Program.  | The Town will continue to use the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.         |
| Peletier            | No integration occurred   | Integration will be pursued as opportunities arise.   |
| Pine Knoll Shores   | Risk assessment findings and goals were integrated with Pine Knoll Shores' RCCP Resilience Strategy. Mitigation actions supported implementation of the Town's CRS Program.             | The Town will continue to use the plan to support CRS participation and for guidance regarding capital expenditures that will involve projects outlined in the plan update. |
| Craven County       | The hazard mitigation plan has been integrated with Craven County's RCCP Resilience Strategy, CRS Program, emergency preparedness planning, and infrastructure planning.                | The County will continue to use the plan to support CRS participation, emergency preparedness planning, and for guidance regarding capital expenditures.                    |
| Bridgeton           | No integration occurred   | Integration will be pursued as opportunities arise.   |
| Cove City           | No integration occurred   | Integration will be pursued as opportunities arise.   |
| Dover               | No integration occurred   | Integration will be pursued as opportunities arise.   |
| Havelock            | Havelock integrated hazard risk information and plan goals with the 2023 Land Use Plan update.  | The HMP will continue to be referenced when land use policy is made with reference to development within flood hazard areas.  |

**SECTION 8: PLAN MAINTENANCE**

| <b>Jurisdiction</b> | <b>Integration of 2020 plan</b>  | <b>Intended integration of this plan update</b>  |
|---------------------|--|--|
| New Bern            | New Bern used strategies in this plan to re-establish participation in the CRS Program.  | The City will continue to use this plan to support implementation of CRS activities.   |
| River Bend          | Mitigation actions supported implementation of the Town's CRS Program.   | The Town will continue to use the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.  |
| Trent Woods         | No integration occurred  | Integration will be pursued as opportunities arise.  |
| Vanceboro           | No integration occurred  | Integration will be pursued as opportunities arise.  |
| Pamlico County      | The County has been integrating the hazard mitigation plan with community and economic development plans. Risk assessment findings and goals were integrated with Pamlico County's RCCP Resilience Strategy. | The County will continue to integrate hazard mitigation with community and economic development. The County will use the plan to support CRS participation and for guidance regarding capital expenditures that will involve projects outlined within this plan. |
| Alliance            | No integration occurred  | Integration will be pursued as opportunities arise.  |
| Arapahoe            | No integration occurred  | Integration will be pursued as opportunities arise.  |
| Bayboro             | Mitigation actions supported implementation of the Town's CRS Program.   | The Town will continue to use the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.  |
| Grantsboro          | No integration occurred  | Integration will be pursued as opportunities arise.  |
| Mesic               | No integration occurred  | Integration will be pursued as opportunities arise.  |
| Minnesott Beach     | Mitigation actions supported implementation of the Town's CRS Program.   | The Town will continue to use the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.  |
| Oriental            | Mitigation actions supported implementation of the Town's CRS Program.   | The Town will continue to use the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.  |
| Stonewall           | Mitigation actions supported implementation of the Town's CRS Program.   | The Town will continue to use the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.  |
| Vandemere           | Risk assessment findings and goals were integrated with Vandemere's RCCP Resilience Strategy. Mitigation actions supported implementation of the Town's CRS Program.   | The Town will continue to use the plan to support CRS participation and for guidance regarding capital expenditures that will involve projects outlined within this plan.  |

During the planning process, representatives from NCDEQ noted efforts to integrate the hazard mitigation plan with watershed planning through NC Blueprint. Other opportunities to integrate the requirements of



this plan into other local planning mechanisms shall continue to be identified through future meetings of the HMPC and through the five-year review process described herein. Although it is recognized that there are many possible benefits to integrating components of this plan into other local planning mechanisms, the development and maintenance of this stand-alone Hazard Mitigation Plan is deemed by the HMPC to be the most effective and appropriate method to implement local hazard mitigation actions.

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## **8.2 MONITORING, EVALUATION, AND ENHANCEMENT**

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### **8.2.1 ROLE OF HMPC IN IMPLEMENTATION, MONITORING AND MAINTENANCE**

With adoption of this plan, each jurisdiction will be responsible for the implementation and maintenance of their mitigation actions. The County Managers or Planning Directors will take the lead in all plan monitoring and update procedures. As such, the County Managers/Planning Directors agree to continue their relationship with the HMPC and:

- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation of high-priority, low/no-cost recommended actions;
- Ensure hazard mitigation remains a consideration for community decision makers;
- Maintain a vigilant monitoring of multi-objective cost-share opportunities to help the communities implement the plan’s recommended actions for which no current funding exists;
- Monitor and assist in implementation and update of this plan;
- Report on plan progress and recommended revisions to their County Boards of Commissioners;
- Support local jurisdictions in reporting on plan progress and recommended revisions to their local governing bodies; and
- Inform and solicit input from the public.

The HMPC’s primary duty moving forward is to see the plan successfully carried out and report to the individual County Boards of Commissioners, Town and City Councils, NCEM, FEMA, and the public on the status of plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals, considering stakeholder concerns about flood mitigation, passing concerns on to appropriate entities, and providing relevant information for posting on each County and local community websites (and others as appropriate).

Simultaneous to these efforts, it will be important to maintain a constant monitoring of funding opportunities that can be leveraged to implement some of the costlier recommended actions. This task will include creating and maintaining a bank of ideas on how to meet local match or participation requirements. When funding does become available, the Region, individual counties, and participating jurisdictions will be positioned to capitalize on the opportunity. Funding opportunities to be monitored include special pre- and post-disaster funds, state and federal earmarked funds, benefit assessments, and other grant programs, including those that can serve or support multi-objective applications.

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### **8.2.2 MAINTENANCE SCHEDULE**

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

Managers/Planning Directors will reconvene the HMPC quarterly for regular reviews and plan maintenance. These meetings may be held in-person or via conference call or webinar. The HMPC will also convene to review the plan after significant hazard events. If determined appropriate or as requested, an annual report on the plan will be developed and presented to local governing bodies of participating jurisdictions to report on implementation progress and recommended changes.

The five-year written update to this plan will be submitted to the NCEM and FEMA Region 4, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule. With this plan update anticipated to be adopted and fully approved by 2025, the next plan update for the Pamlico Sound Region will be completed by 2030.

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### **8.2.3 MAINTENANCE EVALUATION PROCESS**

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

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

Updates to this plan will:

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

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

- The HMPC representatives from each jurisdiction will be responsible for tracking and reporting on their mitigation actions. Jurisdictional representatives should provide input on whether the action as implemented met the defined objectives and/or is likely to be successful in reducing vulnerabilities.
- If the action does not meet identified objectives, the jurisdictional representatives will determine what additional measures may be implemented and will make any required modifications to the plan.
- All monitoring and implementation information will be reported to the full HMPC, led by the County Emergency Management/Planning Directors, during quarterly meetings. An annual plan maintenance report may be drafted as deemed necessary.

Changes will be made to the plan as needed to accommodate for actions that have failed or are not considered feasible after a review of their consistency with established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed during the monitoring and update of this plan to determine feasibility of future implementation. Updating of the mitigation action plans will be by written changes and submissions, as is appropriate and necessary, and as approved by the appropriate jurisdiction's local governing body.

Following a disaster declaration, the plan will be revised as necessary to reflect lessons learned, or to address specific issues and circumstances arising from the event. It will be the responsibility of the County Managers/Planning Directors to reconvene the HMPC and ensure the appropriate stakeholders are invited to participate in the plan revision and update process following declared disaster events.

### **CRITERIA FOR QUARTERLY REVIEWS IN PREPARATION FOR 5-YEAR UPDATE**

The criteria recommended in 44 CFR 201 and 206 will be utilized in reviewing and updating the plan. More specifically, quarterly reviews will monitor changes to the following information:

- Community growth or change in the past quarter.
- The number of substantially damaged or substantially improved structures by flood zone.
- The renovations to public infrastructure including water, sewer, drainage, roads, bridges, gas lines, and buildings.
- Natural hazard occurrences that required activation of the Emergency Operations Center (EOC) and whether the event resulted in a presidential disaster declaration.
- Natural hazard occurrences that were not of a magnitude to warrant activation of the EOC or a federal disaster declaration but were severe enough to cause damage in the community or closure of businesses, schools, or public services.
- The dates of hazard events descriptions.
- Documented damages due to the event.
- Closures of places of employment or schools and the number of days closed.
- Road or bridge closures due to the hazard and the length of time closed.
- Assessment of the number of private and public buildings damaged and whether the damage was minor, substantial, major, or if buildings were destroyed. The assessment will include residences, mobile homes, commercial structures, industrial structures, and public buildings, such as schools and public safety buildings.
- Review of any changes in federal, state, and local policies to determine the impact of these policies on the community and how and if the policy changes can or should be incorporated into the Hazard Mitigation Plan. Review of the status of implementation of projects (mitigation strategies) including projects completed will be noted. Projects behind schedule will include a reason for delay of implementation.

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## **8.3 CONTINUED PUBLIC INVOLVEMENT**

Continued public involvement is imperative to the overall success of the plan's implementation. The quarterly review process will provide an opportunity to solicit participation from new and existing stakeholders and to publicize success stories from the plan implementation and seek additional public comment. Efforts to involve the public in the maintenance, evaluation, and revision process may include:

- Advertising HMPC meetings in the local newspaper, public bulletin boards and/or City and County office buildings;
- Designating willing citizens and private sector representatives as official members of the HMPC;
- Utilizing local media to update the public of any maintenance and/or review activities;
- Utilizing City and County websites to advertise any maintenance and/or review activities;
- Maintaining copies of the plan in public libraries or other appropriate venues;
- Posting annual progress reports on the Plan to County, City, and Town websites;

- Heavy publicity of the plan and potential ways for the public to be involved after significant hazard events, tailored to the event that has just happened;
- Keeping websites, social media outlets, etc. updated;
- Drafting articles for the local community newspapers/newsletters;
- Utilizing social media accounts (e.g. Twitter, Facebook).

### PUBLIC INVOLVEMENT FOR FIVE-YEAR UPDATE

When the HMPC reconvenes for the five-year update, they will coordinate with all stakeholders participating in the planning process—including those that joined the committee since the planning process began—to update and revise the plan. In reconvening, the HMPC will be responsible for coordinating the activities necessary to involve the greater public, including disseminating information through a variety of media channels detailing the plan update process. As part of this effort, public meetings will be held, and public comments will be solicited on the plan update draft. The HMPC will continue to reach out to stakeholders and organizations that can represent or connect with vulnerable populations and underserved communities.

## 9 PLAN ADOPTION

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

The purpose of formally adopting this plan is to secure buy-in, raise awareness of the plan, and formalize the plan's implementation. The adoption of this plan completes Planning Step 9 (Adopt the Plan) of the 10-step planning process, in accordance with the requirements of DMA 2000. FEMA Approval Letters and community adoption resolutions are provided below.

**SECTION 9: PLAN ADOPTION**

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Approval Letter Placeholder

**SECTION 9: PLAN ADOPTION**

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Approval Letter Placeholder

**SECTION 9: PLAN ADOPTION**

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Beaufort County Adoption Placeholder



**SECTION 9: PLAN ADOPTION**

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Town of Aurora Placeholder

Town of Bath Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Belhaven Placeholder

Town of Chocowinity Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Pantego Placeholder

**SECTION 9: PLAN ADOPTION**

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City of Washington Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Washington Park Placeholder

**SECTION 9: PLAN ADOPTION**

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Carteret County Adoption Placeholder



Town of Atlantic Beach Placeholder

Town of Beaufort Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Bogue Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Cape Carteret Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Cedar Point Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Emerald Isle Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Indian Beach Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Morehead City Placeholder



**SECTION 9: PLAN ADOPTION**

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Town of Newport Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Peletier Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Pine Knoll Shores Placeholder

**SECTION 9: PLAN ADOPTION**

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Craven County Adoption Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Bridgeton Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Cove City Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Dover Placeholder

**SECTION 9: PLAN ADOPTION**

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City of Havelock Placeholder



**SECTION 9: PLAN ADOPTION**

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City of New Bern Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of River Bend Placeholder

Town of Trent Woods Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Vanceboro Placeholder

**SECTION 9: PLAN ADOPTION**

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Pamlico County Adoption Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Alliance Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Arapahoe Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Bayboro Placeholder



Town of Grantsboro Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Mesic Placeholder

Town of Minnesott Beach Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Oriental Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Stonewall Placeholder

**SECTION 9: PLAN ADOPTION**

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Town of Vandemere Placeholder

# ANNEX A BEAUFORT COUNTY

## A.1 ASSET INVENTORY

Beaufort County and the HMPC provided a local inventory of critical facilities and community lifelines, which are a priority for mitigation planning and emergency management. Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. Table A.1 through Table A.8 provides a count of critical facilities by FEMA lifeline category by jurisdiction in Beaufort County. Figure A.1 through Figure A.8 show the locations of all critical facilities in Beaufort County and participating jurisdictions. Note that no critical facilities were identified within the Town of Washington Park.

Table A.9 provides a detailed inventory of the critical facilities in Beaufort County, indicating each facility's FEMA lifeline category, flood zone, 1% annual chance flood depth, and vulnerability to storm surge, sea level rise, and wildfire. More information on hazard vulnerability is provided in the hazard profiles.

**Table A.1 - Critical Facilities by Type, Unincorporated Beaufort County**

| Facility Type            | Count of Facility Type | Structure Value      |
|--------------------------|------------------------|----------------------|
| Communications           | 0                      | \$0                  |
| Energy                   | 0                      | \$0                  |
| Food, Hydration, Shelter | 99                     | \$166,102,259        |
| Hazardous Materials      | 0                      | \$0                  |
| Health and Medical       | 14                     | \$0                  |
| Safety and Security      | 24                     | \$58,152,749         |
| Transportation           | 0                      | \$0                  |
| Water Systems            | 36                     | \$69,250,413         |
| <b>Total</b>             | <b>173</b>             | <b>\$293,505,421</b> |

**Table A.2 - Critical Facilities by Type, Town of Aurora**

| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 1                      | \$5,887,040        |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 1                      | \$0                |
| Safety and Security      | 3                      | \$1,463,696        |
| Transportation           | 0                      | \$0                |
| Water Systems            | 2                      | \$635,152          |
| <b>Total</b>             | <b>7</b>               | <b>\$7,985,888</b> |

**Table A.3 - Critical Facilities by Type, Town of Bath**

| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 1                      | \$5,458,678        |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 0                      | \$0                |
| Safety and Security      | 1                      | \$308,102          |
| Transportation           | 0                      | \$0                |
| Water Systems            | 2                      | \$2,124,630        |
| <b>Total</b>             | <b>4</b>               | <b>\$7,891,410</b> |

**Table A.4 - Critical Facilities by Type, Town of Belhaven**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 0                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 1                      | \$0              |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 2                      | \$0              |
| Safety and Security      | 3                      | \$436,182        |
| Transportation           | 0                      | \$0              |
| Water Systems            | 2                      | \$363,846        |
| <b>Total</b>             | <b>8</b>               | <b>\$800,028</b> |

**Table A.5 - Critical Facilities by Type, Town of Chocowinity**

| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 1                      | \$4,332,018        |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 1                      | \$0                |
| Safety and Security      | 3                      | \$3,689,883        |
| Transportation           | 0                      | \$0                |
| Water Systems            | 2                      | \$254,714          |
| <b>Total</b>             | <b>7</b>               | <b>\$8,276,615</b> |



**Table A.6 - Critical Facilities by Type, Town of Pantego**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 0                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 0                      | \$0              |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 0                      | \$0              |
| Safety and Security      | 1                      | \$269,824        |
| Transportation           | 0                      | \$0              |
| Water Systems            | 0                      | \$0              |
| <b>Total</b>             | <b>1</b>               | <b>\$269,824</b> |

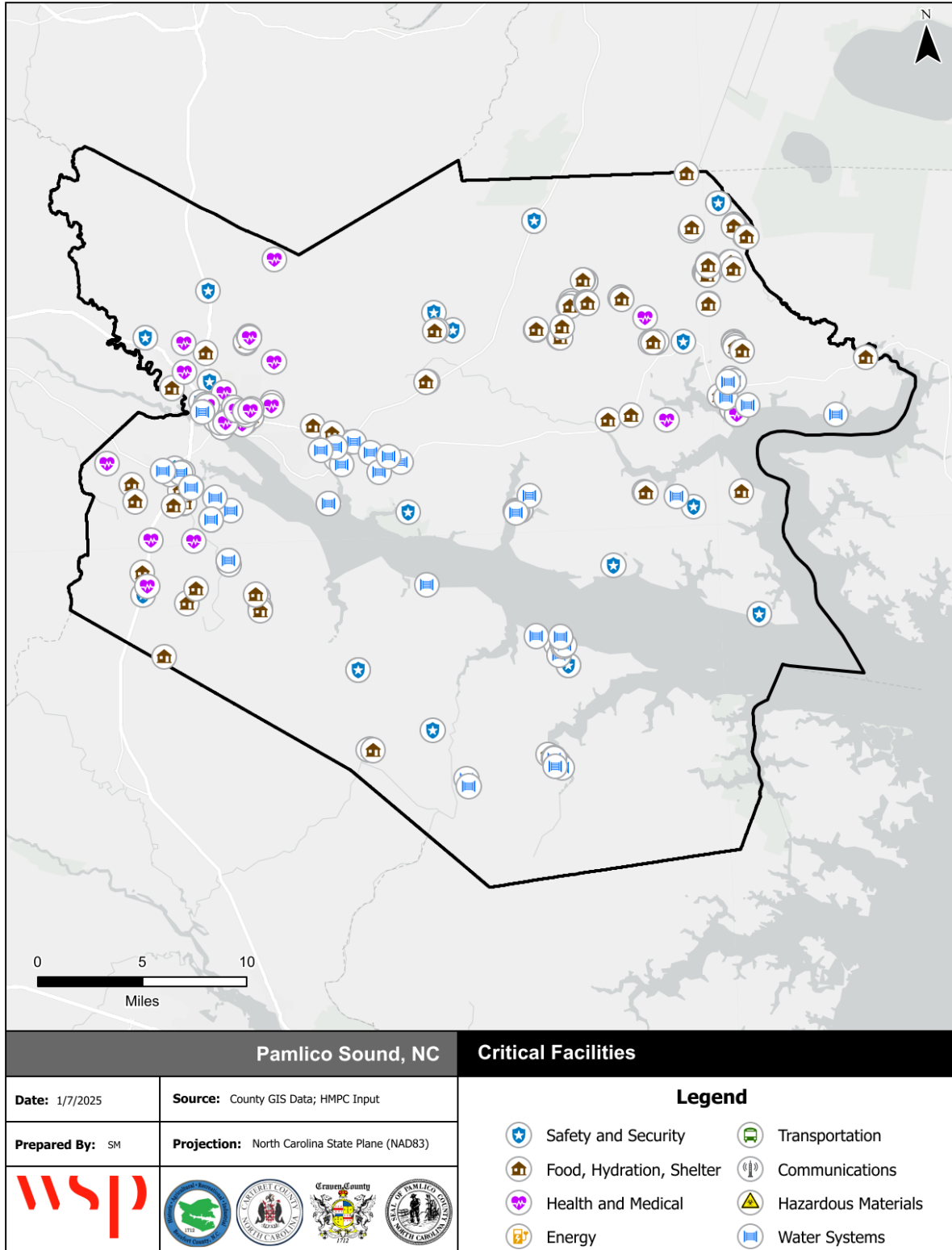
**Table A.7 - Critical Facilities by Type, City of Washington**

| Facility Type            | Count of Facility Type | Structure Value     |
|--------------------------|------------------------|---------------------|
| Communications           | 0                      | \$0                 |
| Energy                   | 0                      | \$0                 |
| Food, Hydration, Shelter | 5                      | \$30,583,083        |
| Hazardous Materials      | 0                      | \$0                 |
| Health and Medical       | 26                     | \$1,946,506         |
| Safety and Security      | 8                      | \$6,654,126         |
| Transportation           | 0                      | \$0                 |
| Water Systems            | 1                      | \$2,218,876         |
| <b>Total</b>             | <b>40</b>              | <b>\$41,402,591</b> |

**Table A.8 - Critical Facilities by Type, Town of Washington Park**

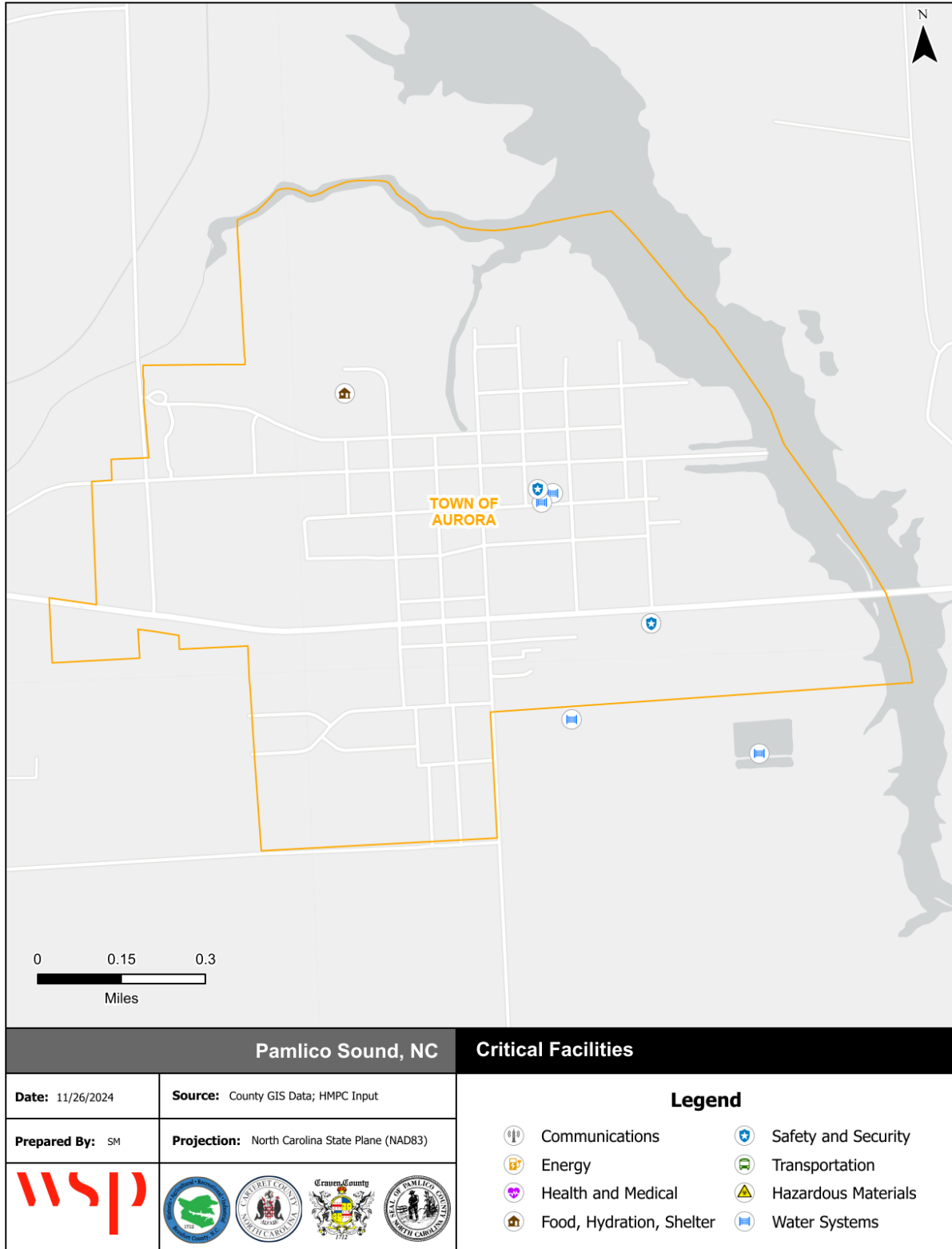
| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 0                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 0                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 0                      | \$0             |
| Transportation           | 0                      | \$0             |
| Water Systems            | 0                      | \$0             |
| <b>Total</b>             | <b>0</b>               | <b>\$0</b>      |

Figure A.1 - Critical Facilities, Beaufort County



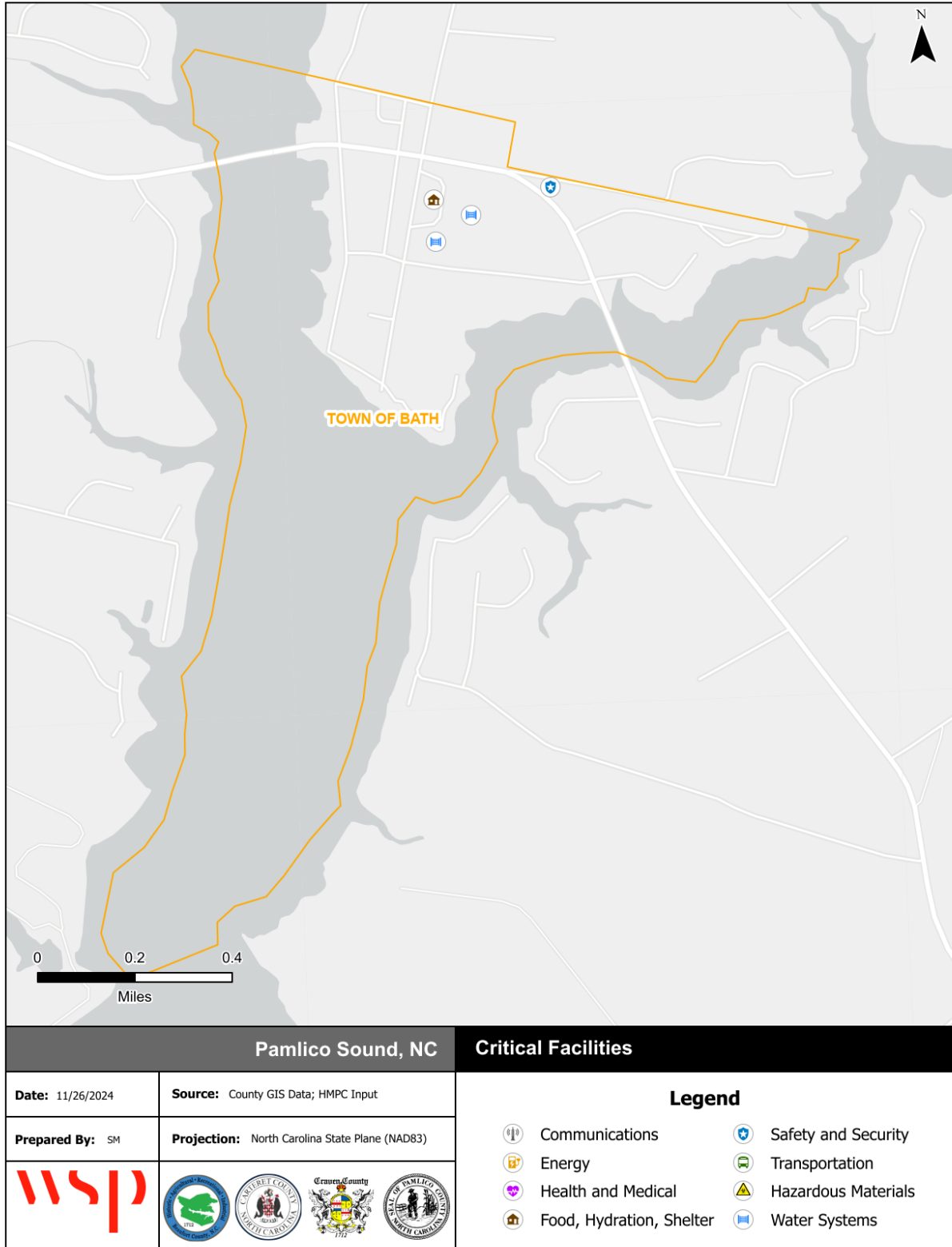
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure A.2 – Critical Facilities, Town of Aurora



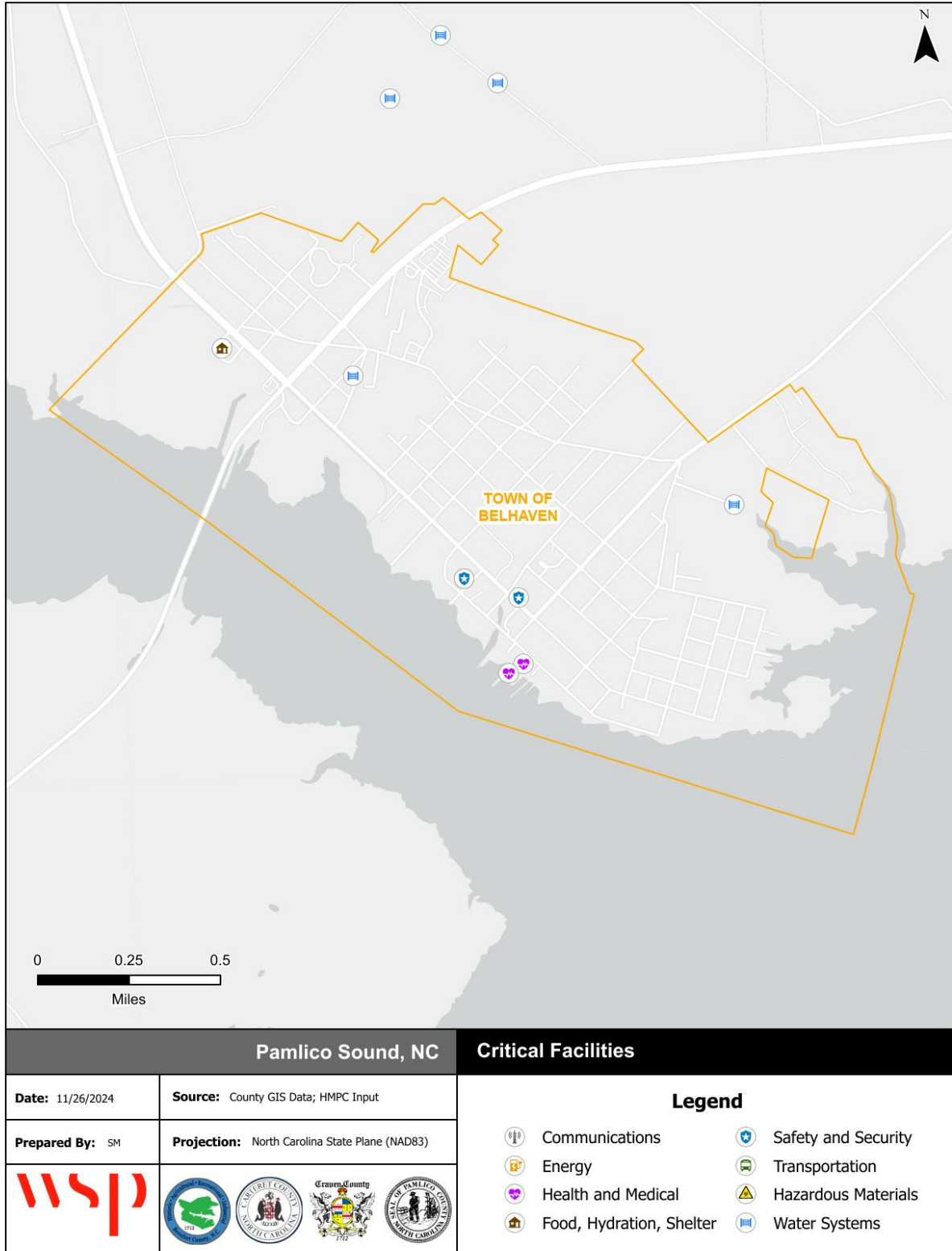
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure A.3 – Critical Facilities, Town of Bath



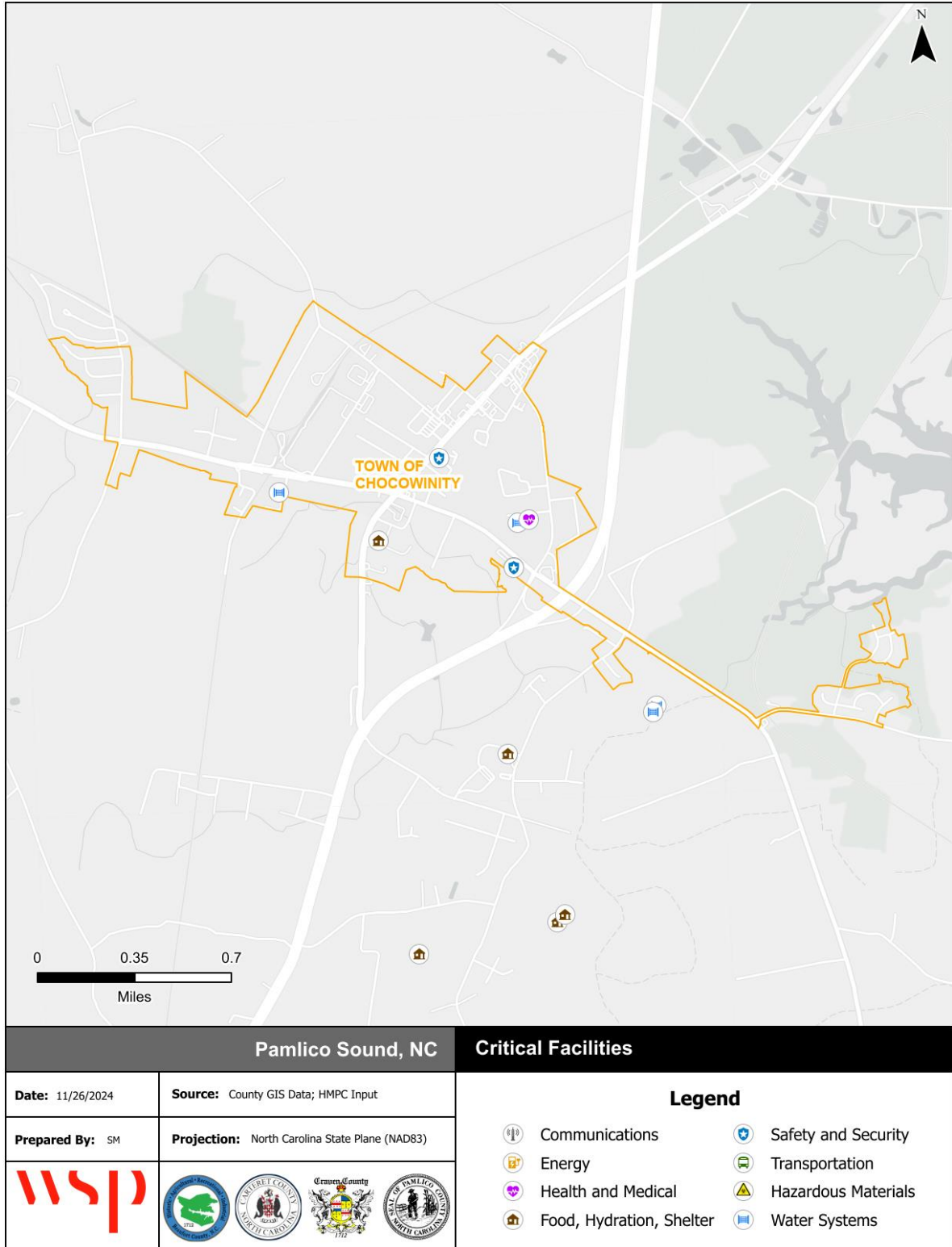
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure A.4 - Critical Facilities, Town of Belhaven



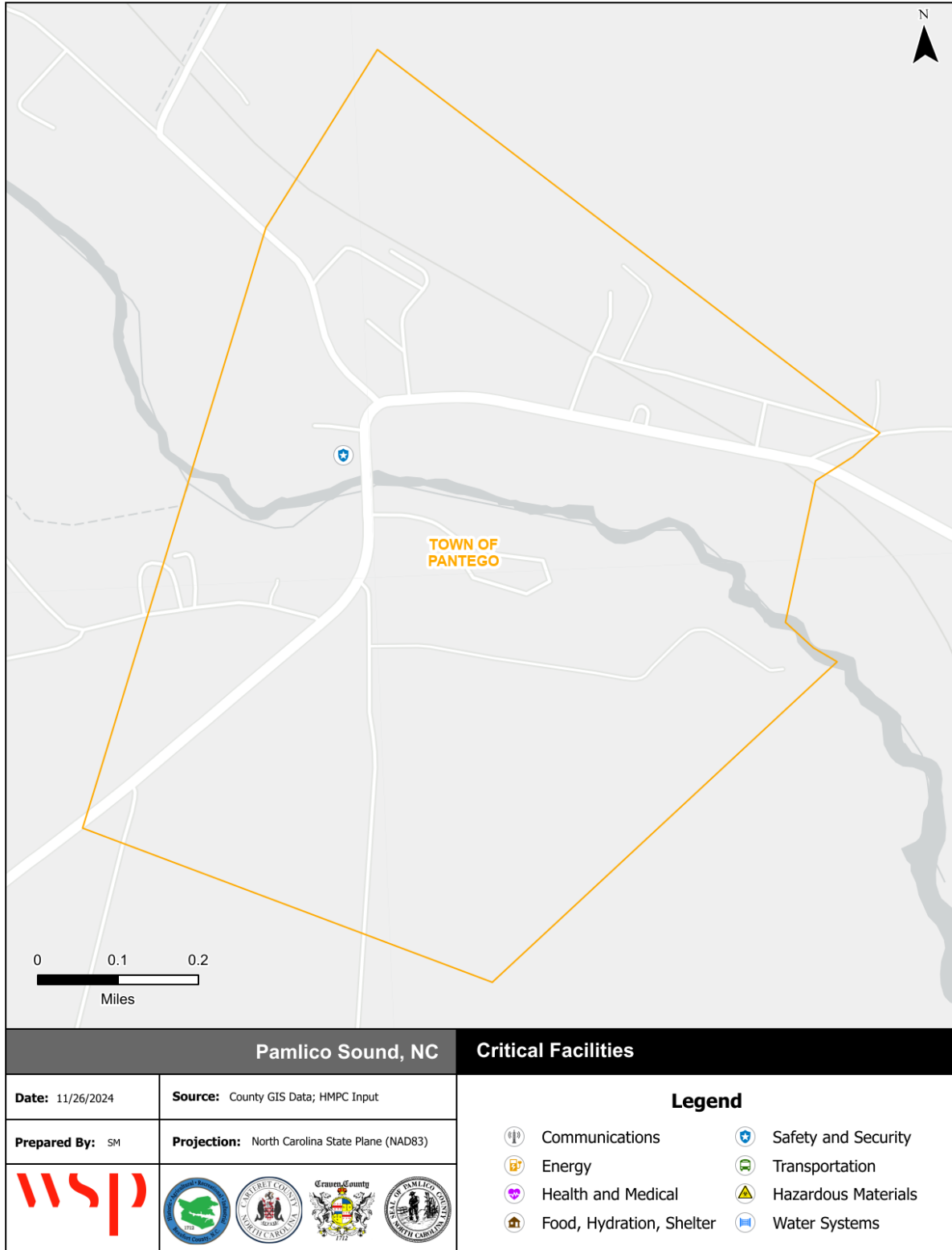
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure A.5 - Critical Facilities, Town of Chocowinity



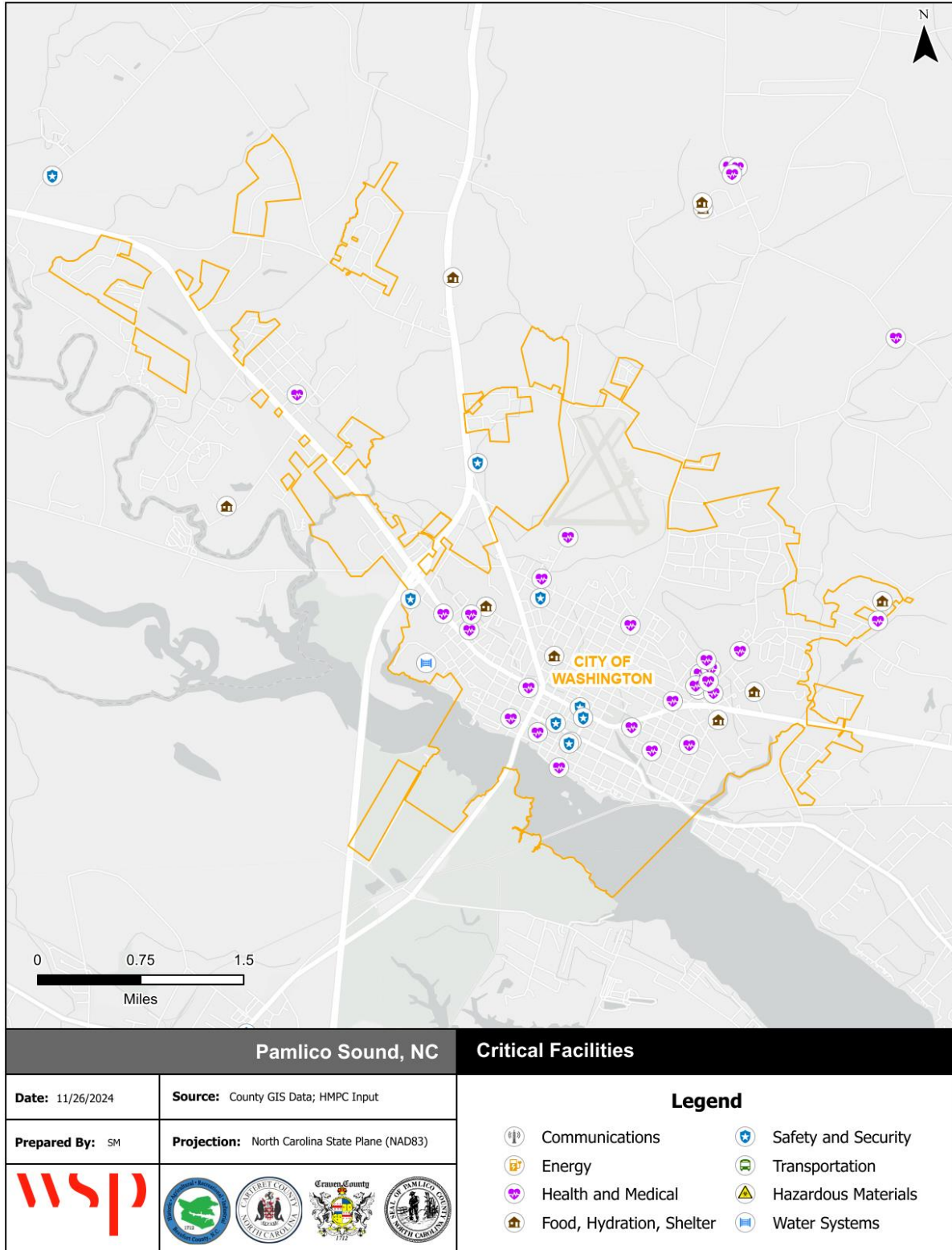
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure A.6 - Critical Facilities, Town of Pantego



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure A.7 – Critical Facilities, City of Washington



Source: NCEM IRISK Database, HMPC input, GIS Analysis



Figure A.8 - Critical Facilities, Town of Washington Park



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Table A.9 - Beaufort County Critical Facilities Inventory

| FEMA Lifeline                         | Facility Type                | Address   | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------------------------------|------------------------------|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| <b>Unincorporated Beaufort County</b> |                              |   |                 |            |             |                     |                       |             |                  |                |
| Water Systems                         | Water Treatment Distribution | -   | \$1,980,449     | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 4              |
| Water Systems                         | Sewer Treatment              | @ South Creek   | \$0             | X Shaded   | 0.1         | 9                   | NA                    | -           | 5                | 5              |
| Water Systems                         | Sewer Treatment              | Town of Bath  | \$10,765        | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 7              |
| Water Systems                         | Public Water Supply          | US 264 @ NC Hwy 32  | \$11,372        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |
| Water Systems                         | Public Water Supply          | US 264 @ NC Forestry Service                                | \$1,032         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 8              |
| Water Systems                         | Public Water Supply          | Off US Hwy 32 South   | \$11,704        | X Unshaded | 0.1         | NA                  | 4                     | -           | 4                | 5              |
| Water Systems                         | Public Water Supply          | Harvey Rd Near US 264                                       | \$2,704         | X Unshaded | 0.1         | NA                  | 3                     | Y           | 4                | 7              |
| Water Systems                         | Public Water Supply          | US 264 @ Camp Leach Rd                                      | \$10,314        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 5              |
| Water Systems                         | Public Water Supply          | 550 Wells Rd @ WTP Inside Fence                             | \$1,980,449     | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 4              |
| Water Systems                         | Public Water Supply          | US 264 Behind Propane Tank @ Tankard Farm North Side of Hwy | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 6              |
| Water Systems                         | Public Water Supply          | Neck Rd (Sr 1227)   | \$1,775         | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 4              |
| Water Systems                         | Public Water Supply          | Well Field Rd @ Field Site                                  | \$5,582         | AE         | 0.8         | 5                   | 1                     | -           | 0                | 6              |
| Water Systems                         | Public Water Supply          | Well Field Rd-Near House                                    | \$2,342         | AE         | 1.3         | 4                   | 1                     | -           | 0                | 0              |
| Water Systems                         | Public Water Supply          | 665 Harbinger St Ext  | \$0             | AE         | 1.7         | 4                   | 1                     | -           | 0                | 0              |
| Water Systems                         | Public Water Supply          | South of 33 Across From 3rd St                              | \$356           | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Water Systems                         | Public Water Supply          | Hill Ed @The WTP Site                                       | \$314,685       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 4              |
| Water Systems                         | Public Water Supply          | Cypress Landing Access Road                                 | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline | Facility Type       | Address                                    | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------|---------------------|--|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems | Public Water Supply | Edgewood Drive @ the WTP                   | \$0             | AE         | 5.3         | 1                   | 1                     | -           | 2                | 1              |
| Water Systems | Public Water Supply | NC Hwy 33 At Choco Recreation Complex      | \$0             | AE         | 5.0         | 1                   | 1                     | -           | 3                | 1              |
| Water Systems | Public Water Supply | Hwy 33 .25 Mile SE of WTP                  | \$11,336        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Water Systems | Public Water Supply | Hwy 33 1 Warren Chapel Rd ~ 1mi NW of WTP  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 5              |
| Water Systems | Public Water Supply | Hwy 33 .25mi SE of WTP                     | \$11,336        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Water Systems | Public Water Supply | Hwy 33 & Warren Chapel Rd ~ 1 Mi NW of WTP | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 5              |
| Water Systems | Public Water Supply | Old Sand Hill Rd @ WTP Site                | \$918,398       | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 6              |
| Water Systems | Public Water Supply | Old Sand Hill Rd                           | \$19,871        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 5              |
| Water Systems | Public Water Supply | Rt Side of Park Off Greenville Ave         | \$2,633         | AE         | 2.4         | 4                   | 1                     | Y           | 3                | 6              |
| Water Systems | Public Water Supply | Left Side of Park @ Holley Dr              | \$2,633         | AE         | 1.9         | 4                   | 1                     | Y           | 3                | 6              |
| Water Systems | Public Water Supply | South Of Ms Kinnions House                 | \$9,736         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 6              |
| Water Systems | Public Water Supply | 93' West of Mill Office                    | \$13,380,666    | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Water Systems | Public Water Supply | West Of Gypsum Stacks                      | \$182,844       | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Water Systems | Public Water Supply | West Of Guard House                        | \$13,380,666    | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Water Systems | Public Water Supply | Next To Barge Slip                         | \$13,380,666    | X Unshaded | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Water Systems | Public Water Supply | Next To Barge Slip                         | \$13,380,666    | X Unshaded | 0.1         | 10                  | 3                     | -           | 4                | 0              |
| Water Systems | Public Water Supply | Next To Mill Pond                          | \$9,918,770     | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Water Systems | Public Water Supply | Behind The Store Near Ast's                | \$244,443       | X Shaded   | 0.1         | 5                   | 1                     | Y           | 2                | 6              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline     | Facility Type  | Address                             | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------|--|-------------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems     | Public Water Supply  | Located Behind Marina Bldg          | \$72,220        | AE         | 2.2         | 2                   | 1                     | -           | 0                | 1              |
| Safety & Security | Law Enforcement - North Carolina State Highway Patrol Troop A District Iv              | 1821 Carolina Avenue                | \$237,846       | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 0              |
| Safety & Security | Law Enforcement - Beaufort County Community College Police Department                  | 5337 United States Highway 264      | \$25,369,874    | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Safety & Security | Law Enforcement - North Carolina Park Rangers - Goose Creek Park                       | 2190 Camp Leach Road                | \$1,099,580     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 4                | 0              |
| Safety & Security | Fire Stations - Sidney Volunteer Fire Department Incorporated                          | 6755 North Savannah Road            | \$92,702        | X Unshaded | 0.1         | 7                   | 2                     | -           | 0                | 3              |
| Safety & Security | Fire Stations - Pungo River Volunteer Fire Department Incorporated                     | 40 Pike Road                        | \$214,044       | X Unshaded | 0.1         | 10                  | 3                     | Y           | 0                | 3              |
| Safety & Security | Fire Stations - Old Ford Volunteer Fire Department Incorporated                        | 6050 United States Highway 17 North | \$1,974,747     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 1                | 0              |
| Safety & Security | Fire Stations - Long Acre Volunteer Fire Department Incorporated                       | 23177 State Highway 32 North        | \$4,825         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 3              |
| Safety & Security | Fire Stations - Bunyan Volunteer Fire Department Incorporated                          | 8264 Broad Creek Road               | \$74,374        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |
| Safety & Security | Fire Stations - Clarks Neck Volunteer Fire Department Incorporated Station 2           | Wharton Station Road                | \$370,089       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 3                | 3              |
| Safety & Security | Fire Stations - Blounts Creek Volunteer Fire Department and Emergency Medical Services | 13965 State Highway 33 East         | \$198,624       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 5              |
| Safety & Security | Fire Stations - Pamlico Beach Fire Department and Rescue Squad                         | 382 Old Pamlico Beach Road West     | \$129,062       | AE         | 0.7         | 4                   | 1                     | Y           | 3                | 3              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline     | Facility Type  | Address                         | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------|--|---------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security | Fire Stations - Aurora Fire Department - Edward Substation                   | 26 Labor Camp Road              | \$3,000         | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 5              |
| Safety & Security | Fire Stations - Pcs Phosphate  | 1530 State Highway 306 North    | \$13,380,666    | X Unshaded | 0.1         | NA                  | 3                     | -           | 5                | 0              |
| Safety & Security | Fire Stations - Chocowinity Fire Department - Wilmar Substation              | United States Highway 17 South  | \$4,466         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 5              |
| Safety & Security | Fire Stations - Pinetown Volunteer Fire Department                           | 7241 Boyd Road                  | \$45,197        | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 4              |
| Safety & Security | EMS - Pungo River Volunteer Fire Department Incorporated                     | 40 Pike Road                    | \$214,044       | X Unshaded | 0.1         | 10                  | 3                     | Y           | 0                | 3              |
| Safety & Security | EMS - Long Acre Volunteer Fire Department Incorporated                       | 23177 State Highway 32 North    | \$4,825         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 3              |
| Safety & Security | EMS - Clarks Neck Volunteer Fire Department Incorporated Station 2           | Wharton Station Road            | \$370,089       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 3                | 3              |
| Safety & Security | EMS - Blounts Creek Volunteer Fire Department and Emergency Medical Services | 13965 State Highway 33 East     | \$198,624       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 5              |
| Safety & Security | EMS - Broad Creek Emergency Medical Services Incorporated                    | 7214 Broad Creek Road           | \$137,285       | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 7              |
| Safety & Security | EMS - Pinetown Rescue and Emergency Medical Services                         | 4815 North Boyd Road            | \$452,498       | X Shaded   | 0.1         | NA                  | NA                    | Y           | 0                | 1              |
| Safety & Security | EMS - Pamlico Beach Fire Department and Rescue Squad                         | 382 Old Pamlico Beach Road West | \$129,062       | AE         | 0.7         | 4                   | 1                     | Y           | 3                | 3              |
| Safety & Security | EMS - Bath Community Rescue Squad  | 10774 State Highway 99 South    | \$66,560        | X Unshaded | 0.1         | 10                  | 3                     | Y           | 0                | 0              |
| Safety & Security | EMS - Pcs Phosphate  | 1530 State Highway 306 North    | \$13,380,666    | X Unshaded | 0.1         | NA                  | 3                     | -           | 5                | 0              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline            | Facility Type   | Address                        | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|---|--------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Health & Medical         | Medical Facilities - Lots of Love Family Care Home          | 31 Corey Road                  | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 3                | 0              |
| Health & Medical         | Medical Facilities - Whispering Pines Family Care Home      | 3130 N. Market Street Ext.     | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 0              |
| Health & Medical         | Medical Facilities - Wooded Acres Guest Home                | 3706 Cherry Road               | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Autumnfield of Belhaven                | 1345 Seed Tick Neck Road       | -               | X Unshaded | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Cedar Manor Rest Home                  | Highway 17 South               | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 5              |
| Health & Medical         | Medical Facilities - Pantego Rest Home                      | 143 Swamp Road                 | -               | AE         | 2.0         | 8                   | 2                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Boyd Therapeutic Home                  | 745 Hodges Road                | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 2                | 0              |
| Health & Medical         | Medical Facilities - Country Living Guest Home              | 3094 Market Street Extension   | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |
| Health & Medical         | Medical Facilities - Country Living Guest Home #2           | 3052 Market Street Extension   | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |
| Health & Medical         | Medical Facilities - Kitchen Home                           | 1825 Old New Bern Road         | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - LIFE, Inc./Beaufort Heights Group Home | 103 Circle Street              | -               | X Unshaded | 0.1         | 10                  | 2                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - LIFE, Inc./Dixon Road Group Home       | Route 1, Box 842A              | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 3                | 4              |
| Health & Medical         | Medical Facilities - Life, Inc./Slatestone Road Group Home  | 332 Slatestone Road            | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Mega Force Staffing                    | 360 Cherry Run Shopping Center | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 2                | 0              |
| Food, Hydration, Shelter | Swine Lagoons   | -                              | \$78,211        | AE         | 2.7         | 6                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons   | -                              | \$2,016,339     | AE         | 0.9         | 6                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons   | -                              | \$43,660        | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 7              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline            | Facility Type | Address | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|---------------|---------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,147,177     | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 3              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$3,146         | X Unshaded | 0.1         | 8                   | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 2                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$267,001       | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,139,227     | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$10,944        | X Unshaded | 0.1         | 7                   | 2                     | -           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$42,748        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$55,588        | X Unshaded | 0.1         | 9                   | 2                     | -           | 2                | 5              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 8              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$10,787        | X Unshaded | 0.1         | NA                  | 4                     | -           | 1                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$54,224        | X Unshaded | 0.1         | 8                   | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | AE         | 0.9         | 7                   | 2                     | -           | 4                | 6              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$89,106        | AE         | 0.9         | 5                   | 1                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 5              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$149,212       | X Shaded   | 0.1         | NA                  | NA                    | -           | 5                | 7              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$119           | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | AE         | 0.1         | 10                  | 3                     | -           | 0                | 0              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline            | Facility Type | Address | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|---------------|---------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,163,989     | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 3              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,750,777     | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 6              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$78,211        | AE         | 1.5         | 6                   | 2                     | -           | 0                | 4              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$2,016,339     | AE         | 0.9         | 6                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$2,016,339     | X Shaded   | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$2,016,339     | X Shaded   | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$43,660        | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$43,660        | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,147,177     | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$521,778       | X Unshaded | 0.1         | 9                   | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$521,778       | X Unshaded | 0.1         | 9                   | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$3,146         | X Unshaded | 0.1         | 8                   | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 4              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Shaded   | 0.1         | 7                   | 2                     | Y           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 4              |



**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline            | Facility Type | Address | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|---------------|---------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 2                | 4              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$267,001       | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,139,227     | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 4              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,139,227     | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,139,227     | X Unshaded | 0.1         | 10                  | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,139,227     | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,139,227     | X Unshaded | 0.1         | 10                  | 2                     | -           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$1,139,227     | X Unshaded | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$10,944        | X Unshaded | 0.1         | 7                   | 2                     | -           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$42,748        | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$8,280         | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 2              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$8,280         | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$32,529        | AE         | 4.3         | 3                   | 1                     | -           | 4                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons | -       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 2              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline            | Facility Type                        | Address                     | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|--------------------------------------|-----------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$149,212       | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 3              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | AE         | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$1,163,989     | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$1,163,989     | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$1,750,777     | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$43,008        | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 3              |
| Food, Hydration, Shelter | Swine Lagoons                        | -                           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 2              |
| Food, Hydration, Shelter | Public Schools - Chocowinity Primary | 606 Gray Road               | \$4,955,316     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 1                | 0              |
| Food, Hydration, Shelter | Public Schools - Northside High      | 7868 Free Union Church Road | \$18,398,088    | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 5              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline            | Facility Type                                    | Address                      | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|--|------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Public Schools - P S Jones Middle                | 4105 N Market Street Ext     | \$26,824,548    | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Food, Hydration, Shelter | Public Schools - Washington Montessori           | 2330 Old Bath Hwy            | \$7,197,089     | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 5              |
| Food, Hydration, Shelter | Public Schools - John Small Elementary           | 4103 North Market Street Ext | \$26,824,548    | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Food, Hydration, Shelter | Public Schools - Northeast Elementary            | 21000 US Hwy 264 East        | \$19,025,484    | X Unshaded | 0.1         | NA                  | 3                     | Y           | 3                | 0              |
| Food, Hydration, Shelter | Public Schools - Southside High                  | 5700 Hwy 33 East             | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 6              |
| Food, Hydration, Shelter | Public Schools - Beaufort Co Early College High  | 5337 Hwy 264 East            | \$25,369,874    | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 4              |
| Food, Hydration, Shelter | Non-Public Schools - Emmanuel Christian School   | 3078 US Highway 17 North     | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 2                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - Terra Ceia Christian School | 4428 Christian School Road   | -               | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 4              |
| Food, Hydration, Shelter | Non-Public Schools - Unity Christian Academy     | 1501 Haw Branch Rd.          | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 8              |
| Food, Hydration, Shelter | Animal Farms - Ted and Jack Allen, Inc. # 2      | -                            | \$479,758       | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 7              |
| Food, Hydration, Shelter | Animal Farms - 3B Farms                          | -                            | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 5              |
| Food, Hydration, Shelter | Animal Farms - Gray Road Hog Farm Inc.           | -                            | \$3,000         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Food, Hydration, Shelter | Animal Farms - Vanguard Farms Inc                | -                            | \$1,756,246     | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 6              |
| Food, Hydration, Shelter | Animal Farms - Carowan Hog Farm                  | -                            | \$22,922        | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 4              |
| Food, Hydration, Shelter | Animal Farms - Benson Farms Inc (off-site farm)  | -                            | \$267,001       | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 4              |
| Food, Hydration, Shelter | Animal Farms - Wildwood Farm                     | -                            | \$1,750,777     | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 0              |
| Food, Hydration, Shelter | Animal Farms - Four Beez Sow Farm                | -                            | \$0             | X Unshaded | 0.1         | 9                   | 2                     | -           | 2                | 7              |
| Food, Hydration, Shelter | Animal Farms - L.H. Allen & Son, Inc. Sow Farm   | -                            | \$127,184       | AE         | 1.6         | 6                   | 2                     | Y           | 4                | 7              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline             | Facility Type   | Address                 | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------------------|---|-------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter  | Animal Farms - L.H. Allen & Son, Inc. - Finishing                                     | -                       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 5              |
| Food, Hydration, Shelter  | Animal Farms - Hodges Sow Farm  | -                       | \$1,163,989     | AE         | 1.7         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter  | Animal Farms - Beech Ridge Pork Farm Inc  | -                       | \$0             | X Unshaded | 0.1         | 9                   | 3                     | -           | 2                | 0              |
| Food, Hydration, Shelter  | Animal Farms - J. L. M. Pantego Farms, LLC  | -                       | \$1,139,227     | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Food, Hydration, Shelter  | Animal Farms - J.L.M. Pungo Farms, LLC  | -                       | \$2,016,339     | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter  | Animal Farms - J.L.M. Wilmar Farms LLC  | -                       | \$874,068       | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 5              |
| <b>City of Washington</b> |   |                         |                 |            |             |                     |                       |             |                  |                |
| Water Systems             | Sewer Treatment   | @ Tar River             | \$2,218,876     | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Safety & Security         | Law Enforcement - Washington Police Department  | 201 West 3rd Street     | \$127,755       | AE         | 0.2         | 8                   | 2                     | -           | 0                | 0              |
| Safety & Security         | Law Enforcement - Beaufort County Sheriffs Department                                 | 210 North Market Street | \$307,333       | X Unshaded | 0.1         | 10                  | 2                     | -           | 0                | 0              |
| Safety & Security         | Law Enforcement - United States Fish and Wildlife Service - Office Of Law Enforcement | 711 West 15th Street    | \$1,205,776     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security         | Fire Stations - Washington Fire and Rescue  | 410 North Market Street | \$658,893       | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Safety & Security         | Ems - Coastal Medical Transport Incorporated  | 122 West 5th Street     | \$17,530        | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Safety & Security         | Ems - Tar Heel Medical Transport  | 425 Grimes Road         | \$6,662         | X Unshaded | 0.1         | 7                   | 2                     | Y           | 0                | 0              |
| Safety & Security         | Ems - Washington Fire and Rescue  | 410 North Market Street | \$658,893       | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Safety & Security         | Emergency Operation Center - Beaufort County Emergency Management                     | 112 W Second St         | \$3,671,284     | X Unshaded | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Health & Medical          | Medical Facilities - Lifestyles Medical Fitness Center                                | 1375 Cowell Farm Road   | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline    | Facility Type  | Address                             | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|------------------|--|-------------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Health & Medical | Medical Facilities - Beaufort County DSS                     | 632 West 5th Street                 | -               | AE         | 3.6         | 5                   | 1                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - CareFocus                               | 222 West Stewart Parkway, Suite 100 | -               | AE         | 1.3         | 3                   | 1                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Coastal Carolina Home Health            | 1211 Highland Drive                 | -               | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Continuum Home Care of Washington       | 250 Lovers Lane                     | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 5              |
| Health & Medical | Medical Facilities - Quality Home Staffing, Inc.             | 1005 Brown Street                   | -               | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Tar Heel Home Health                    | 906 W. 15th Street                  | -               | X Unshaded | 0.1         | 10                  | 2                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Elks Rest Home, Inc.                    | 1218 Pamlico Street                 | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Washington Manor                        | 609 West 2nd Street                 | -               | X Unshaded | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Beaufort County Hospital                | 628 East Twelfth St                 | -               | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Beaufort County Developmental Center    | 1534 West Fifth Street              | -               | X Unshaded | 0.1         | 10                  | 2                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Beaufort County Group Home #1 (ARC-HUD) | 405 East 6th Street                 | -               | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Beaufort County Group Home #2 (ARC-HDS) | 903 East Seventh Street             | -               | AE         | 2.6         | 6                   | 2                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Keele's Therapeutic Home                | 1306 Harrington Street              | -               | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - LIFE, Inc./Minute Man Group Home        | 588 Minute Man Lane                 | \$1,946,506     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 1              |
| Health & Medical | Medical Facilities - Life, Inc./Washington Day Program       | 1502 Market Street                  | -               | X Unshaded | 0.1         | 10                  | 3                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Passages Counseling Services            | 323 West Second Street              | -               | AE         | 0.5         | 7                   | 2                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Potter's House of Beaufort County       | 319 East 11th Street                | -               | X Unshaded | 0.1         | 10                  | 3                     | -           | 0                | 0              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline            | Facility Type  | Address                           | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|--|-----------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Health & Medical         | Medical Facilities - Rainbow House                                 | 619 Plant Street                  | -               | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Refuge Helping Hands                          | 325 North Market Street           | -               | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Restorational Behavioral Health Services Inc. | 322 East 14th Street              | -               | X Unshaded | 0.1         | 10                  | 3                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Tideland House                                | 1755 Highland Drive               | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 2                | 0              |
| Health & Medical         | Medical Facilities - Tideland Mental Health Center                 | 1308 Highland Drive               | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Westside Group Home                           | 618 Plant Street                  | -               | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Britthaven of Washington                      | 250 Lovers Lane                   | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 5              |
| Health & Medical         | Medical Facilities - Ridgewood Manor, Inc.                         | 1624 Highland Drive               | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - B C Ed Tech Center                                | 820 North Bridge St               | \$1,258,521     | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Eastern Elementary                                | 947 Hudnell Street                | \$5,128,755     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - John C Tayloe Elementary                          | 910 Tarboro Street                | \$3,365,802     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Washington High                                   | 400 Slatestone Road               | \$20,830,005    | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - Woolard-Paige Academy                         | 148 Avon Avenue                   | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |
| <b>Town of Aurora</b>    |  |                                   |                 |            |             |                     |                       |             |                  |                |
| Water Systems            | Water Treatment Distribution                                       | -                                 | \$317,576       | X Unshaded | 0.1         | 9                   | 2                     | Y           | 5                | 0              |
| Water Systems            | Public Water Supply  | Adjacent To Water Treatment Plant | \$317,576       | X Unshaded | 0.1         | 8                   | 2                     | Y           | 5                | 0              |
| Safety & Security        | Law Enforcement - Aurora Police Department                         | 460 4th Street                    | \$317,576       | X Unshaded | 0.1         | 8                   | 2                     | Y           | 5                | 0              |
| Safety & Security        | Fire Stations - Aurora Fire Department and Rescue Squad            | 99 State Highway 33 East          | \$573,060       | X Unshaded | 0.1         | 9                   | 2                     | -           | 5                | 0              |

**ANNEX A: BEAUFORT COUNTY**

| FEMA Lifeline              | Facility Type  | Address                  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|----------------------------|--|--------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security          | Ems - Aurora Fire Department and Rescue Squad            | 99 State Highway 33 East | \$573,060       | X Unshaded | 0.1         | 9                   | 2                     | -           | 5                | 0              |
| Health & Medical           | Medical Facilities - Coastal Carolina Home Health Agency | 310 Pearl Street         | -               | X Unshaded | 0.1         | 8                   | 2                     | Y           | 5                | 0              |
| Food, Hydration, Shelter   | Public Schools - S W Snowden Elementary                  | 693 North 7th Street     | \$5,887,040     | X Shaded   | 0.1         | 6                   | 1                     | Y           | 0                | 0              |
| <b>Town of Bath</b>        |  |                          |                 |            |             |                     |                       |             |                  |                |
| Water Systems              | Water Treatment Distribution                             | -                        | \$18,494        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 5              |
| Water Systems              | Public Water Supply                                      | Water Plant @ Craven St  | \$2,106,136     | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Safety & Security          | Fire Stations - Bath Volunteer Fire Department           | 430 Carteret Street      | \$308,102       | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 3              |
| Food, Hydration, Shelter   | Public Schools - Bath Elementary                         | 110 S King Street        | \$5,458,678     | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 3              |
| <b>Town of Belhaven</b>    |  |                          |                 |            |             |                     |                       |             |                  |                |
| Water Systems              | Water Treatment Distribution                             | -                        | \$6,776         | AE         | 0.6         | 6                   | 1                     | Y           | 0                | 3              |
| Water Systems              | Sewer Treatment  | @ Battalina Creek        | \$357,070       | AE         | 1.7         | 4                   | 1                     | Y           | 3                | 3              |
| Safety & Security          | Law Enforcement - Belhaven Police Department             | 215 East Main Street     | \$0             | AE         | 2.6         | 2                   | 1                     | -           | 0                | 0              |
| Safety & Security          | Fire Stations - Belhaven Fire And Rescue                 | 245 Haslin Street        | \$218,091       | AE         | 1.2         | 5                   | 1                     | Y           | 0                | 0              |
| Safety & Security          | Ems - Belhaven Fire And Rescue                           | 245 Haslin Street        | \$218,091       | AE         | 1.2         | 5                   | 1                     | Y           | 0                | 0              |
| Health & Medical           | Medical Facilities - Pungo District Hospital Corporation | 202 East Water St        | -               | AE         | 2.4         | 3                   | 1                     | -           | 0                | 0              |
| Health & Medical           | Medical Facilities - Pungo District Hospital             | 202 E. Water Street      | -               | AE         | 2.4         | 3                   | 1                     | -           | 0                | 0              |
| Food, Hydration, Shelter   | Non-Public Schools - Pungo Christian Academy             | 983 West Main Street     | -               | AE         | 3.1         | 3                   | 1                     | Y           | 4                | 0              |
| <b>Town of Chocowinity</b> |  |                          |                 |            |             |                     |                       |             |                  |                |
| Water Systems              | Water Treatment Distribution                             | -                        | \$232,277       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 4              |
| Water Systems              | Water Treatment Distribution                             | -                        | \$22,437        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 1                | 2              |
| Safety & Security          | Law Enforcement - Chocowinity Police Department          | 3359 US Hwy 17 South     | \$315,355       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |

**ANNEX A: BEAUFORT COUNTY**

| <b>FEMA Lifeline</b>     | <b>Facility Type</b>                                      | <b>Address</b>            | <b>Structure Value</b> | <b>Flood Zone</b> | <b>Flood Depth</b> | <b>Min. Sea Level Rise</b> | <b>Min. Storm Surge Cat.</b> | <b>High WUIRI?</b> | <b>Burn Probability</b> | <b>Fire Intensity</b> |
|--------------------------|---|---------------------------|------------------------|-------------------|--------------------|----------------------------|------------------------------|--------------------|-------------------------|-----------------------|
| Safety & Security        | Fire Stations - Chocowinity Volunteer Fire Department     | 512 State Hwy 33 East     | \$1,687,264            | X Unshaded        | 0.1                | NA                         | NA                           | -                  | 0                       | 5                     |
| Safety & Security        | Ems - Chocowinity Emergency Medical Services Incorporated | 512 State Hwy 33 East     | \$1,687,264            | X Unshaded        | 0.1                | NA                         | NA                           | -                  | 0                       | 5                     |
| Health & Medical         | Medical Facilities - Life, Inc./Edgewood Group Home       | 506 Edgewood Drive        | -                      | X Unshaded        | 0.1                | NA                         | NA                           | Y                  | 0                       | 0                     |
| Food, Hydration, Shelter | Public Schools - Chocowinity Middle                       | 3831 US HWY 17 S          | \$4,332,018            | X Unshaded        | 0.1                | NA                         | NA                           | Y                  | 1                       | 0                     |
| <b>Town of Pantego</b>   |   |                           |                        |                   |                    |                            |                              |                    |                         |                       |
| Safety & Security        | Fire Stations - Pantego Fire Department                   | 25673 US Highway 264 East | \$269,824              | AE                | 1.0                | 6                          | 2                            | Y                  | 0                       | 0                     |



## A.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level within Beaufort County. The hazards included in this section are flood and wildfire.

### A.2.1 FLOODING

Table A.10 details the acreage of Beaufort County's total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at 98 percent, the Town of Belhaven has the largest portion of its land area within the mapped 1%-annual-chance floodplain, followed by Washington Park. The towns of Chocowinity and Washington have the lowest portion of land in the 1%-annual-chance floodplain, at 1 percent and 16 percent, respectively. Overall, 19 percent of the county's total land area falls within this floodplain.

**Table A.10 - Flood Zone Acreage by Jurisdiction, Beaufort County**

| Flood Zone                 | Acreage        | Percent of Total (%) |
|----------------------------|----------------|----------------------|
| <b>Town of Aurora</b>      |                |                      |
| Zone AE                    | 264.5          | 38.1                 |
| Zone X (500-year)          | 44.5           | 6.4                  |
| Zone X (unshaded)          | 384.8          | 55.5                 |
| <b>Total</b>               | <b>693.8</b>   | --                   |
| <b>Town of Bath</b>        |                |                      |
| Zone AE                    | 170.9          | 26.5                 |
| Zone VE                    | 271.0          | 41.9                 |
| Zone X (500-year)          | 0.2            | 0.03                 |
| Zone X (unshaded)          | 204.1          | 31.6                 |
| <b>Total</b>               | <b>646.2</b>   | --                   |
| <b>Town of Belhaven</b>    |                |                      |
| Zone AE                    | 1,374.3        | 98.3                 |
| Zone X (500-Year)          | 16.3           | 1.2                  |
| Zone X (unshaded)          | 7.0            | 0.5                  |
| <b>Total</b>               | <b>1,397.5</b> | --                   |
| <b>Town of Chocowinity</b> |                |                      |
| Zone AE                    | 10.3           | 1.5                  |
| Zone X (500-year)          | 3.3            | 0.5                  |
| Zone X (unshaded)          | 691.2          | 98.1                 |
| <b>Total</b>               | <b>704.8</b>   | --                   |
| <b>Town of Pantego</b>     |                |                      |
| Zone AE                    | 97.5           | 22.7                 |
| Zone X (500-year)          | 41.5           | 9.7                  |
| Zone X (unshaded)          | 290.0          | 67.6                 |
| <b>Total</b>               | <b>428.9</b>   | --                   |

| Flood Zone                            | Acreage          | Percent of Total (%) |
|---------------------------------------|------------------|----------------------|
| <b>City of Washington</b>             |                  |                      |
| Zone AE                               | 916.0            | 16.6                 |
| Zone VE                               | 315.0            | 5.7                  |
| Zone X (500-year)                     | 179.0            | 3.3                  |
| Zone X (unshaded)                     | 4,027.9          | 73.2                 |
| Open Water                            | 67.7             | 1.2                  |
| <b>Total</b>                          | <b>5,505.6</b>   | <b>--</b>            |
| <b>Town of Washington Park</b>        |                  |                      |
| Zone AE                               | 78.7             | 38.6                 |
| Zone VE                               | 34.2             | 16.8                 |
| Zone X (500-year)                     | 34.6             | 17.0                 |
| Zone X (unshaded)                     | 56.2             | 27.6                 |
| <b>Total</b>                          | <b>203.8</b>     | <b>--</b>            |
| <b>Unincorporated Beaufort County</b> |                  |                      |
| Zone AE                               | 118,014.3        | 19.6                 |
| Zone AO                               | 16.1             | 0.003                |
| Zone VE                               | 12,280.3         | 2.0                  |
| Zone X (500-year)                     | 20,272.5         | 3.4                  |
| Zone X (unshaded)                     | 410,219.0        | 68.1                 |
| Open Water                            | 41,843.4         | 6.9                  |
| <b>Total</b>                          | <b>602,645.6</b> | <b>--</b>            |

Source: FEMA Effective DFIRM; U.S. Census Bureau

Figure A.9 through Figure A.16 reflect the effective mapped flood hazard zones for all jurisdictions in Beaufort County, and Figure A.17 through Figure A.24 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table A.11 provides building counts and values for critical facilities by flood zone in Beaufort County and incorporated jurisdictions.

**Table A.11 - Critical Facilities Exposed to Flooding, Beaufort County**

| Flood Zone                 | Critical Facility Count | Structure Value    |
|----------------------------|-------------------------|--------------------|
| <b>Town of Aurora</b>      |                         |                    |
| Zone X (500-year)          | 1                       | \$5,887,040        |
| Zone X (unshaded)          | 6                       | \$2,098,848        |
| <b>Total</b>               | <b>7</b>                | <b>\$7,985,888</b> |
| <b>Town of Bath</b>        |                         |                    |
| Zone X (unshaded)          | 4                       | \$7,891,410        |
| <b>Total</b>               | <b>4</b>                | <b>\$7,891,410</b> |
| <b>Town of Belhaven</b>    |                         |                    |
| Zone AE                    | 8                       | \$800,028          |
| <b>Total</b>               | <b>8</b>                | <b>\$800,028</b>   |
| <b>Town of Chocowinity</b> |                         |                    |
| Zone X (unshaded)          | 7                       | \$8,276,615        |
| <b>Total</b>               | <b>7</b>                | <b>\$8,276,615</b> |

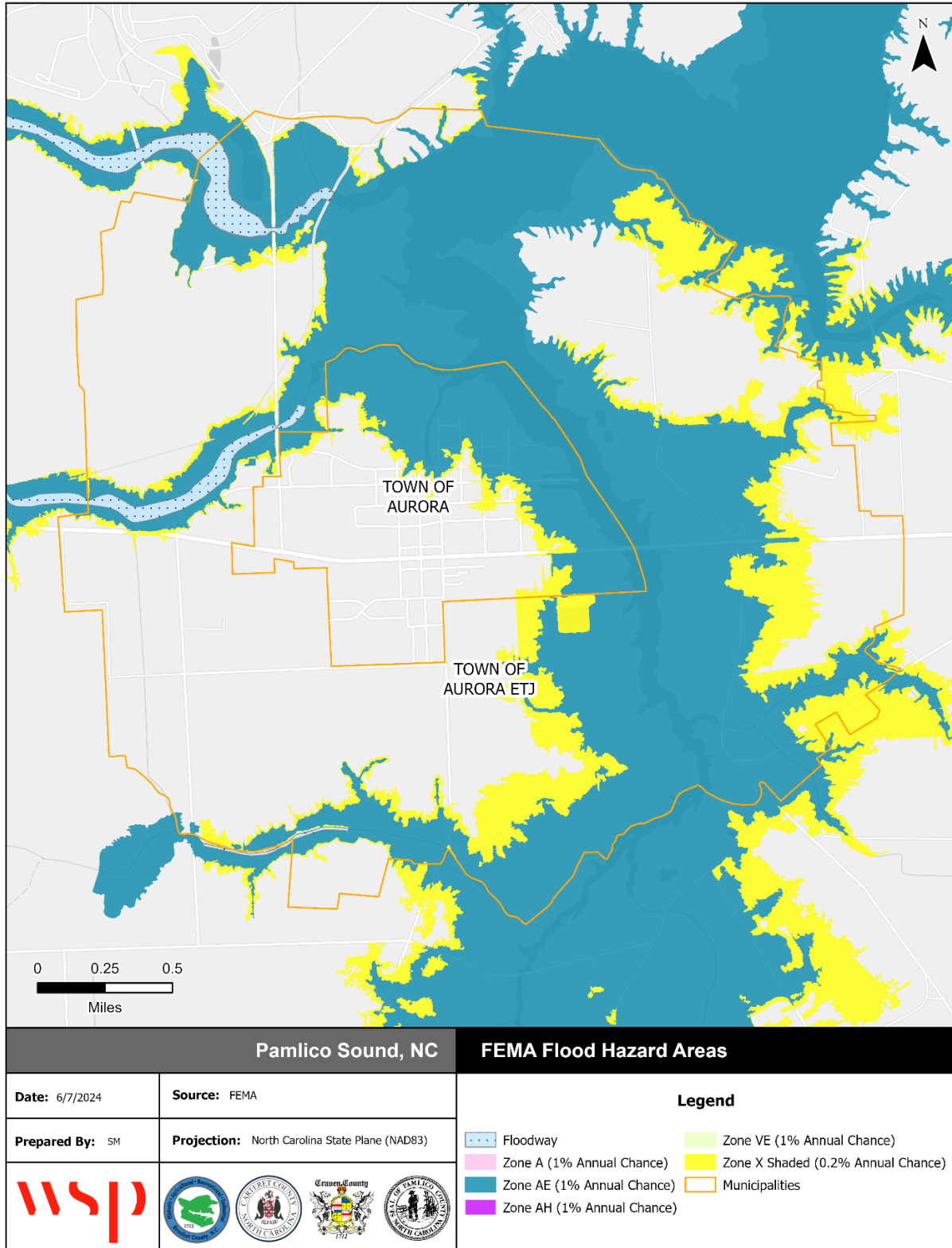
**ANNEX A: BEAUFORT COUNTY**

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| <b>Flood Zone</b>                     | <b>Critical Facility Count</b> | <b>Structure Value</b> |
|---------------------------------------|--------------------------------|------------------------|
| <b>Town of Pantego</b>                |                                |                        |
| Zone AE                               | 1                              | \$269,824              |
| <b>Total</b>                          | <b>1</b>                       | <b>\$269,824</b>       |
| <b>City of Washington</b>             |                                |                        |
| Zone AE                               | 5                              | \$127,755              |
| Zone X (500-year)                     | 2                              | \$2,218,876            |
| Zone X (unshaded)                     | 33                             | \$39,055,960           |
| <b>Total</b>                          | <b>40</b>                      | <b>\$41,402,591</b>    |
| <b>Unincorporated Beaufort County</b> |                                |                        |
| Zone AE                               | 22                             | \$5,945,442            |
| Zone X (500-year)                     | 11                             | \$6,895,170            |
| Zone X (unshaded)                     | 140                            | \$280,664,809          |
| <b>Total</b>                          | <b>173</b>                     | <b>\$293,505,421</b>   |

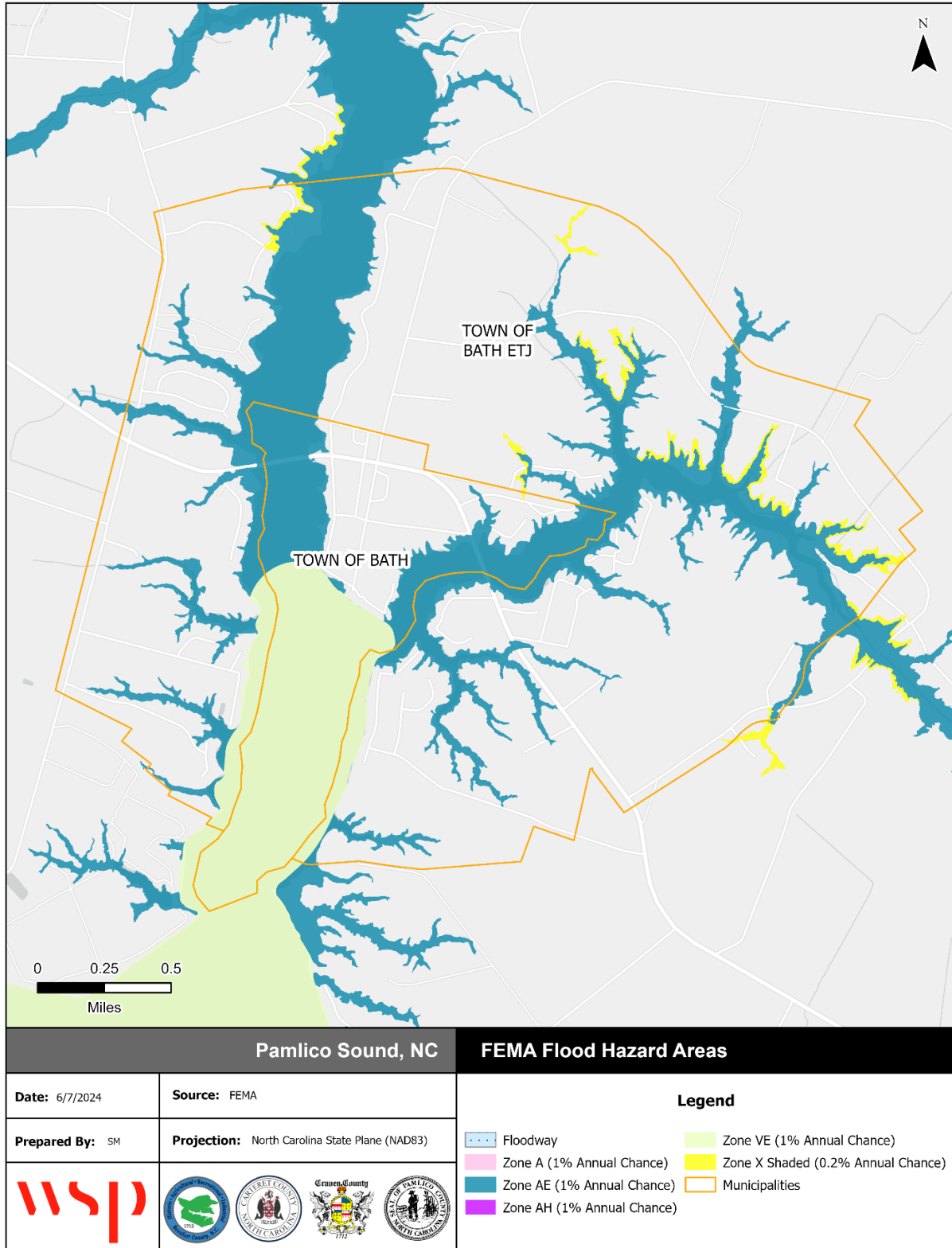
Source: FEMA Effective FIRM

Figure A.9 - FEMA Flood Hazard Areas, Town of Aurora



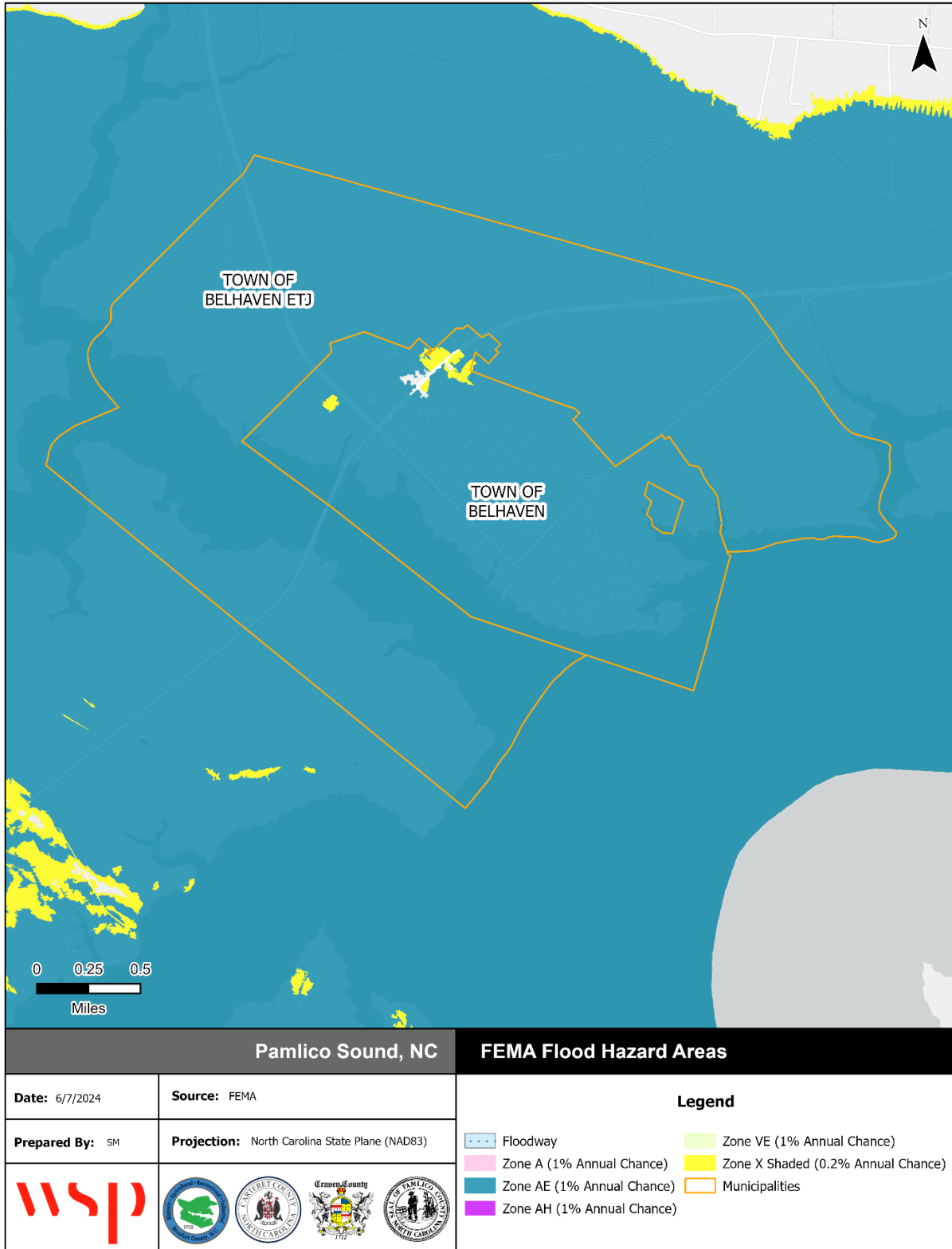
Source: FEMA Effective DFIRM

Figure A.10 - FEMA Flood Hazard Areas, Town of Bath



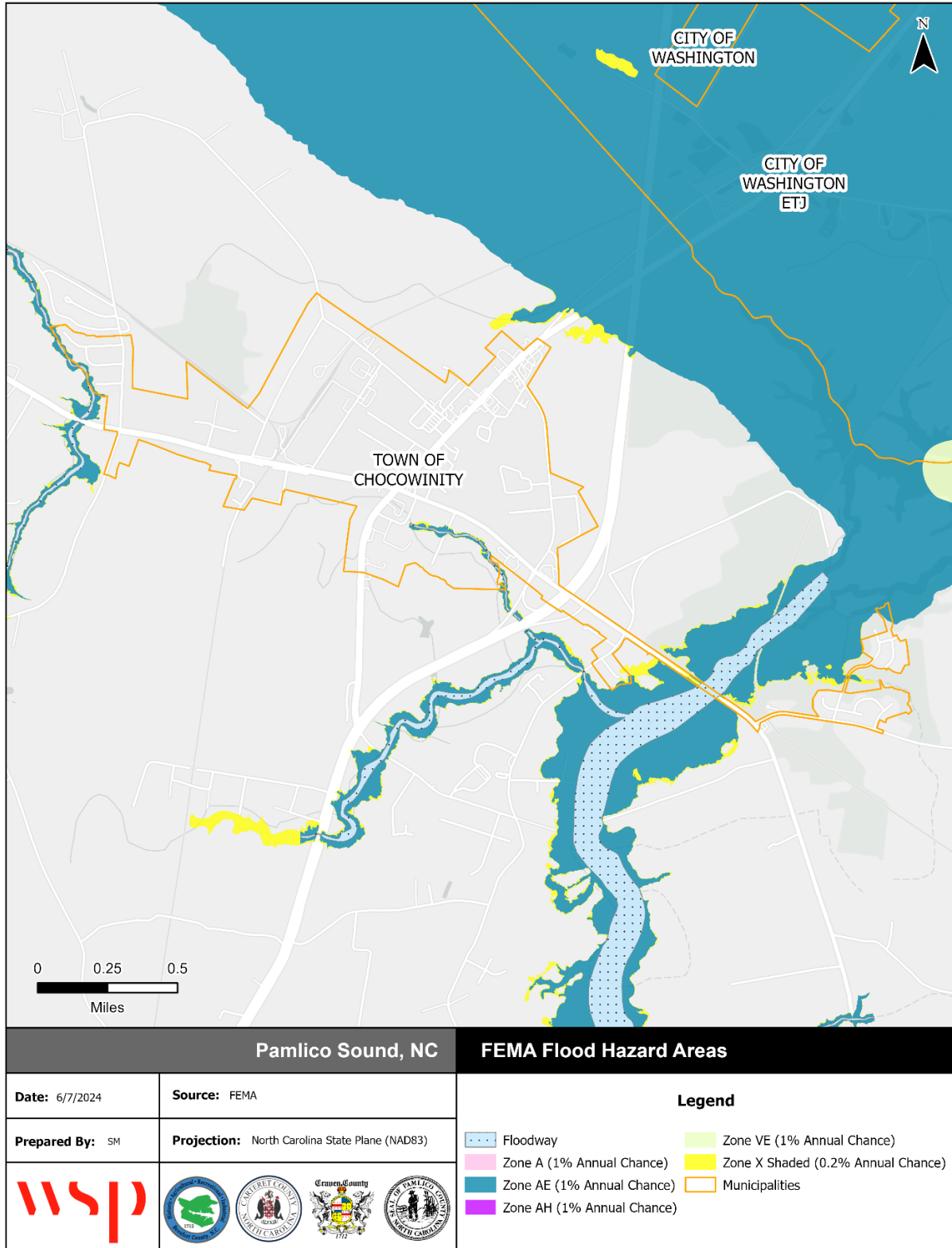
Source: FEMA Effective DFIRM

Figure A.11 - FEMA Flood Hazard Areas, Town of Belhaven



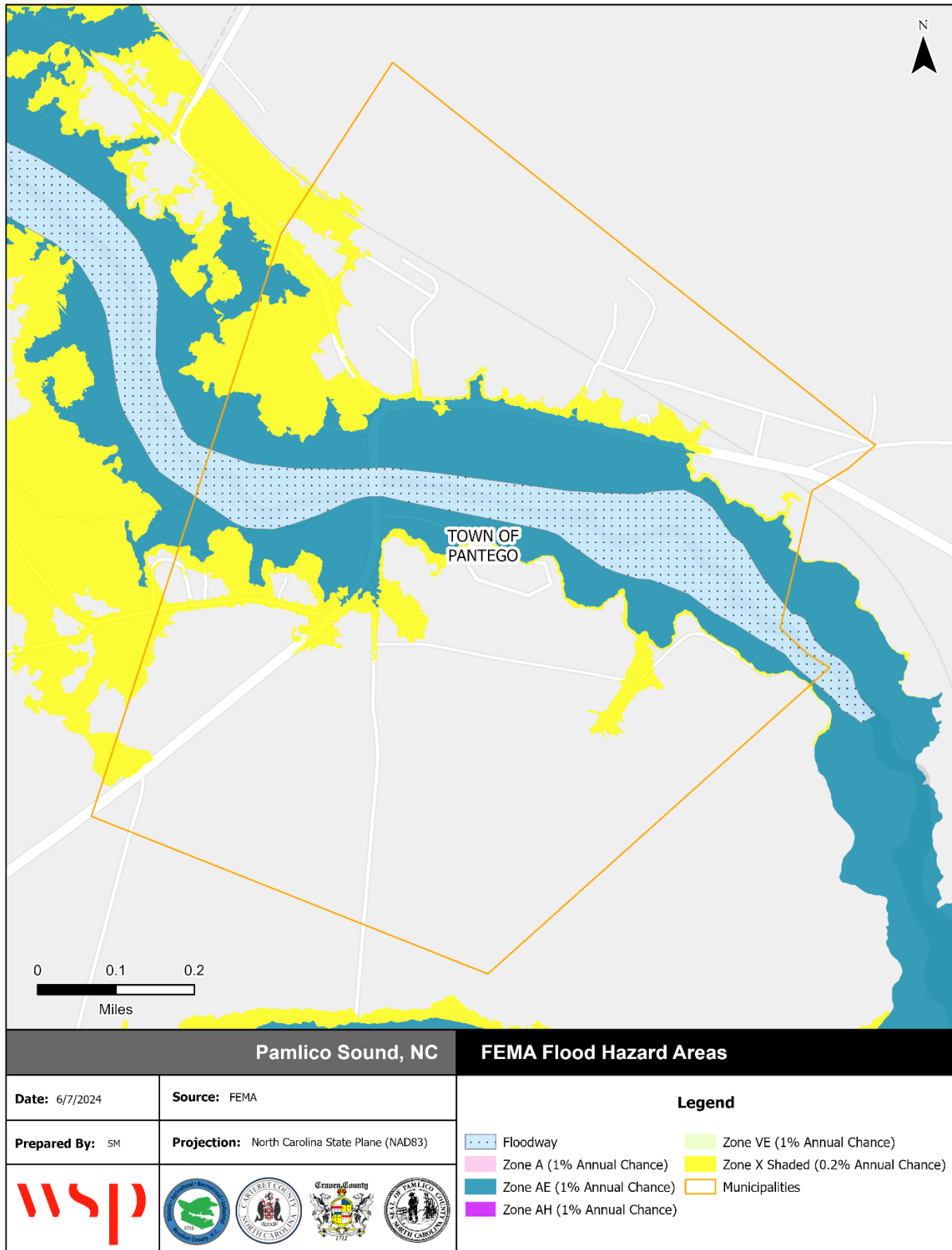
Source: FEMA Effective DFIRM

Figure A.12 - FEMA Flood Hazard Areas, Town of Chocowinity



Source: FEMA Effective DFIRM

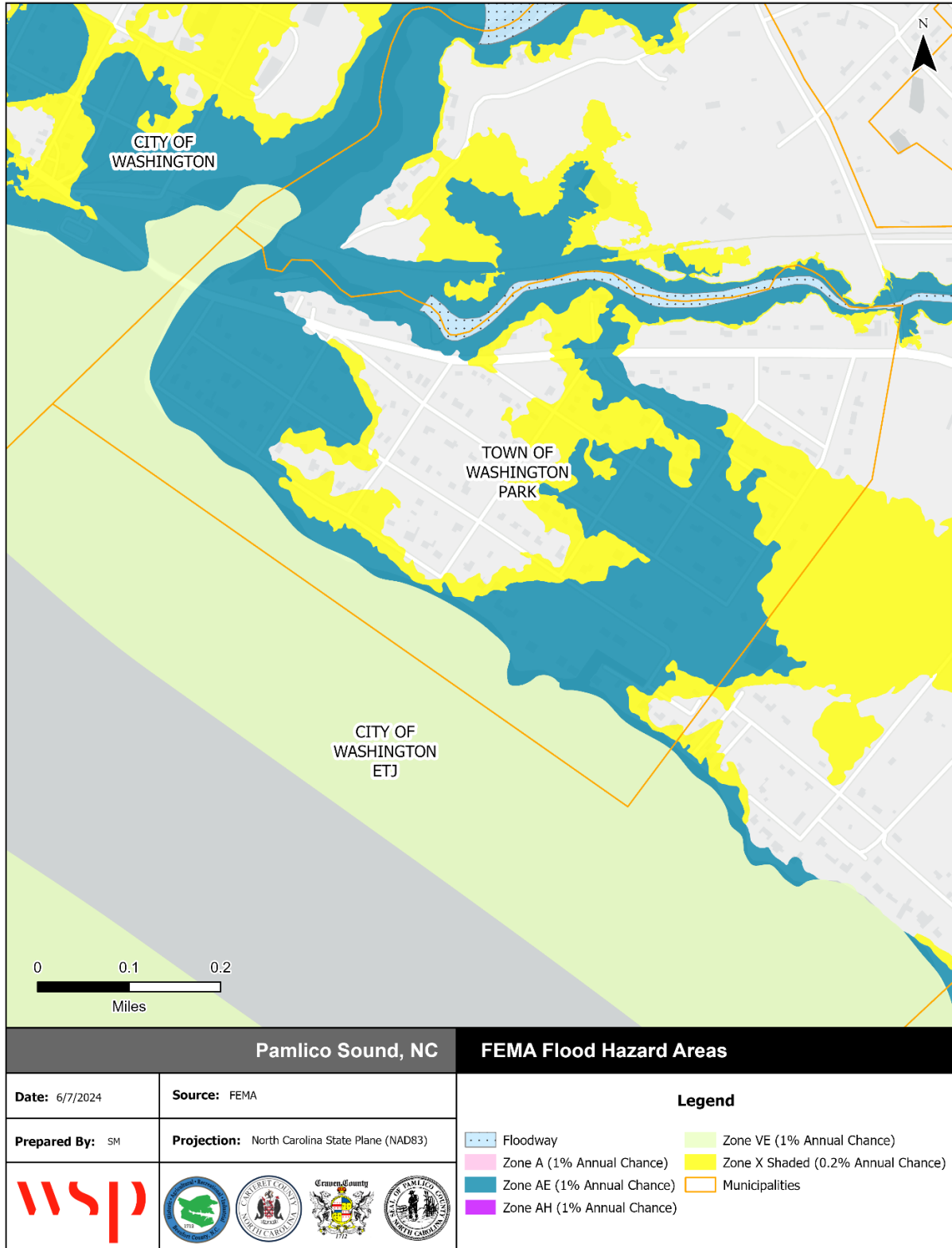
Figure A.13 - FEMA Flood Hazard Areas, Town of Pantego



Source: FEMA Effective DFIRM

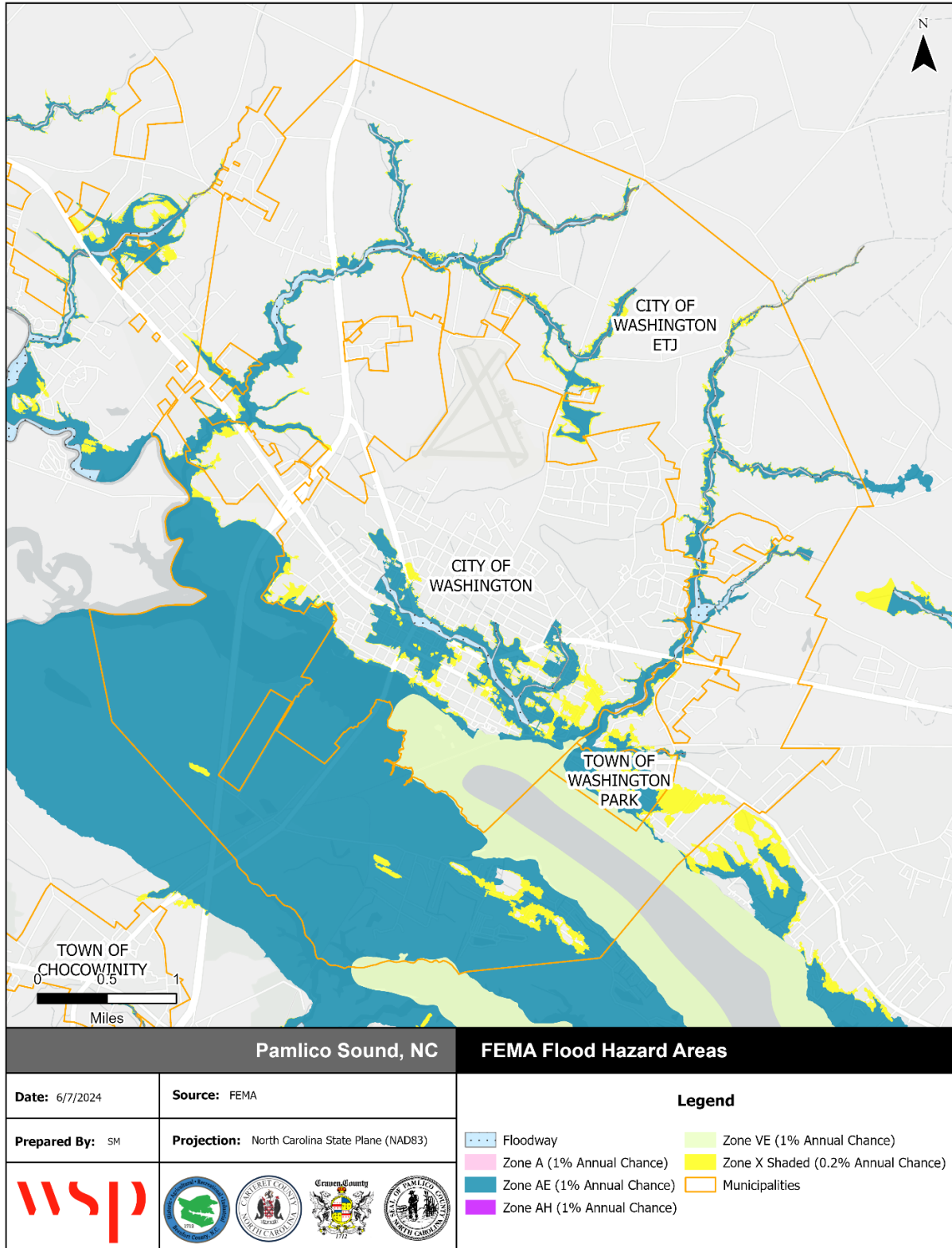


Figure A.14 – FEMA Flood Hazard Areas, Town of Washington Park



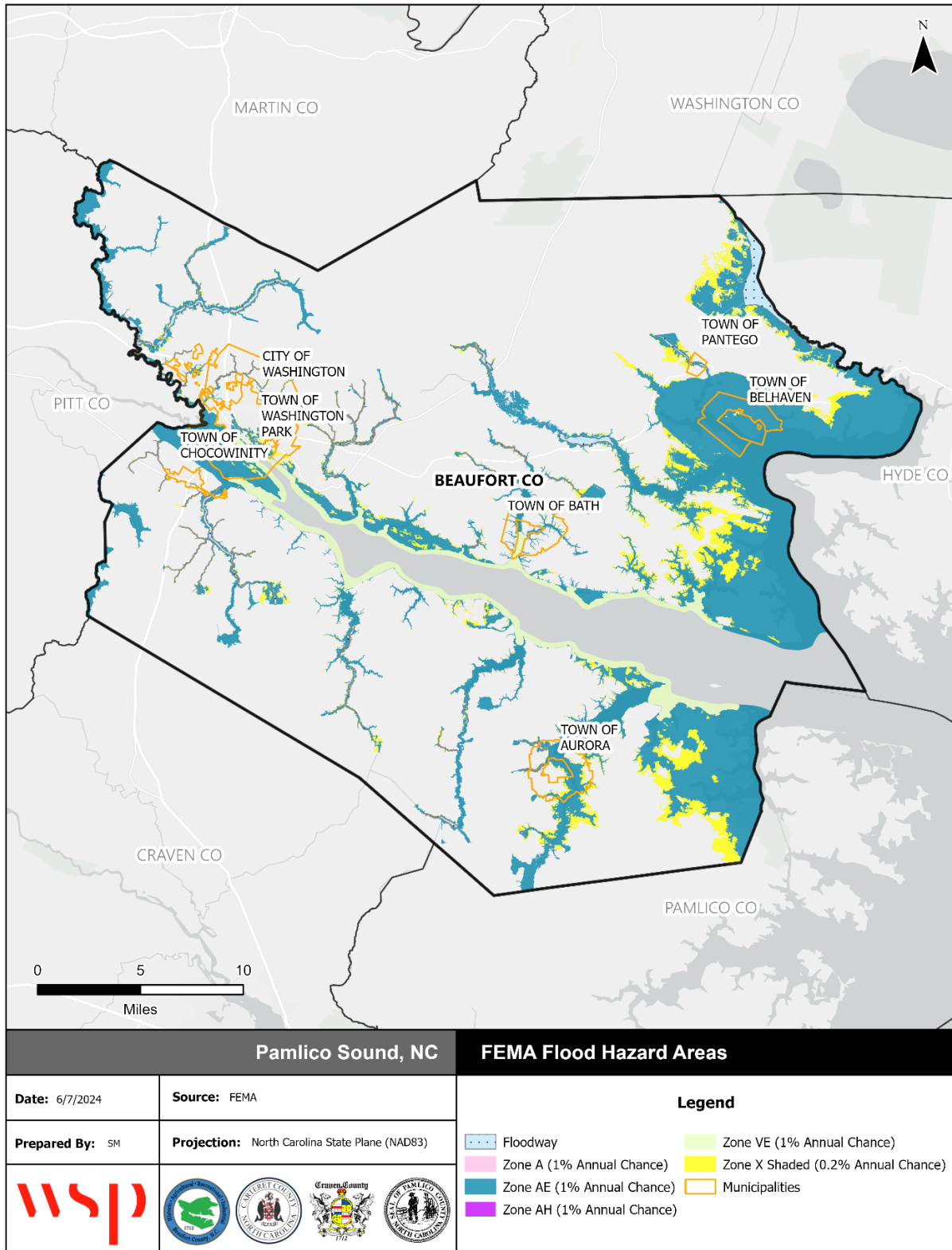
Source: FEMA Effective DFIRM

Figure A.15 – FEMA Flood Hazard Areas, City of Washington



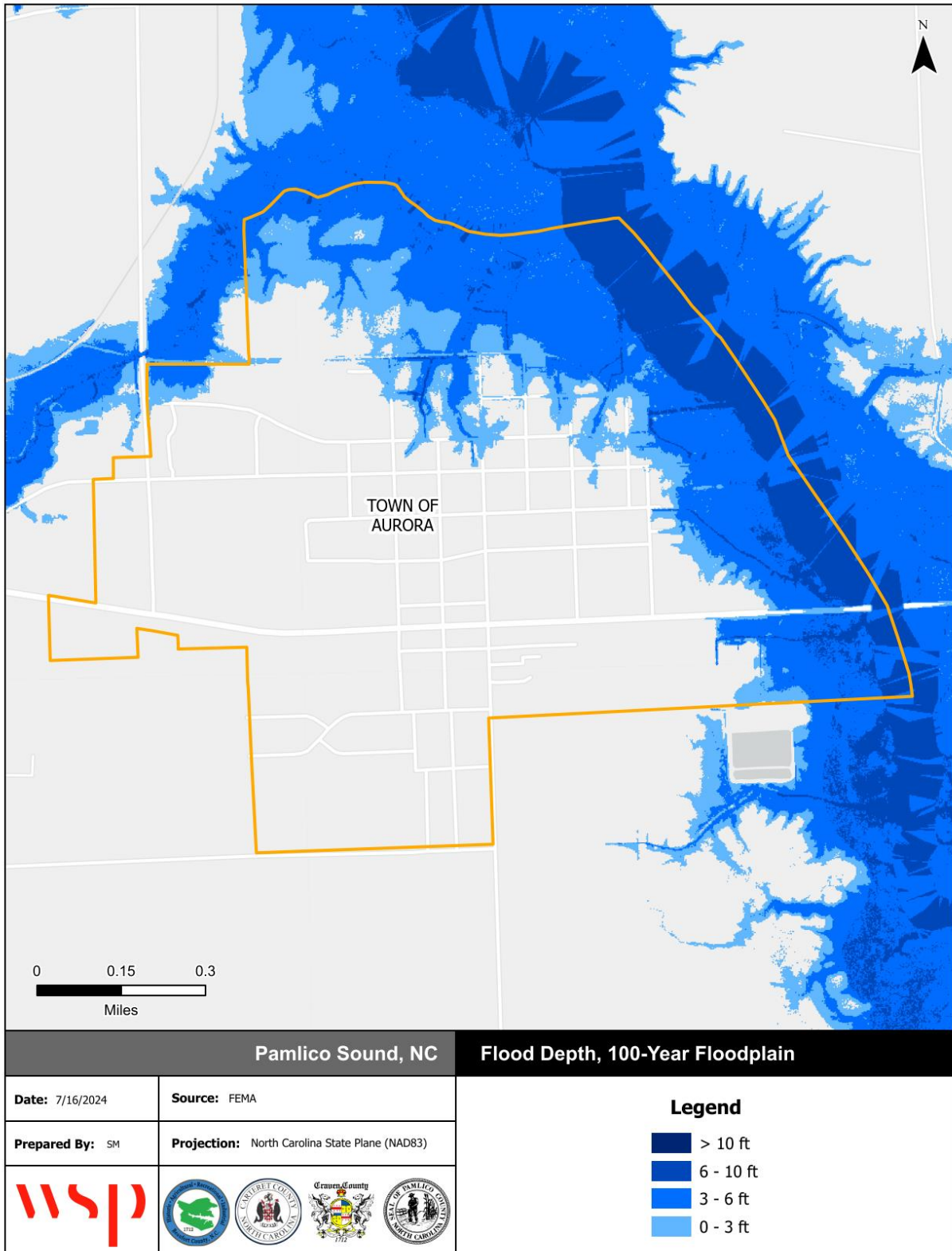
Source: FEMA Effective DFIRM

Figure A.16 – FEMA Flood Hazard Areas, Unincorporated Beaufort County



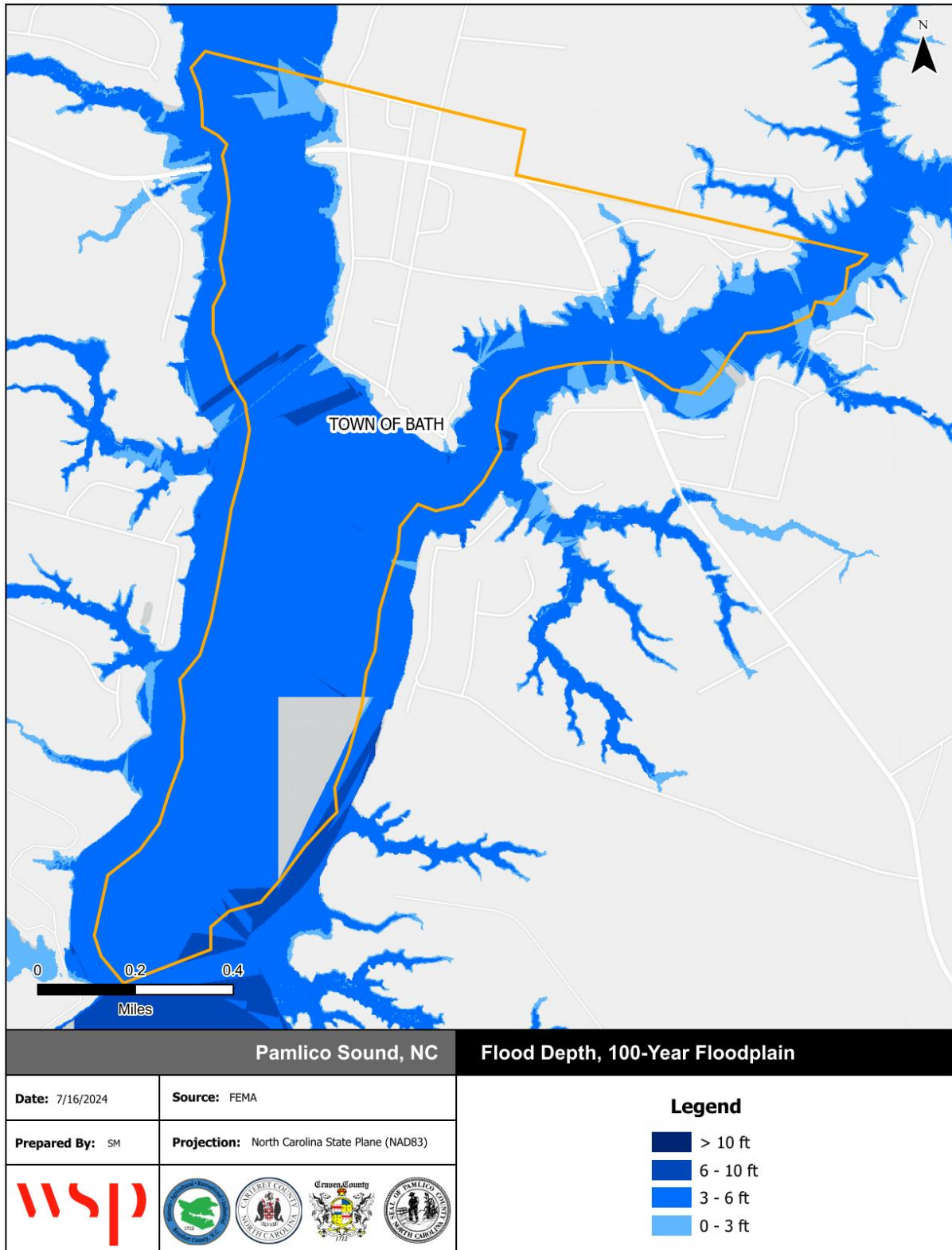
Source: FEMA Effective DFIRM

Figure A.17 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Aurora



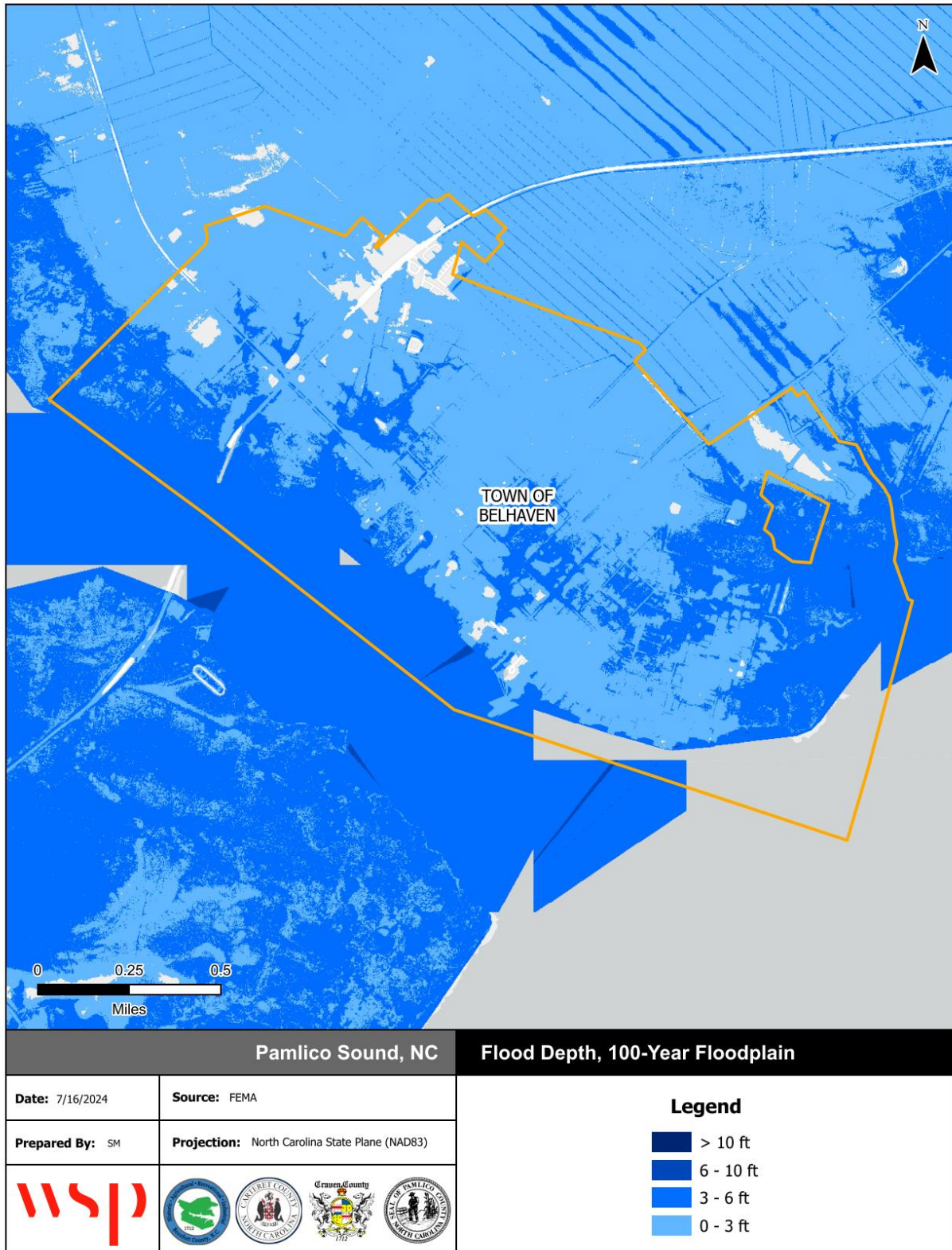
Source: FEMA Effective DFIRM

Figure A.18 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Bath



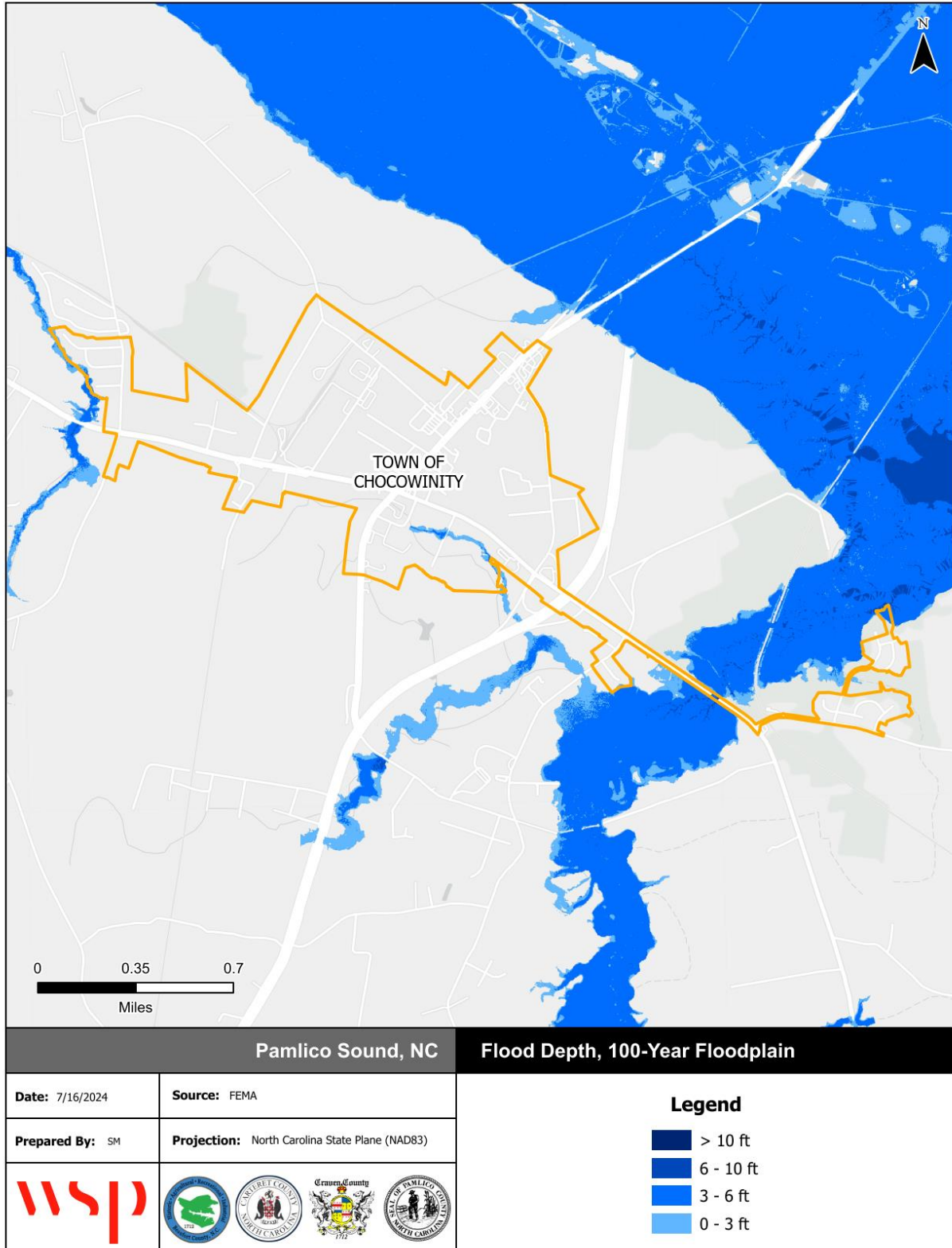
Source: FEMA Effective DFIRM

Figure A.19 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Belhaven



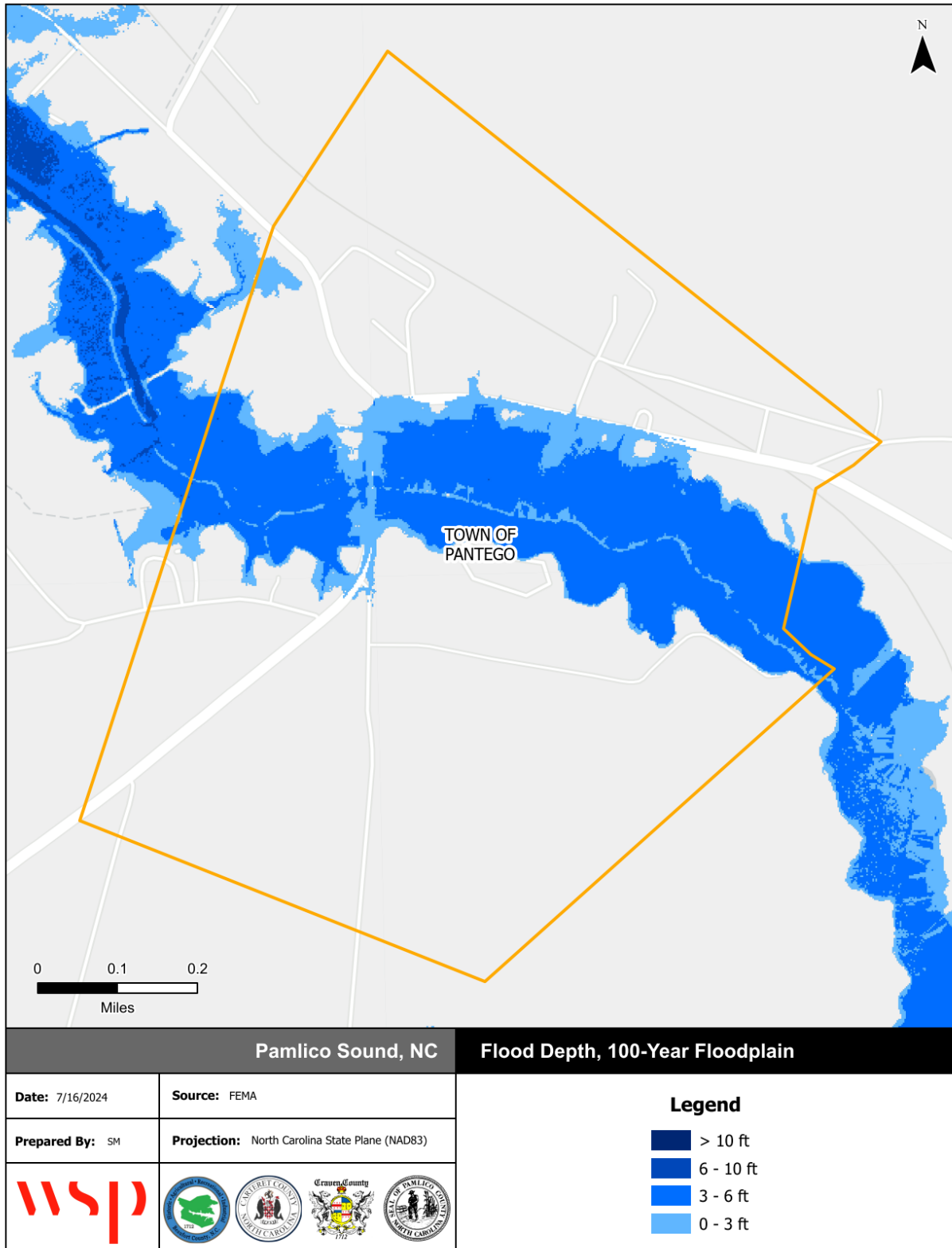
Source: FEMA Effective DFIRM

Figure A.20 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Chocowinity



Source: FEMA Effective DFIRM

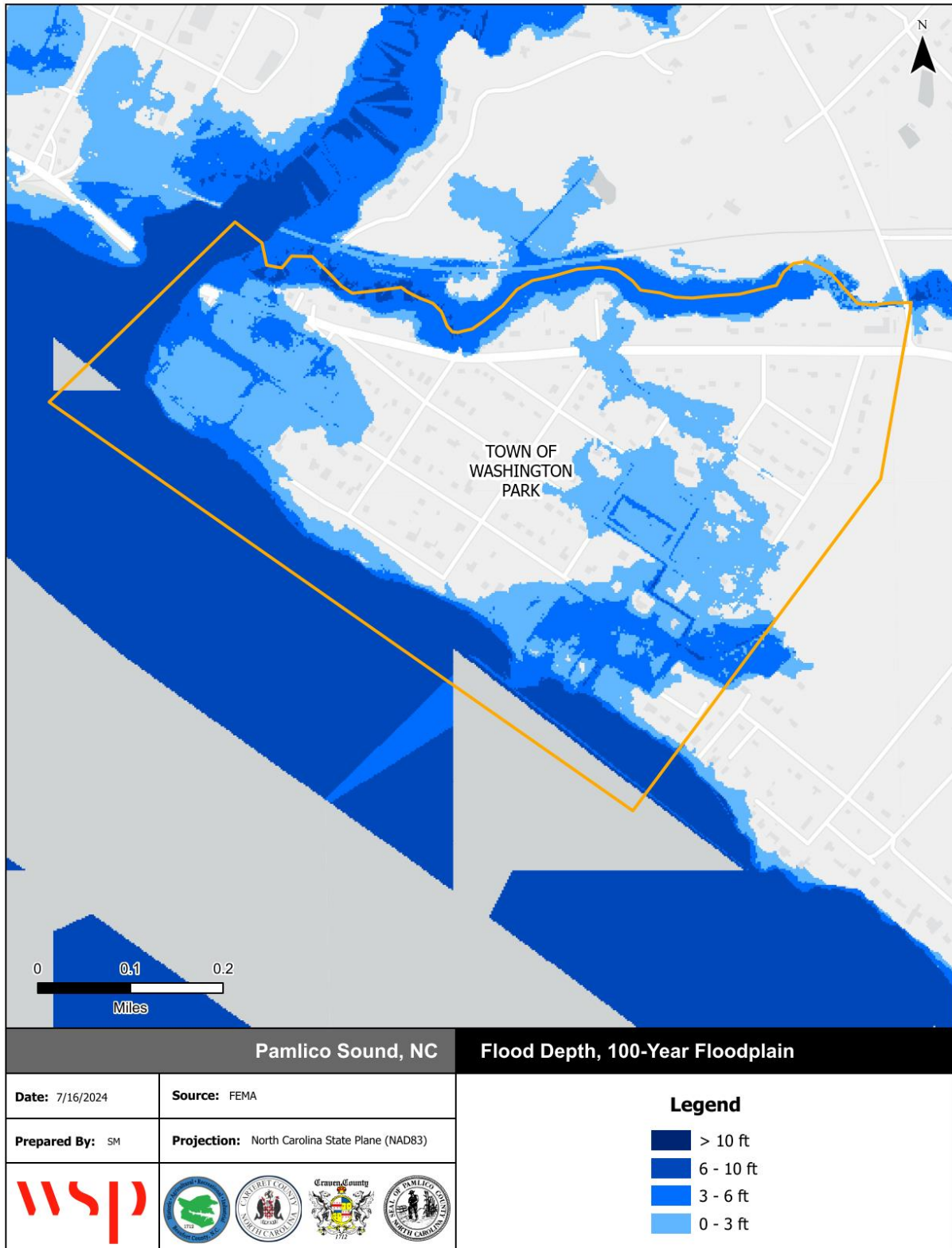
Figure A.21 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Pantego



Source: FEMA Effective DFIRM

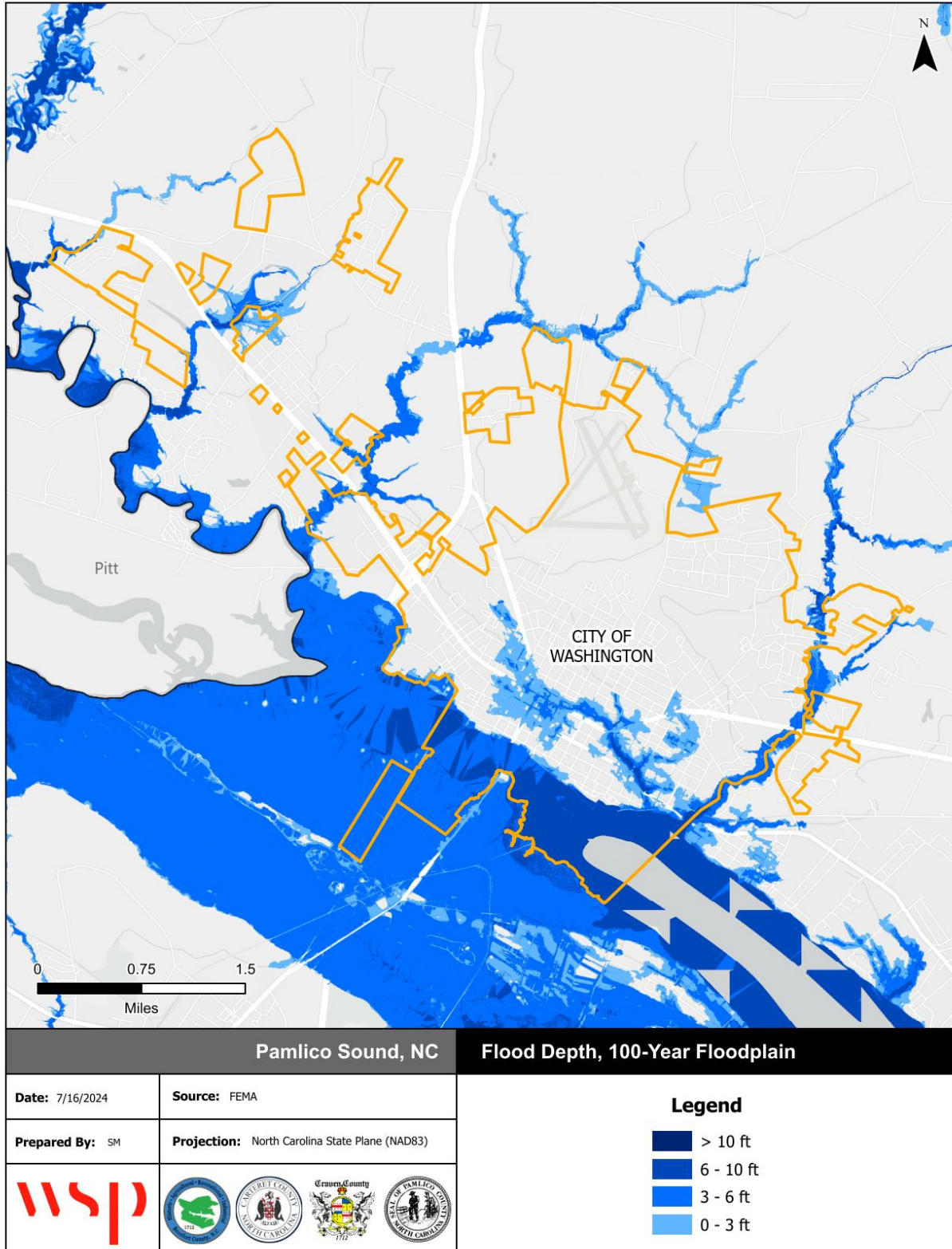


Figure A.22 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Washington Park



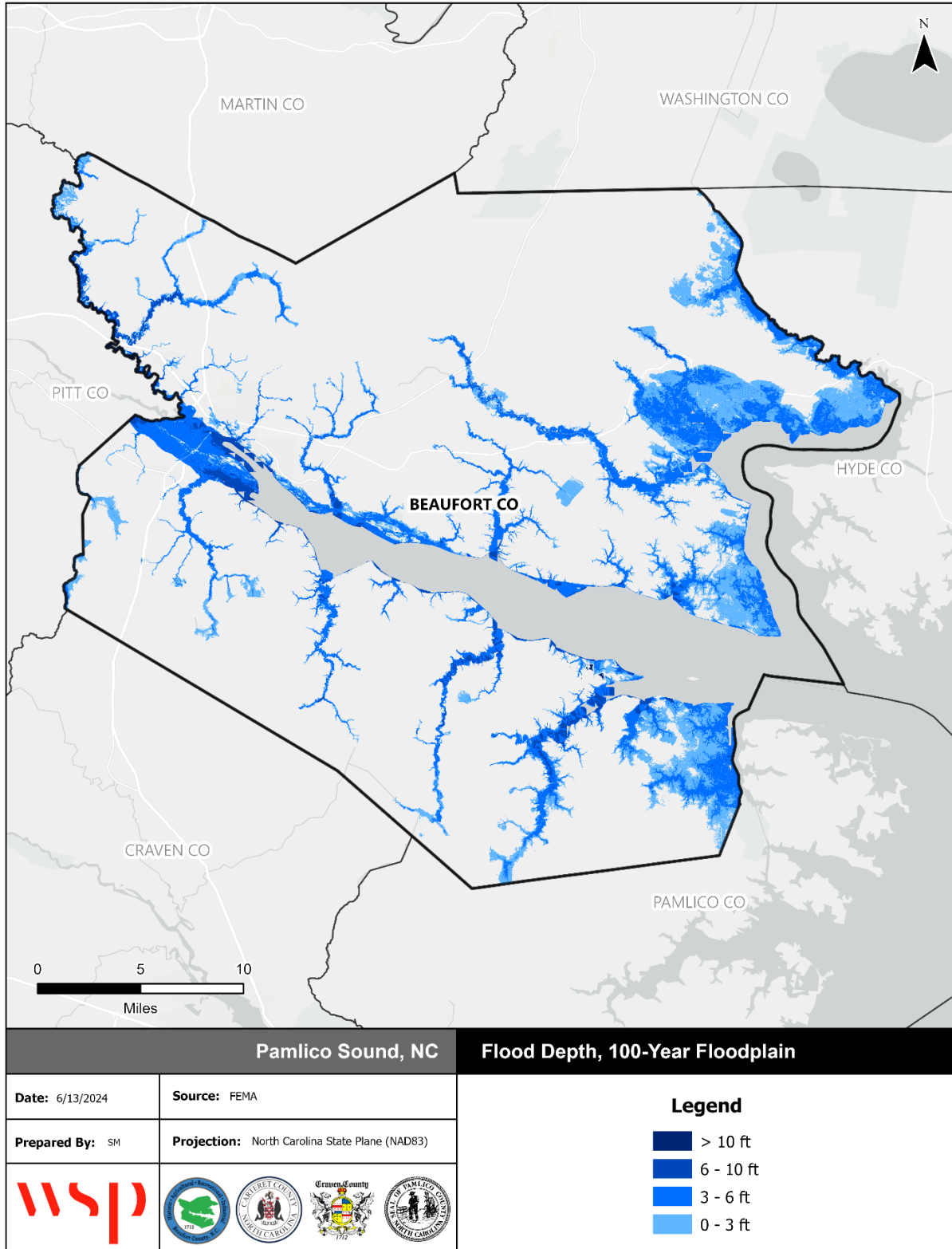
Source: FEMA Effective DFIRM

Figure A.23 - Flood Depth, 1%-Annual-Chance Floodplain, City of Washington



Source: FEMA Effective DFIRM

Figure A.24 - Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Beaufort County



Source: FEMA Effective DFIRM

**A.2.1.1 FLOOD INSURANCE DATA**

The following tables reflect NFIP entry dates as well as policy and claims data for Beaufort County and incorporated jurisdictions categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

**Table A.12 – NFIP Program Entry Dates**

| Community                             | Emergency Entry    | Regular Program Entry |
|---------------------------------------|--------------------|-----------------------|
| Beaufort County (Unincorporated Area) | June 9, 1972       | February 4, 1987      |
| Town of Aurora                        | June 4, 1975       | January 3, 1986       |
| Town of Bath                          | April 8, 1987      | April 8, 1987         |
| Town of Belhaven                      | October 27, 1972   | May 16, 1977          |
| Town of Chocowinity                   | N/A                | June 30, 1997         |
| Town of Pantego                       | November 24, 1975  | August 5, 1985        |
| Town of Washington Park               | September 29, 1972 | November 22, 1976     |
| City of Washington                    | October 6, 1972    | February 2, 1977      |

**Table A.13 – NFIP Policy and Claims Data by Structure Type**

| Structure Type             | Policies in Force | Total Premium    | Insurance in Force  | Number of Closed Paid Losses | Total of Closed Paid Losses |
|----------------------------|-------------------|------------------|---------------------|------------------------------|-----------------------------|
| <b>Town of Aurora</b>      |                   |                  |                     |                              |                             |
| Single Family              | 18                | \$11,397         | \$3,475,000         | 30                           | \$442,283.53                |
| 2-4 Family                 | 5                 | \$3,307          | \$1,330,000         | 0                            | \$0.00                      |
| All Other Residential      | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| Non-Residential            | 5                 | \$2,792          | \$414,000           | 10                           | \$67,695.98                 |
| <b>Total</b>               | <b>28</b>         | <b>\$17,496</b>  | <b>\$5,219,000</b>  | <b>40</b>                    | <b>\$509,979.51</b>         |
| <b>Town of Bath</b>        |                   |                  |                     |                              |                             |
| Single Family              | 51                | \$33,702         | \$14,876,000        | 32                           | \$362,100.53                |
| 2-4 Family                 | 1                 | \$821            | \$319,000           | 1                            | \$18,218.52                 |
| All Other Residential      | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| Non-Residential            | 2                 | \$2,819          | \$205,000           | 7                            | \$52,152.62                 |
| <b>Total</b>               | <b>54</b>         | <b>\$37,342</b>  | <b>\$15,400,000</b> | <b>40</b>                    | <b>\$432,471.67</b>         |
| <b>Town of Belhaven</b>    |                   |                  |                     |                              |                             |
| Single Family              | 202               | \$112,267        | \$33,609,000        | 1,640                        | \$14,170,721.95             |
| 2-4 Family                 | 6                 | \$3,814          | \$1,500,000         | 5                            | \$11,913.48                 |
| All Other Residential      | 48                | \$21,091         | \$12,281,000        | 19                           | \$168,615.65                |
| Non-Residential            | 51                | \$89,696         | \$11,329,000        | 454                          | \$9,347,088.97              |
| <b>Total</b>               | <b>307</b>        | <b>\$226,868</b> | <b>\$58,719,000</b> | <b>2,118</b>                 | <b>\$23,698,340.05</b>      |
| <b>Town of Chocowinity</b> |                   |                  |                     |                              |                             |
| Single Family              | 2                 | \$591            | \$434,000           | 7                            | \$99,791.53                 |
| 2-4 Family                 | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| All Other Residential      | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| Non-Residential            | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>               | <b>2</b>          | <b>\$591</b>     | <b>\$434,000</b>    | <b>7</b>                     | <b>\$99,791.53</b>          |

**ANNEX A: BEAUFORT COUNTY**

| Structure Type                 | Policies in Force | Total Premium      | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--------------------------------|-------------------|--------------------|----------------------|------------------------------|-----------------------------|
| <b>Town of Pantego</b>         |                   |                    |                      |                              |                             |
| Single Family                  | 4                 | \$2,107            | \$681,000            | 16                           | \$183,129.00                |
| 2-4 Family                     | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| All Other Residential          | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| Non-Residential                | 3                 | \$5,553            | \$1,715,000          | 1                            | \$9,672.44                  |
| <b>Total</b>                   | <b>7</b>          | <b>\$7,660</b>     | <b>\$2,396,000</b>   | <b>17</b>                    | <b>\$192,801.44</b>         |
| <b>Town of Washington Park</b> |                   |                    |                      |                              |                             |
| Single Family                  | 89                | \$66,871           | \$21,397,000         | 378                          | \$5,960,591.49              |
| 2-4 Family                     | 0                 | \$0                | \$0                  | 3                            | \$56,696.02                 |
| All Other Residential          | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| Non-Residential                | 1                 | \$699              | \$71,000             | 1                            | \$23,217.63                 |
| <b>Total</b>                   | <b>90</b>         | <b>\$67,570</b>    | <b>\$21,468,000</b>  | <b>382</b>                   | <b>\$6,040,505.14</b>       |
| <b>City of Washington</b>      |                   |                    |                      |                              |                             |
| Single Family                  | 387               | \$211,425          | \$84,146,000         | 1,155                        | \$10,981,106.80             |
| 2-4 Family                     | 113               | \$30,605           | \$7,223,000          | 85                           | \$1,416,035.11              |
| All Other Residential          | 29                | \$13,633           | \$9,611,000          | 10                           | \$34,344.24                 |
| Non-Residential                | 72                | \$95,475           | \$28,328,000         | 247                          | \$6,370,679.44              |
| <b>Total</b>                   | <b>601</b>        | <b>\$351,138</b>   | <b>\$129,308,000</b> | <b>1,497</b>                 | <b>\$18,802,165.59</b>      |
| <b>Unincorporated Beaufort</b> |                   |                    |                      |                              |                             |
| Single Family                  | 1,418             | \$989,336          | \$357,862,000        | 5,268                        | \$78,857,264.73             |
| 2-4 Family                     | 4                 | \$2,408            | \$908,000            | 22                           | \$296,093.35                |
| All Other Residential          | 9                 | \$1,931            | \$1,444,000          | 12                           | \$150,923.72                |
| Non-Residential                | 19                | \$28,781           | \$5,975,000          | 120                          | \$3,111,828.78              |
| <b>Total</b>                   | <b>1,450</b>      | <b>\$1,022,456</b> | <b>\$366,189,000</b> | <b>5,422</b>                 | <b>\$82,416,110.58</b>      |

Source: FEMA Community Information System, accessed January 2025

**Table A.14 - NFIP Policy and Claims Data by Flood Zone**

| Flood Zone            | Policies in Force | Total Premium   | Insurance in Force  | Number of Closed Paid Losses | Total of Closed Paid Losses |
|-----------------------|-------------------|-----------------|---------------------|------------------------------|-----------------------------|
| <b>Town of Aurora</b> |                   |                 |                     |                              |                             |
| A01-30 & AE Zones     | 12                | \$7,277         | \$1,668,000         | 31                           | \$422,439.29                |
| B, C & X Zone         |                   |                 |                     |                              |                             |
| Standard              | 16                | \$10,219        | \$3,551,000         | 4                            | \$0.00                      |
| Preferred             | 0                 | \$0             | \$0                 | 3                            | \$87,540.22                 |
| <b>Total</b>          | <b>28</b>         | <b>\$17,496</b> | <b>\$5,219,000</b>  | <b>38</b>                    | <b>\$509,979.51</b>         |
| <b>Town of Bath</b>   |                   |                 |                     |                              |                             |
| A01-30 & AE Zones     | 24                | \$16,544        | \$5,899,000         | 34                           | \$373,939.12                |
| B, C & X Zone         |                   |                 |                     |                              |                             |
| Standard              | 30                | \$20,798        | \$9,501,000         | 3                            | \$4,061.39                  |
| Preferred             | 0                 | \$0             | \$0                 | 3                            | \$54,471.16                 |
| <b>Total</b>          | <b>54</b>         | <b>\$37,342</b> | <b>\$15,400,000</b> | <b>40</b>                    | <b>\$432,471.67</b>         |

**ANNEX A: BEAUFORT COUNTY**

| <b>Flood Zone</b>                     | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|---------------------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Belhaven</b>               |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                     | 306                      | \$225,102            | \$58,369,000              | 1,998                               | \$22,977,590.54                    |
| B, C & X Zone                         |                          |                      |                           |                                     |                                    |
| Standard                              | 1                        | \$1,766              | \$350,000                 | 9                                   | \$157,795.72                       |
| Preferred                             | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>                          | <b>307</b>               | <b>\$226,868</b>     | <b>\$58,719,000</b>       | <b>2,007</b>                        | <b>\$23,135,386.26</b>             |
| <b>Town of Chocowinity</b>            |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                     | 0                        | \$0                  | \$0                       | 3                                   | \$72,591.53                        |
| B, C & X Zone                         |                          |                      |                           |                                     |                                    |
| Standard                              | 2                        | \$591                | \$434,000                 | 0                                   | \$0.00                             |
| Preferred                             | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>                          | <b>2</b>                 | <b>\$591</b>         | <b>\$434,000</b>          | <b>3</b>                            | <b>\$72,591.53</b>                 |
| <b>Town of Pantego</b>                |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                     | 4                        | \$2,107              | \$681,000                 | 17                                  | \$192,801.44                       |
| B, C & X Zone                         |                          |                      |                           |                                     |                                    |
| Standard                              | 3                        | \$5,553              | \$1,715,000               | 0                                   | \$0.00                             |
| Preferred                             | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>                          | <b>7</b>                 | <b>\$7,660</b>       | <b>\$2,396,000</b>        | <b>17</b>                           | <b>\$192,801.44</b>                |
| <b>Town of Washington Park</b>        |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                     | 61                       | \$46,175             | \$13,517,000              | 357                                 | \$5,813,653.92                     |
| B, C & X Zone                         |                          |                      |                           |                                     |                                    |
| Standard                              | 29                       | \$21,395             | \$7,951,000               | 16                                  | \$197,599.02                       |
| Preferred                             | 0                        | \$0                  | \$0                       | 2                                   | \$1,541.41                         |
| <b>Total</b>                          | <b>90</b>                | <b>\$67,570</b>      | <b>\$21,468,000</b>       | <b>375</b>                          | <b>\$6,012,794.35</b>              |
| <b>City of Washington</b>             |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                     | 342                      | \$197,282            | \$69,399,000              | 1,276                               | \$16,043,299.08                    |
| A Zones                               | 0                        | \$0                  | \$0                       | 30                                  | \$323,156.95                       |
| B, C & X Zone                         |                          |                      |                           |                                     |                                    |
| Standard                              | 259                      | \$153,856            | \$59,909,000              | 102                                 | \$1,865,058.41                     |
| Preferred                             | 0                        | \$0                  | \$0                       | 41                                  | \$267,060.95                       |
| <b>Total</b>                          | <b>601</b>               | <b>\$351,138</b>     | <b>\$129,308,000</b>      | <b>1,449</b>                        | <b>\$18,498,575.39</b>             |
| <b>Unincorporated Beaufort County</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                     | 1,112                    | \$781,214            | \$265,852,000             | 4,832                               | \$73,967,132.45                    |
| A Zones                               | 3                        | \$2,700              | \$382,000                 | 225                                 | \$3,728,435.59                     |
| B, C & X Zone                         |                          |                      |                           |                                     |                                    |
| Standard                              | 334                      | \$237,885            | \$99,727,000              | 126                                 | \$2,386,558.21                     |
| Preferred                             | 0                        | \$0                  | \$0                       | 63                                  | \$1,187,407.28                     |
| <b>Total</b>                          | <b>1,449</b>             | <b>\$1,021,799</b>   | <b>\$365,961,000</b>      | <b>5,246</b>                        | <b>\$81,269,533.53</b>             |

Source: FEMA Community Information System, accessed January 2025

**Table A.15 - NFIP Policy and Claims Data, Pre-FIRM**

| Flood Zone                     | Policies in Force | Total Premium    | Insurance in Force  | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--------------------------------|-------------------|------------------|---------------------|------------------------------|-----------------------------|
| <b>Town of Aurora</b>          |                   |                  |                     |                              |                             |
| A01-30 & AE Zones              | 7                 | \$4,053          | \$656,000           | 21                           | \$352,066.56                |
| B, C & X Zone                  | 14                | \$8,962          | \$3,061,000         | 5                            | \$70,667.52                 |
| Standard                       | 14                | \$8,962          | \$3,061,000         | 4                            | \$0.00                      |
| Preferred                      | 0                 | \$0              | \$0                 | 1                            | \$70,667.52                 |
| <b>Total</b>                   | <b>21</b>         | <b>\$13,015</b>  | <b>\$3,717,000</b>  | <b>26</b>                    | <b>\$422,734.08</b>         |
| <b>Town of Bath</b>            |                   |                  |                     |                              |                             |
| A01-30 & AE Zones              | 6                 | \$5,056          | \$1,521,000         | 22                           | \$320,036.89                |
| B, C & X Zone                  | 14                | \$9,030          | \$4,002,000         | 5                            | \$58,532.55                 |
| Standard                       | 14                | \$9,030          | \$4,002,000         | 2                            | \$4,061.39                  |
| Preferred                      | 0                 | \$0              | \$0                 | 3                            | \$54,471.16                 |
| <b>Total</b>                   | <b>20</b>         | <b>\$14,086</b>  | <b>\$5,523,000</b>  | <b>27</b>                    | <b>\$378,569.44</b>         |
| <b>Town of Belhaven</b>        |                   |                  |                     |                              |                             |
| A01-30 & AE Zones              | 139               | \$126,293        | \$23,396,000        | 1,660                        | \$20,672,783.91             |
| B, C & X Zone                  | 0                 | \$0              | \$0                 | 9                            | \$157,795.72                |
| Standard                       | 0                 | \$0              | \$0                 | 9                            | \$157,795.72                |
| Preferred                      | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>                   | <b>139</b>        | <b>\$126,293</b> | <b>\$23,396,000</b> | <b>1,669</b>                 | <b>\$20,830,579.63</b>      |
| <b>Town of Chocowinity</b>     |                   |                  |                     |                              |                             |
| A01-30 & AE Zones              | 0                 | \$0              | \$0                 | 1                            | \$29,040.56                 |
| B, C & X Zone                  | 2                 | \$591            | \$434,000           | 0                            | \$0.00                      |
| Standard                       | 2                 | \$591            | \$434,000           | 0                            | \$0.00                      |
| Preferred                      | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>                   | <b>2</b>          | <b>\$591</b>     | <b>\$434,000</b>    | <b>1</b>                     | <b>\$29,040.56</b>          |
| <b>Town of Pantego</b>         |                   |                  |                     |                              |                             |
| A01-30 & AE Zones              | 4                 | \$2,107          | \$681,000           | 16                           | \$184,174.76                |
| B, C & X Zone                  | 3                 | \$5,553          | \$1,715,000         | 0                            | \$0.00                      |
| Standard                       | 3                 | \$5,553          | \$1,715,000         | 0                            | \$0.00                      |
| Preferred                      | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>                   | <b>7</b>          | <b>\$7,660</b>   | <b>\$2,396,000</b>  | <b>16</b>                    | <b>\$184,174.76</b>         |
| <b>Town of Washington Park</b> |                   |                  |                     |                              |                             |
| A01-30 & AE Zones              | 45                | \$38,298         | \$10,073,000        | 311                          | \$5,205,486.98              |
| B, C & X Zone                  | 24                | \$17,048         | \$6,418,000         | 16                           | \$190,330.63                |
| Standard                       | 24                | \$17,048         | \$6,418,000         | 15                           | \$188,789.22                |
| Preferred                      | 0                 | \$0              | \$0                 | 1                            | \$1,541.41                  |
| <b>Total</b>                   | <b>69</b>         | <b>\$55,346</b>  | <b>\$16,491,000</b> | <b>327</b>                   | <b>\$5,395,817.61</b>       |
| <b>City of Washington</b>      |                   |                  |                     |                              |                             |
| A01-30 & AE Zones              | 157               | \$93,098         | \$25,065,000        | 1,003                        | \$14,053,929.19             |
| A Zones                        | 0                 | \$0              | \$0                 | 30                           | \$323,156.95                |
| B, C & X Zone                  | 184               | \$101,099        | \$35,224,000        | 80                           | \$1,049,176.20              |
| Standard                       | 184               | \$101,099        | \$35,224,000        | 65                           | \$993,285.49                |
| Preferred                      | 0                 | \$0              | \$0                 | 16                           | \$80,867.78                 |
| <b>Total</b>                   | <b>341</b>        | <b>\$194,197</b> | <b>\$60,289,000</b> | <b>1,113</b>                 | <b>\$15,426,262.34</b>      |

**ANNEX A: BEAUFORT COUNTY**

| Flood Zone                            | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|---------------------------------------|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Unincorporated Beaufort County</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                     | 407               | \$328,970        | \$90,023,000         | 3,445                        | \$56,861,607.66             |
| A Zones                               | 3                 | \$2,700          | \$382,000            | 216                          | \$3,281,855.10              |
| B, C & X Zone                         | 152               | \$108,679        | \$43,536,000         | 134                          | \$2,423,162.86              |
| Standard                              | 152               | \$108,679        | \$43,536,000         | 103                          | \$2,042,785.66              |
| Preferred                             | 0                 | \$0              | \$0                  | 31                           | \$380,377.20                |
| <b>Total</b>                          | <b>562</b>        | <b>\$440,349</b> | <b>\$133,941,000</b> | <b>3,795</b>                 | <b>\$62,566,625.62</b>      |

Source: FEMA Community Information System, accessed January 2025

**Table A.16 - NFIP Policy and Claims Data, Post-FIRM**

| Flood Zone                 | Policies in Force | Total Premium    | Insurance in Force  | Number of Closed Paid Losses | Total of Closed Paid Losses |
|----------------------------|-------------------|------------------|---------------------|------------------------------|-----------------------------|
| <b>Town of Aurora</b>      |                   |                  |                     |                              |                             |
| A01-30 & AE Zones          | 5                 | \$3,224          | \$1,012,000         | 10                           | \$70,372.73                 |
| B, C & X Zone              | 2                 | \$1,257          | \$490,000           | 2                            | \$16,872.70                 |
| Standard                   | 2                 | \$1,257          | \$490,000           | 0                            | \$0.00                      |
| Preferred                  | 0                 | \$0              | \$0                 | 2                            | \$16,872.70                 |
| <b>Total</b>               | <b>7</b>          | <b>\$4,481</b>   | <b>\$1,502,000</b>  | <b>12</b>                    | <b>\$87,245.43</b>          |
| <b>Town of Bath</b>        |                   |                  |                     |                              |                             |
| A01-30 & AE Zones          | 18                | \$11,488         | \$4,378,000         | 12                           | \$53,902.23                 |
| B, C & X Zone              | 16                | \$11,768         | \$5,499,000         | 1                            | \$0.00                      |
| Standard                   | 16                | \$11,768         | \$5,499,000         | 1                            | \$0.00                      |
| Preferred                  | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>               | <b>34</b>         | <b>\$23,256</b>  | <b>\$9,877,000</b>  | <b>13</b>                    | <b>\$53,902.23</b>          |
| <b>Town of Belhaven</b>    |                   |                  |                     |                              |                             |
| A01-30 & AE Zones          | 167               | \$98,809         | \$34,973,000        | 338                          | \$2,304,806.63              |
| B, C & X Zone              | 1                 | \$1,766          | \$350,000           | 0                            | \$0.00                      |
| Standard                   | 1                 | \$1,766          | \$350,000           | 0                            | \$0.00                      |
| Preferred                  | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>               | <b>168</b>        | <b>\$100,575</b> | <b>\$35,323,000</b> | <b>338</b>                   | <b>\$2,304,806.63</b>       |
| <b>Town of Chocowinity</b> |                   |                  |                     |                              |                             |
| A01-30 & AE Zones          | 0                 | \$0              | \$0                 | 2                            | \$43,550.97                 |
| B, C & X Zone              | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| Standard                   | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| Preferred                  | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>               | <b>0</b>          | <b>\$0</b>       | <b>\$0</b>          | <b>2</b>                     | <b>\$43,550.97</b>          |
| <b>Town of Pantego</b>     |                   |                  |                     |                              |                             |
| A01-30 & AE Zones          | 0                 | \$0              | \$0                 | 1                            | \$8,626.68                  |
| B, C, & X Zone             | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| Standard                   | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| Preferred                  | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>               | <b>0</b>          | <b>\$0</b>       | <b>\$0</b>          | <b>1</b>                     | <b>\$8,626.68</b>           |



| Flood Zone                            | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|---------------------------------------|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Town of Washington Park</b>        |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                     | 16                | \$7,877          | \$3,444,000          | 46                           | \$608,166.94                |
| B, C & X Zone                         | 5                 | \$4,347          | \$1,533,000          | 2                            | \$8,809.80                  |
| Standard                              | 5                 | \$4,347          | \$1,533,000          | 1                            | \$8,809.80                  |
| Preferred                             | 0                 | \$0              | \$0                  | 1                            | \$0.00                      |
| <b>Total</b>                          | <b>21</b>         | <b>\$12,224</b>  | <b>\$4,977,000</b>   | <b>48</b>                    | <b>\$616,976.74</b>         |
| <b>City of Washington</b>             |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                     | 185               | \$104,184        | \$44,334,000         | 273                          | \$1,989,369.89              |
| B, C & X Zone                         | 75                | \$52,757         | \$24,685,000         | 62                           | \$1,057,966.09              |
| Standard                              | 75                | \$52,757         | \$24,685,000         | 37                           | \$871,772.92                |
| Preferred                             | 0                 | \$0              | \$0                  | 25                           | \$186,193.17                |
| <b>Total</b>                          | <b>260</b>        | <b>\$156,941</b> | <b>\$69,019,000</b>  | <b>335</b>                   | <b>\$3,047,335.98</b>       |
| <b>Unincorporated Beaufort County</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                     | 705               | \$452,244        | \$175,829,000        | 1,387                        | \$17,105,524.79             |
| A Zones                               | 0                 | \$0              | \$0                  | 9                            | \$446,580.49                |
| B, C & X Zone                         | 182               | \$129,206        | \$56,191,000         | 55                           | \$1,150,802.63              |
| Standard                              | 182               | \$129,206        | \$56,191,000         | 23                           | \$343,772.55                |
| Preferred                             | 0                 | \$0              | \$0                  | 32                           | \$807,030.08                |
| <b>Total</b>                          | <b>887</b>        | <b>\$581,450</b> | <b>\$232,020,000</b> | <b>1,451</b>                 | <b>\$18,702,907.91</b>      |

Source: FEMA Community Information System, accessed January 2025

### A.2.2 WILDFIRE

Table A.17 summarizes the acreage in Beaufort County that falls within the Wildland Urban Interface (WUI), categorized by housing density. Areas in the WUI are those where development may intermix with flammable vegetation. Approximately 70 percent of Beaufort County is not included in the WUI.

**Table A.17 - Wildland Urban Interface Acreage, Beaufort County**

|  | Housing Density      | Total Acreage  | Percent of Total Acreage |
|--|----------------------|----------------|--------------------------|
|  | Not in WUI           | 432,238        | 70.14%                   |
|  | LT 1hs/40ac          | 67,164         | 10.90%                   |
|  | 1hs/40ac to 1hs/20ac | 38,608         | 6.27%                    |
|  | 1hs/20ac to 1hs/10ac | 31,767         | 5.16%                    |
|  | 1hs/10ac to 1hs/5ac  | 20,913         | 3.39%                    |
|  | 1hs/5ac to 1hs/2ac   | 16,144         | 2.62%                    |
|  | 1hs/2ac to 3hs/1ac   | 9,287          | 1.51%                    |
|  | GT 3hs/1ac           | 103            | 0.02%                    |
|  | <b>Total</b>         | <b>616,224</b> | <b>100%</b>              |

Source: Southern Wildfire Risk Assessment

Figure A.25 depicts the WUI for Beaufort County and all participating jurisdictions. Figure A.26 through Figure A.28 detail the Fire Intensity Scale, which indicates the potential severity of fire based on fuel

loads, topography, and other factors. Figure A.29 depicts Burn Probability based on landscape conditions, percentile weather, historical ignition patterns, and historical prevention and suppression efforts.

Potential fire intensity is highest in the unincorporated areas of Beaufort County, particularly south of the Pamlico River and on the northwest edge of the county. Burn probability is highest in the southeastern corner of the county. In much of unincorporated areas, it is moderate, and in most incorporated areas it is quite low. While the unincorporated area east of Aurora has both high potential fire intensity and a high burn probability, much of this area is located outside of the WUI, so a fire here might not pose as high a risk to human settlement and the built environment.

Table A.18 through Table A.25 provide the count and estimated value of all structures that intersect with areas of unincorporated Beaufort County and participating jurisdictions that are rated moderate to high on the WUI Risk Index.

Table A.26 through Table A.33 provides building counts and values for critical facilities by FEMA lifeline that are located in areas rated moderate to high on the WUI Risk Index.

**Table A.18 – Structures at Risk to Moderate-High WUI Risk Index, Unincorporated Beaufort County**

| <b>Occupancy</b> | <b>Structures at Risk</b> | <b>Structure Value</b>    | <b>Estimated Content Value</b> | <b>Total Value</b>        |
|------------------|---------------------------|---------------------------|--------------------------------|---------------------------|
| Agriculture      | 258                       | \$14,201,078.00           | \$14,201,078.00                | \$28,402,156.00           |
| Commercial       | 356                       | \$54,282,614.00           | \$54,282,614.00                | \$108,565,228.00          |
| Education        | 21                        | \$21,775,836.00           | \$21,775,836.00                | \$43,551,672.00           |
| Government       | 22                        | \$74,259,689.00           | \$74,259,689.00                | \$148,519,378.00          |
| Industrial       | 148                       | \$33,162,879.00           | \$49,744,318.50                | \$82,907,197.50           |
| Religious        | 163                       | \$36,115,959.00           | \$36,115,959.00                | \$72,231,918.00           |
| Residential      | 11,396                    | \$770,687,240.00          | \$385,343,620.00               | \$1,156,030,860.00        |
| <b>Total</b>     | <b>12,364</b>             | <b>\$1,004,485,295.00</b> | <b>\$502,242,647.50</b>        | <b>\$1,506,727,942.50</b> |

Source: Southern Wildfire Risk Assessment

**Table A.19 – Structures at Risk to Moderate-High WUI Risk Index, Town of Aurora**

| <b>Occupancy</b> | <b>Structures at Risk</b> | <b>Structure Value</b> | <b>Estimated Content Value</b> | <b>Total Value</b>     |
|------------------|---------------------------|------------------------|--------------------------------|------------------------|
| Agriculture      | 2                         | \$339,546.00           | \$339,546.00                   | \$679,092.00           |
| Commercial       | 39                        | \$2,489,440.00         | \$2,489,440.00                 | \$4,978,880.00         |
| Education        | 6                         | \$6,874,896.00         | \$6,874,896.00                 | \$13,749,792.00        |
| Government       | 9                         | \$557,326.00           | \$557,326.00                   | \$1,114,652.00         |
| Industrial       | 7                         | \$1,243,076.00         | \$1,864,614.00                 | \$3,107,690.00         |
| Religious        | 11                        | \$1,544,049.00         | \$1,544,049.00                 | \$3,088,098.00         |
| Residential      | 294                       | \$13,176,018.00        | \$6,588,009.00                 | \$19,764,027.00        |
| <b>Total</b>     | <b>368</b>                | <b>\$26,224,351.00</b> | <b>\$13,112,175.50</b>         | <b>\$39,336,526.50</b> |

Source: Southern Wildfire Risk Assessment

**Table A.20 - Structures at Risk to Moderate-High WUI Risk Index, Town of Bath**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 1                  | \$6,500.00             | \$6,500.00              | \$13,000.00            |
| Commercial   | 8                  | \$9,252,150.00         | \$9,252,150.00          | \$18,504,300.00        |
| Education    | 0                  | \$0                    | \$0                     | \$0                    |
| Government   | 8                  | \$483,434.00           | \$483,434.00            | \$966,868.00           |
| Industrial   | 2                  | \$258,479.00           | \$387,718.50            | \$646,197.50           |
| Religious    | 1                  | \$120,292.00           | \$120,292.00            | \$240,584.00           |
| Residential  | 75                 | \$7,296,455.00         | \$3,648,227.50          | \$10,944,682.50        |
| <b>Total</b> | <b>95</b>          | <b>\$17,417,310.00</b> | <b>\$8,708,655.00</b>   | <b>\$26,125,965.00</b> |

Source: Southern Wildfire Risk Assessment

**Table A.21 - Structures at Risk to Moderate-High WUI Risk Index, Town of Belhaven**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 2                  | \$11,540.00             | \$11,540.00             | \$23,080.00             |
| Commercial   | 46                 | \$3,881,665.00          | \$3,881,665.00          | \$7,763,330.00          |
| Education    | 1                  | \$712,639.00            | \$712,639.00            | \$1,425,278.00          |
| Government   | 5                  | \$61,767,231.00         | \$61,767,231.00         | \$123,534,462.00        |
| Industrial   | 5                  | \$900,899.00            | \$1,351,348.50          | \$2,252,247.50          |
| Religious    | 15                 | \$4,373,695.00          | \$4,373,695.00          | \$8,747,390.00          |
| Residential  | 643                | \$28,645,093.00         | \$14,322,546.50         | \$42,967,639.50         |
| <b>Total</b> | <b>717</b>         | <b>\$100,292,762.00</b> | <b>\$50,146,381.00</b>  | <b>\$150,439,143.00</b> |

Source: Southern Wildfire Risk Assessment

**Table A.22 - Structures at Risk to Moderate-High WUI Risk Index, Town of Chocowinity**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                     |
| Commercial   | 17                 | \$24,210,792.00         | \$24,210,792.00         | \$48,421,584.00         |
| Education    | 3                  | \$3,992,789.00          | \$3,992,789.00          | \$7,985,578.00          |
| Government   | 7                  | \$60,684,210.00         | \$60,684,210.00         | \$121,368,420.00        |
| Industrial   | 5                  | \$1,862,547.00          | \$2,793,820.50          | \$4,656,367.50          |
| Religious    | 10                 | \$2,276,438.00          | \$2,276,438.00          | \$4,552,876.00          |
| Residential  | 303                | \$18,944,163.00         | \$9,472,081.50          | \$28,416,244.50         |
| <b>Total</b> | <b>345</b>         | <b>\$111,970,939.00</b> | <b>\$55,985,469.50</b>  | <b>\$167,956,408.50</b> |

Source: Southern Wildfire Risk Assessment

**Table A.23 – Structures at Risk to Moderate-High WUI Risk Index, Town of Pantego**

| Occupancy    | Structures at Risk | Structure Value       | Estimated Content Value | Total Value            |
|--------------|--------------------|-----------------------|-------------------------|------------------------|
| Agriculture  | 0                  | \$0                   | \$0                     | \$0                    |
| Commercial   | 8                  | \$1,908,757.00        | \$1,908,757.00          | \$3,817,514.00         |
| Education    | 1                  | \$47,554.00           | \$47,554.00             | \$95,108.00            |
| Government   | 2                  | \$178,651.00          | \$178,651.00            | \$357,302.00           |
| Industrial   | 3                  | \$90,135.00           | \$135,202.50            | \$225,337.50           |
| Religious    | 3                  | \$275,717.00          | \$275,717.00            | \$551,434.00           |
| Residential  | 88                 | \$4,280,690.00        | \$2,140,345.00          | \$6,421,035.00         |
| <b>Total</b> | <b>105</b>         | <b>\$6,781,504.00</b> | <b>\$3,390,752.00</b>   | <b>\$10,172,256.00</b> |

Source: Southern Wildfire Risk Assessment

**Table A.24 – Structures at Risk to Moderate-High WUI Risk Index, City of Washington**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 3                  | \$120,479.00            | \$120,479.00            | \$240,958.00            |
| Commercial   | 205                | \$65,798,394.00         | \$65,798,394.00         | \$131,596,788.00        |
| Education    | 13                 | \$31,287,853.00         | \$31,287,853.00         | \$62,575,706.00         |
| Government   | 43                 | \$10,087,387.00         | \$10,087,387.00         | \$20,174,774.00         |
| Industrial   | 33                 | \$5,139,502.00          | \$7,709,253.00          | \$12,848,755.00         |
| Religious    | 13                 | \$2,977,444.00          | \$2,977,444.00          | \$5,954,888.00          |
| Residential  | 1,845              | \$186,772,007.00        | \$93,386,003.50         | \$280,158,010.50        |
| <b>Total</b> | <b>2,155</b>       | <b>\$302,183,066.00</b> | <b>\$151,091,533.00</b> | <b>\$453,274,599.00</b> |

Source: Southern Wildfire Risk Assessment

**Table A.25 – Structures at Risk to Moderate-High WUI Risk Index, Town of Washington Park**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 0                  | \$0                    | \$0                     | \$0                    |
| Commercial   | 12                 | \$997,560.00           | \$997,560.00            | \$1,995,120.00         |
| Education    | 0                  | \$0                    | \$0                     | \$0                    |
| Government   | 0                  | \$0                    | \$0                     | \$0                    |
| Industrial   | 1                  | \$41,127.00            | \$61,690.50             | \$102,817.50           |
| Religious    | 0                  | \$0                    | \$0                     | \$0                    |
| Residential  | 207                | \$26,634,886.00        | \$13,317,443.00         | \$39,952,329.00        |
| <b>Total</b> | <b>220</b>         | <b>\$27,673,573.00</b> | <b>\$13,836,786.50</b>  | <b>\$41,510,359.50</b> |

Source: Southern Wildfire Risk Assessment

**Table A.26 - Critical Facilities Exposed to Wildfire, Unincorporated Beaufort County**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 0                       | \$0                 |
| Energy                   | 0                       | \$0                 |
| Food, Hydration, Shelter | 11                      | \$49,540,166        |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 9                       | \$0                 |
| Safety and Security      | 17                      | \$30,875,387        |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 16                      | \$643,870           |
| <b>Total</b>             | <b>53</b>               | <b>\$81,059,423</b> |

Source: Southern Wildfire Risk Assessment

**Table A.27 - Critical Facilities Exposed to Wildfire, Town of Aurora**

| Type                     | Critical Facility Count | Structure Value    |
|--------------------------|-------------------------|--------------------|
| Communications           | 0                       | \$0                |
| Energy                   | 0                       | \$0                |
| Food, Hydration, Shelter | 1                       | \$5,887,040        |
| Hazardous Materials      | 0                       | \$0                |
| Health and Medical       | 1                       | \$0                |
| Safety and Security      | 1                       | \$317,576          |
| Transportation           | 0                       | \$0                |
| Water Systems            | 2                       | \$635,152          |
| <b>Total</b>             | <b>5</b>                | <b>\$6,839,768</b> |

Source: Southern Wildfire Risk Assessment

**Table A.28 - Critical Facilities Exposed to Wildfire, Town of Bath**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 1                       | \$18,494        |
| <b>Total</b>             | <b>1</b>                | <b>\$18,494</b> |

Source: Southern Wildfire Risk Assessment

**Table A.29 – Critical Facilities Exposed to Wildfire, Town of Belhaven**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 1                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | \$0              |
| Safety and Security      | 2                       | \$436,182        |
| Transportation           | 0                       | \$0              |
| Water Systems            | 2                       | \$363,846        |
| <b>Total</b>             | <b>5</b>                | <b>\$800,028</b> |

Source: Southern Wildfire Risk Assessment

**Table A.30 – Critical Facilities Exposed to Wildfire, Town of Chocowinity**

| Type                     | Critical Facility Count | Structure Value    |
|--------------------------|-------------------------|--------------------|
| Communications           | 0                       | \$0                |
| Energy                   | 0                       | \$0                |
| Food, Hydration, Shelter | 1                       | \$4,332,018        |
| Hazardous Materials      | 0                       | \$0                |
| Health and Medical       | 1                       | \$0                |
| Safety and Security      | 1                       | \$315,355          |
| Transportation           | 0                       | \$0                |
| Water Systems            | 2                       | \$254,714          |
| <b>Total</b>             | <b>5</b>                | <b>\$4,902,087</b> |

Source: Southern Wildfire Risk Assessment

**Table A.31 – Critical Facilities Exposed to Wildfire, Town of Pantego**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 0                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | \$0              |
| Safety and Security      | 1                       | \$269,824        |
| Transportation           | 0                       | \$0              |
| Water Systems            | 0                       | \$0              |
| <b>Total</b>             | <b>1</b>                | <b>\$269,824</b> |

Source: Southern Wildfire Risk Assessment

**Table A.32 - Critical Facilities Exposed to Wildfire, City of Washington**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 0                       | \$0                 |
| Energy                   | 0                       | \$0                 |
| Food, Hydration, Shelter | 4                       | \$29,324,562        |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 8                       | \$1,946,506         |
| Safety and Security      | 2                       | \$1,212,438         |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 0                       | \$0                 |
| <b>Total</b>             | <b>14</b>               | <b>\$32,483,506</b> |

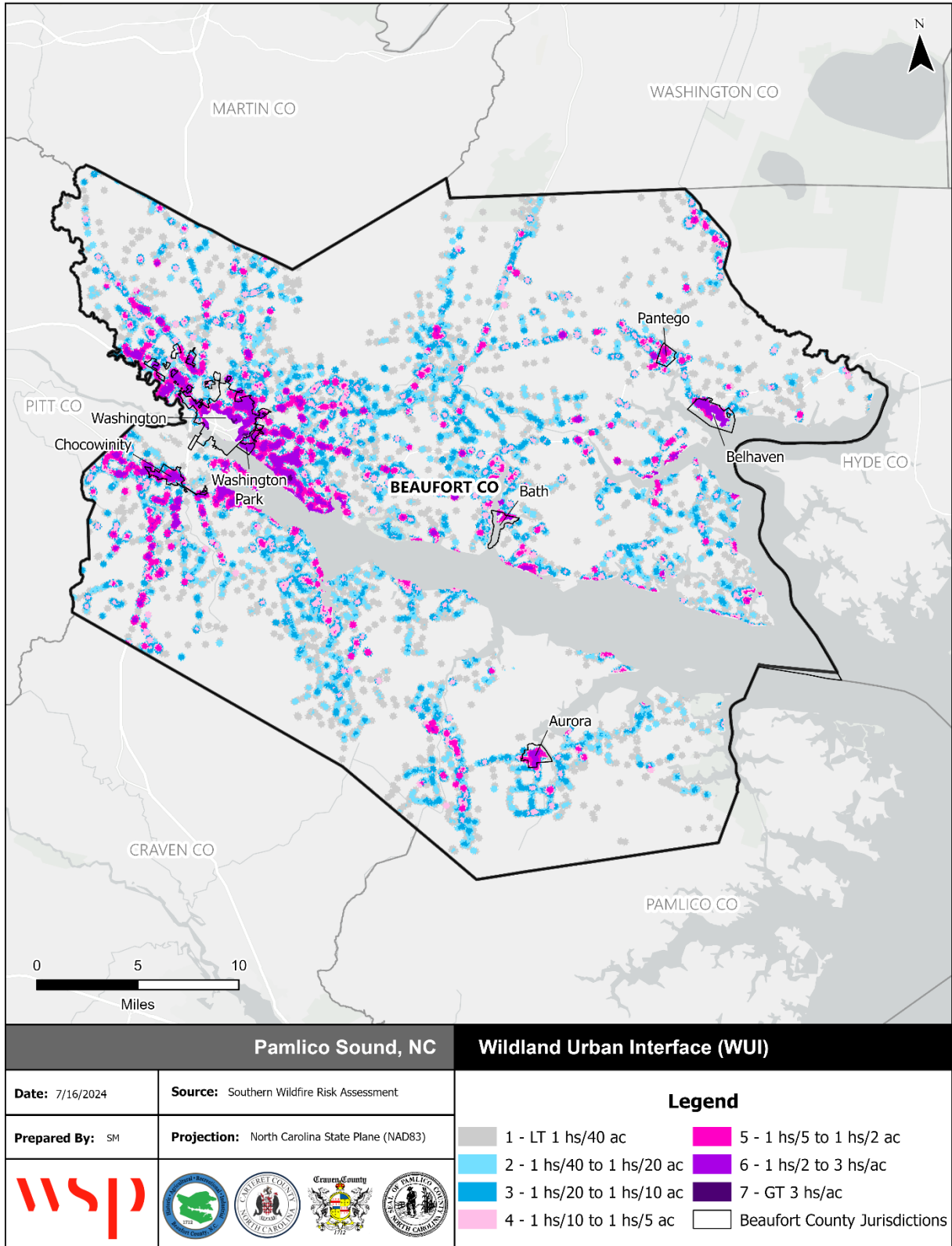
Source: Southern Wildfire Risk Assessment

**Table A.33 - Critical Facilities Exposed to Wildfire, Town of Washington Park**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 0                       | \$0             |
| <b>Total</b>             | <b>0</b>                | <b>\$0</b>      |

Source: Southern Wildfire Risk Assessment

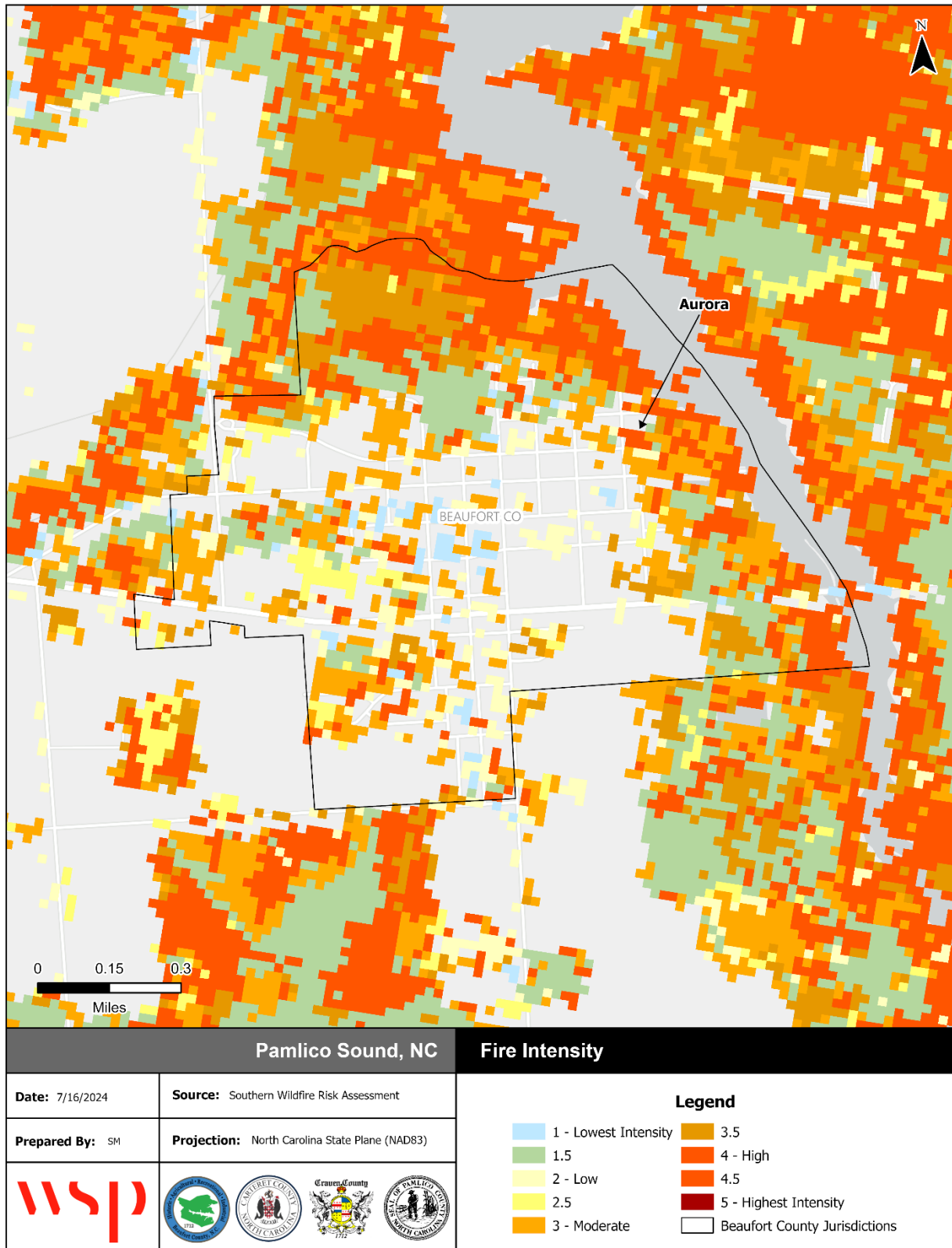
Figure A.25 - Wildland Urban Interface, Beaufort County



Source: Southern Wildfire Risk Assessment

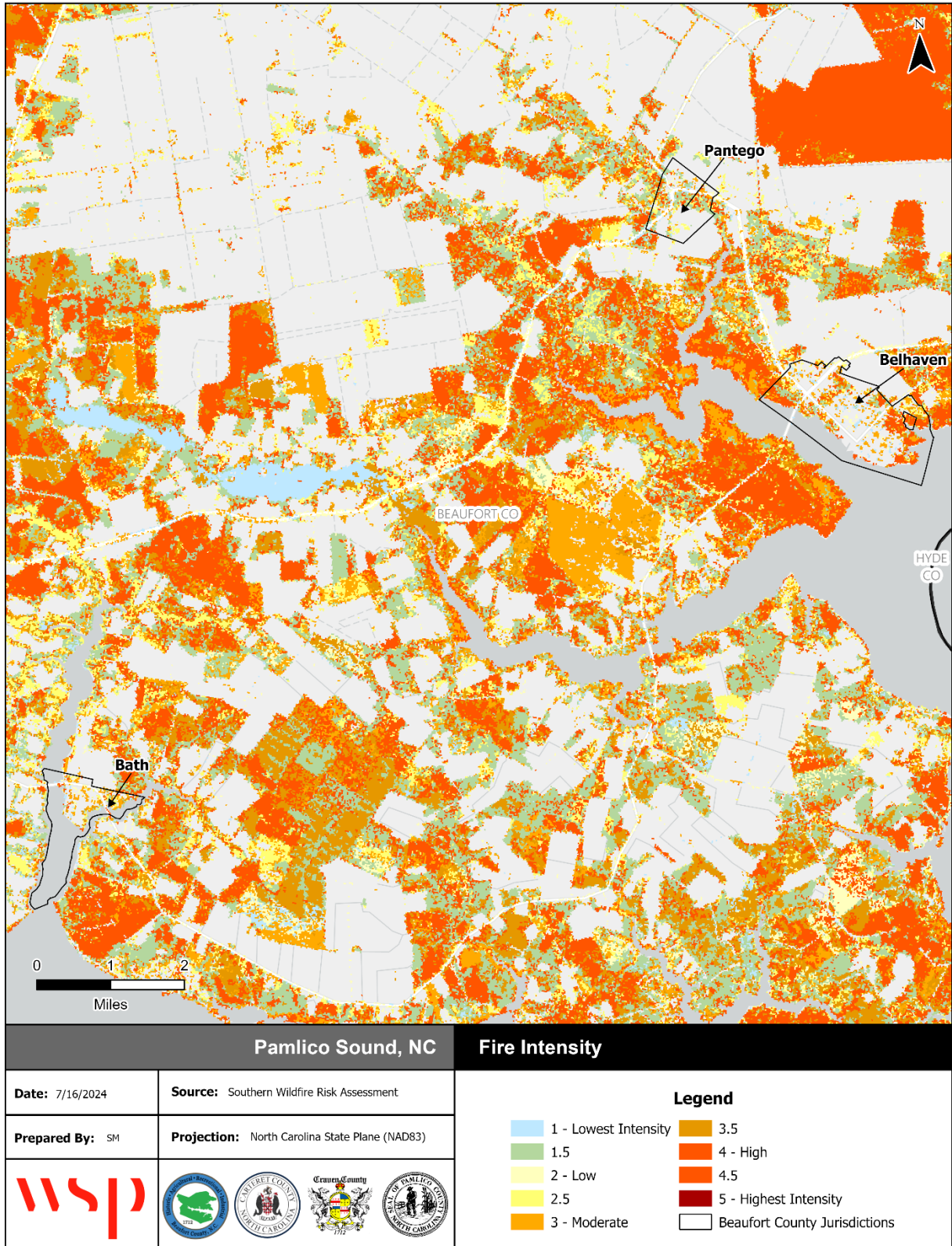


Figure A.26 - Fire Intensity Scale, Beaufort County (Detail 1)



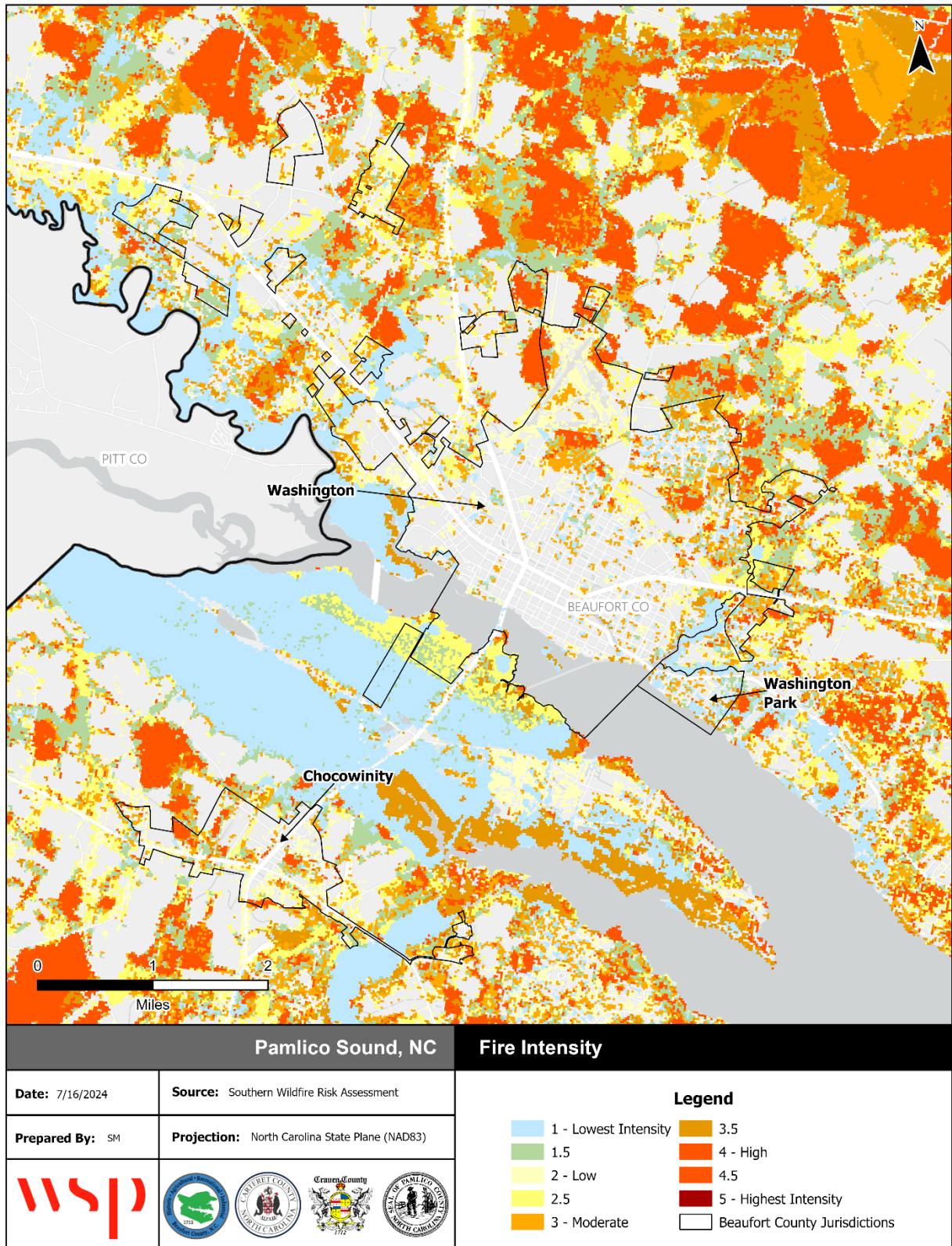
Source: Southern Wildfire Risk Assessment

Figure A.27 - Fire Intensity Scale, Beaufort County (Detail 2)



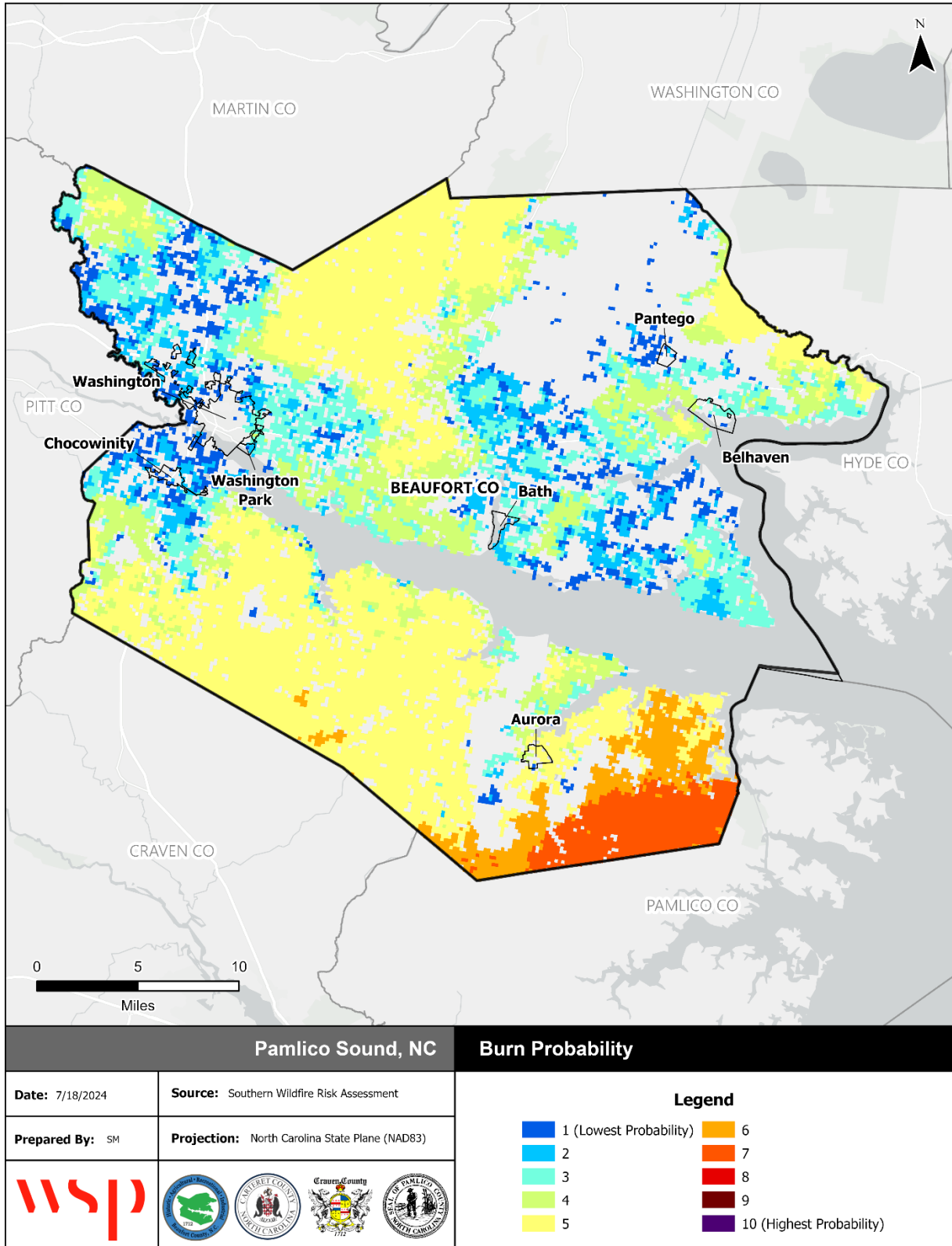
Source: Southern Wildfire Risk Assessment

Figure A.28 - Fire Intensity Scale, Beaufort County (Detail 3)



Source: Southern Wildfire Risk Assessment

Figure A.29 - Burn Probability, Beaufort County



Source: Southern Wildfire Risk Assessment

### A.3 MITIGATION STRATEGY

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule        | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|-------------------|----------|------------------|----------|---|------------------|---------------------------|--------------------------------|---------------|--|
| B1       | Continue to coordinate all development/planning decisions with review of appropriate CAMA LUP's including stated redevelopment policies and actions.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | Med      | 1.3              | PP       | <b>Beaufort County Planning,</b><br>Municipal Administrations   | To Be Determined | GF, NCDEQ                 | Other - as opportunities arise | Carry Forward | All jurisdictions currently utilize their respective CAMA Land Use Plan when making decisions regarding development proposals.   |
| B2       | Maintain reciprocal mutual aid agreements with surrounding communities for fire protection and emergency response.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 4.2              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations, Volunteer Fire Departments   | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years         | Carry Forward | Beaufort County Emergency Services maintains mutual aid agreements with neighboring communities and updates them annually. County also participates in statewide mutual aid agreement, updated annually.   |
| B3       | Annually evaluate adequacy of existing local early warning and emergency response communications equipment and prepare annual capital improvements plans to improve early warning and communication effectiveness before, during, and following disaster events. Complete needs assessment, purchase and installation of additional stream gages connected to a flood warning system and provision of signage and other means of communicating risk information to the public. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 2.1              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations, Beaufort County Soil & Water, Beaufort County Public Works, Beaufort County Inspections, Committee of 100, Mid-East Commission, North Carolina Department of Transportation, Department of Environmental and Natural Resources, Newport / Morehead City, NC National Weather Service | Staff Time       | GF, NCDPS, FEMA, BRIC     | Ongoing - next 5 years         | Carry Forward | Beaufort County Emergency Services reviews its emergency notification system annually in coordination with tabletop exercises associated with the EOP. County started a new mass notification software in the past two years, and additional updates are anticipated to begin in the summer of 2025. County has applied for BRIC funding for flood gages and flood gage poles. |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)                                    | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|--|----------|------------------|----------|---|------------------|---------------------------|-------------------------|---------------|--|
| B4       | Develop standard protocols for training/certification of volunteer staff for shelter management, traffic control, first aid, etc., to improve volunteer response capability during and following disaster events, including coordination with American Red Cross personnel on an annual basis. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 2.1              | ES       | <b>Beaufort County Emergency Services,</b><br>Beaufort County Social Services | To Be Determined | GF, NCDPS, ARC            | 2-3 years               | Carry Forward | Beaufort County Emergency Services continues to work towards improving emergency shelters and updates to the state CRES plan. A list of shelters is maintained on the County website. In 2024, the County has developed a new Short Term Recovery Plan, Long Term Recovery Plan, Disaster Reunification Plan, and has completed a THIRA. The County established a Long Term Recovery group that meets biannually before and after storm season. SPR is underway. County updated to following CPG version 3. Update to follow FEMA NIMS procedures. |
| B5       | Complete an annual evaluation of each designated emergency shelter, including structural inspection, resource inventory, staffing plan, and vulnerability assessment, including coordination with American Red Cross (ARC) personnel.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 2.1              | ES       | <b>Beaufort County Emergency Services,</b><br>Beaufort County Social Services | To Be Determined | GF, NCDPS, ARC            | 2-3 years               | Carry Forward | Beaufort County Emergency Services continues to work towards improving emergency shelters and updates to the state CRES plan. A list of shelters is maintained on the County website. Annually update contracts with ARC.  |
| B6       | Provide citizens and visitors with maps of evacuation routes which will facilitate the evacuation of the county in case of a hazardous event.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | High     | 2.2              | ES, PIO  | <b>Beaufort County Emergency Services,</b><br>Beaufort County Social Services | To Be Determined | GF, NCDPS, ARC            | 2-3 years               | Carry Forward | Evacuation maps are currently available on the County website or through the Emergency Services Department. Action revised as hard copy maps are no longer a priority.   |
| B7       | Continue to monitor and establish programs to maintain continuity of government operations through annual review and update of the Continuity of Operations Plan (COOP).   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards  | Med      | 4.2              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations       | Staff Time       | GF, NCDPS                 | Ongoing - as needed     | Carry Forward | The County COOP is reviewed annually and updated as necessary.   |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|--|-------------------|----------|------------------|----------|---|------------------|---------------------------|-------------------------|---------------|---|
| B8       | Continue to support and participate in the directives of the County Emergency Operations Plan (EOP). The EOP includes evacuation procedures and response to hazards not addressed in this plan such as hazardous materials, petroleum products, hazardous waste, nuclear threat/attack, and civil disorder. The County will review and update the EOP annually to ensure that it coordinates with the most recent NCEM and NCOEMS directives.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | Med      | 3.2              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations                             | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Beaufort County Emergency Services works closely with all participating municipalities to review and update the Emergency Operations Plan (EOP) on an annual basis. The County completed a full rewrite of the EOP in 2024. The basic EOP is posted on the county's <a href="#">website</a> .   |
| B9       | Continue to apply for grant funds, allocate local funding, and work with local electric service providers to procure and maintain back-up generators/transfer switches for all critical public facilities, with an emphasis on emergency services facilities, critical water/sewer facilities, and shelter facilities. Evaluate the equipment on a regular basis to assure it continues to meet the needs of the operations occurring at each facility. Back-up generators are still needed at Southside High School and John Cotten Tayloe Elementary School. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 1.1              | PP       | <b>Beaufort County Emergency Services,</b><br>Independent Facility Operators, Town Public Utilities | To Be Determined | GF, NCDPS, NCDOT, HMGP    | Ongoing - next 5 years  | Carry Forward | Beaufort County Emergency Services will continue to work towards establishing permanent pad mount generators at all critical facilities. This effort will initially focus on primary and backup shelter facilities. Recently won LESCOP FY24 grant for transfer switches to improve shelter capacity at S.W. Snowden Elementary School. |
| B10      | Hold an annual public hazard mitigation meeting, attended by the HMPC and participating jurisdictions, to educate the public and elected officials and receive comments about the location of high risk facilities/development, the jurisdictions' overall vulnerability to natural and man-made hazards, and the jurisdictions' hazards mitigation efforts.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 2.2              | PIO      | <b>Beaufort County Emergency Services,</b><br>Beaufort County Planning, Municipal Administrations   | Staff Time       | GF                        | 1 Year                  | Carry Forward | Beaufort County Emergency Services holds a public officials conference at least annually to educate decision makers on the vulnerability to hazards and mitigation efforts.   |
| B11      | Maintain the Hazard Mitigation Planning Committee (HMPC) and hold annual HMPC meetings to continue relationship-building and communicate about mitigation measures taking place throughout the community.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards       | High     | 3.1              | P        | <b>Pamlico Sound HMPC,</b><br>Beaufort County Administration, Municipal Administrations             | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | The HMPC will be maintained to ensure implementation and update the PSRHMP.   |

| Action # | Description   | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)                               | Estimated Cost   | Potential Funding Sources             | Implementation Schedule            | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|---|--|--|----------|------------------|----------|--|------------------|---------------------------------------|------------------------------------|---------------|---|
| B12      | Maintain continual contact/working relationship with electric service providers in the county to address the following:<br>1) Disaster preparedness techniques (e.g., tree trimming, vegetation planting requirements, pole replacement);<br>2) Identification of critical electrical facilities needing retrofit or upgrade and map with elevation reference marks;<br>3) Identification of problem areas and potential solutions; and<br>4) Communication with county officials during and immediately after a natural hazard event that results in loss of electrical power. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Tornado & Thunderstorm, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 1.1              | P        | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations  | Staff Time       | GF, NCDPS, Electric Service Providers | Other - meet annually              | Carry Forward | Beaufort County Emergency Services continues to meet annually with all electric service providers operating in the county.  |
| B13      | Monitor trees and vegetation on publicly owned property to assure that no property or utility damage will occur as a result of diseased or dying trees or other vegetation.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Flooding, Hurricanes & Coastal Hazards, Severe Winter Weather, Tornado & Thunderstorm  | Med      | 1.1              | ES       | <b>Beaufort County Public Works,</b><br>Municipal Administrations        | Staff Time       | GF                                    | Ongoing - over the next five years | Carry Forward | Beaufort County, as well as municipal, public works departments will maintain trees on public property and in right of ways to minimize the impact of falling limbs and trees in the event of a natural disaster. |
| B14      | Continue to maintain all property acquired with public mitigation funds within the Special Flood Hazard Area (SFHA) as undisturbed open space in perpetuity. Continue to pro-actively establish open space within the floodplain and floodway as grant funds become available to carry out this initiative.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | High     | 1.2              | PP       | <b>Beaufort County Administration,</b><br>Municipal Administrations      | To Be Determined | GF, NCDPS                             | Ongoing - in process               | Carry Forward | All jurisdictions actively maintain these sites and promote reuse that is permitted under FEMA guidelines.  |
| B15      | Integrate new greenway and public park improvements into comprehensive planning and capital improvement efforts for land not suitable for development (including coordination with all local certified CAMA Land Use Plans).  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | High     | 1.2              | P, SP    | <b>Beaufort County Parks and Recreation,</b><br>Beaufort County Planning | To Be Determined | GF, NCDEQ                             | Other - as opportunities arise     | Carry Forward | Beaufort County updated its certified CAMA Land Use plan this year and will use the updated LUP to promote these strategies.  |



| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost | Potential Funding Sources   | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|---|----------|------------------|----------|---|----------------|-----------------------------|-------------------------|---------------|--|
| B16      | Annually review local floodplain ordinances to provide improved flood protection standards and require freeboard for retrofitting and new construction as required by NC State Building Code. The County will consider establishing a freeboard requirement.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure | Med      | 3.2              | PP       | <b>Beaufort County Administration,</b><br>Municipal NFIP participants                                       | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | All jurisdictions will review and amend their respective Flood Damage Prevention Ordinances. All jurisdictions will consider establishing a freeboard requirement, except for Washington and Washington Park who already have a 2-foot freeboard established.  |
| B17      | Maintain current listings of Severe Repetitive Loss properties and conduct annual outreach activities to encourage homeowners to participate in FEMA-sponsored residential acquisition and elevation programs. Continue to apply for HMGP/HMA funding for residential acquisition and elevation of vulnerable structures.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure | Med      | 2.2              | PP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS, HMGP, BRIC, UHMA | Ongoing - as needed     | Carry Forward | Beaufort County in coordination with all participating municipal jurisdictions will utilize annual as well as post-disaster funding to treat repetitive loss properties through elevation or acquisition/ demolition. The County holds meetings 2-3 times per year as grant funding becomes available to educate property owners about mitigation opportunities. |
| B18      | Encourage County Commissioners and elected officials of non-CRS communities to participate in the Community Rating System.   | Beaufort County, Aurora, Bath, Chocowinity, Pantego  | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure | High     | 1.3              | PP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF                          | Ongoing - next 5 years  | Carry Forward | Non-CRS communities will consider joining the program through implementation of this plan. Belhaven, Washington and Washington Park will continue to implement their program annually.   |
| B19      | Continue to work with local real estate agencies and manufactured home vendors to ensure that agents are informing clients when property for sale is located within an SFHA. The county will provide these agencies with brochures documenting the concerns relating to development located within the flood prone areas and ways that homeowners may make their home more disaster resistant to strong winds, lightning, and heavy rains. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure | High     | 2.2              | PP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | This activity is carried out by the County for the benefit of all Citizens including all participating municipal jurisdictions.  |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost | Potential Funding Sources   | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|--|--|----------|------------------|----------|---|----------------|-----------------------------|-------------------------|---------------|---|
| B20      | Make information regarding hazards and development regulations within floodplains available through the following:<br><br>1) Ensure that local libraries maintain information relating to flooding and flood protection,<br><br>2) Provide a link on the municipal website to FEMA resources addressing flooding and flood protection, evacuation procedures, disaster preparedness, and post-disaster recovery, and<br><br>3) Provide website links to relevant hazard mitigation measures. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | Med      | 2.2              | PP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | This activity is carried out by the County for the benefit of all Citizens including all participating municipal jurisdictions.   |
| B21      | Promote national "awareness" weeks (i.e., hurricane preparedness, severe weather preparedness, etc.) through local media. ("Awareness" weeks are listed on the National Weather Service website at <a href="#">Preparedness and Weather Safety - NWS Raleigh, NC</a> )   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | All Hazards  | High     | 2.2              | PIO      | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations                                     | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | Beaufort County will continue to implement this strategy for the benefit of all Citizens, including all participating jurisdictions. The County uses social media and cable channel for outreach.   |
| B22      | Educate the general public to the importance of weather alert radios and systems that can operate on alternative power and can provide up-to-the-moment information regarding locations of severe storms and possible tornadoes.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure, Severe Winter Weather, Earthquake, Tornado & Thunderstorm | Med      | 2.1              | ES       | <b>Beaufort County Emergency Services,</b><br>Municipal Administrations                                     | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | Beaufort County developed a new outreach program for this activity in 2024.   |
| B23      | Maintain a Hazardous Material Action Plan that addresses the proper containment of spills, etc. This effort will be coordinated with the county LEPC.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding   | Med      | 4.2              | ES       | <b>Beaufort County Local Emergency Planning Committee,</b><br>Municipal Administrations                     | Staff Time     | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | Beaufort County will continue to facilitate the meeting of the County LEPC. The LEPC meets quarterly and is growing.  |
| B24      | Monitor natural and man-made drainage structures to ensure they are clear and functioning properly; prioritize needed drainage projects and review funding alternatives annually.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | High     | 1.3              | SP       | <b>Beaufort County Administration,</b><br>Beaufort County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS, NCDOT, USDA, HMA | Ongoing - next 5 years  | Carry Forward | The County will continue to monitor drainage conditions to identify flooding hot spots and system deficiencies. Once identified engineered solutions will be established. Ag Extension Office has been working with USDA to receive and implement grants. |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources                  | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|--|----------|------------------|----------|---|------------------|--|-------------------------|---------------|--|
| B25      | Continue to coordinate annually with the NC Forest Service to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards. | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Wildfire   | High     | 4.1              | PP       | <b>Beaufort County Emergency Services</b> , Beaufort County Board of Commissioners, Municipal Administrations | Staff Time       | GF, NC Forest Service, NCDPS               | Other - Annually        | Carry Forward | Beaufort County coordinates with NC Forest Service daily on wildfire risk identification and communication.  |
| B26      | Maintain Debris Removal and Monitoring Services Contracts for post-disaster response. These services should focus on preparing documentation necessary to ensure full reimbursement of cost associated with community cleanup and immediate infrastructure restoration.  | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 1.1              | ES       | <b>Beaufort County Emergency Services</b> , Beaufort County Board of Commissioners, Municipal Administrations | To Be Determined | GF, NCDPS, FEMA                            | Ongoing - As needed     | Carry Forward | Post-disaster debris removal contracts are in place with the State. Beaufort County is working on putting pre-disaster contracts in place for debris removal, potable water, emergency power, critical needs, response and recovery, and consultant resources. |
| B27      | Work to implement all strategies outlined within the Hurricane Matthew Resilient Redevelopment Plan.   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Hurricanes & Coastal Hazards, Flooding, Dam & Levee Failure  | Med      | 3.1              | P        | <b>Beaufort County Board of Commissioners</b> , Municipal Governing Boards                                    | To Be Determined | GF, NCDPS, FEMA, NCDCM, USDA, NCDEQ, NCDOT | Ongoing - next 5 years  | Carry Forward | Beaufort County has HMGP projects from Hurricane Matthew in progress.  |
| B28      | Installation of automatic bar screen device and other improvements to the Jack's Creek Pump Station to improve function of equipment and safety to operating personnel.  | Washington   | Hurricanes & Coastal Hazards, Flooding   | High     | 3.1              | SP       | <b>Municipal Administration</b>   | To Be Determined | FEMA HHDP, BRID, Local                     | 2026                    | New           | Applied for funding in 2023. Will continue to pursue funding for implementation.   |
| B29      | Create or Update Community Wildfire Protection Plans in each fire district   | Beaufort County, Aurora, Bath, Belhaven, Chocowinity, Pantego, Washington, Washington Park | Wildfire   | Med      | 4.1              | P, PIO   | <b>Beaufort County Staff</b> , NC Forest Service  | To Be Determined | Grant Funds                                | 3-5 years               | New           |  |
| B30      | Solar Resiliency Backup for Critical Facilities and Infrastructure   | Beaufort County  | All Hazards  | High     | 1.1              | PP       | <b>Beaufort County Emergency Services</b>   | \$545,000        | Grant Funds (BRIC)                         | 3 years                 | New           | LOI submitted to the State and waiting on next stage.  |

| Action # | Description  | Applicable Jurisdictions | Hazards Addressed | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)    | Estimated Cost | Potential Funding Sources | Implementation Schedule | 2025 Status | 2025 Status Comments/ Explanation                     |
|----------|--|--------------------------|-------------------|----------|------------------|----------|---|----------------|---------------------------|-------------------------|-------------|---|
| B31      | Cyber Continuity of Operations through implementation of resilient communication strategies and system improvements. | Beaufort County          | Cyber Threat      | High     | 4.2              | P, ES    | <b>Beaufort County<br/>Emergency Services</b> | \$50,000       | Grant Funds               | 2 years                 | New         | Submitted for grant funding. Waiting on award status. |

# ANNEX B CARTERET COUNTY

## B.1 ASSET INVENTORY

Carteret County and the HMPC provided a local inventory of critical facilities and community lifelines, which are a priority for mitigation planning and emergency management. Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. Table B.1 through Table B.12 provides a count of critical facilities by FEMA lifeline category by jurisdiction in Carteret County. Figure B.1 through Figure B.12 shows the locations of all critical facilities in Carteret County and participating jurisdictions. Note that no critical facilities were identified within the Town of Bogue. There are additional Marine Corps and U.S. Navy facilities within the region that are outside the scope of this plan and inventory.

Table B.13 provides a detailed inventory of the critical facilities in Carteret County, indicating each facility's FEMA lifeline category, flood zone, 1% annual chance flood depth, and vulnerability to storm surge, sea level rise, and wildfire. More information on hazard vulnerability is provided in the hazard profiles.

**Table B.1 – Critical Facilities by Type, Unincorporated Carteret County**

| Facility Type            | Count of Facility Type | Structure Value      |
|--------------------------|------------------------|----------------------|
| Communications           | 8                      | \$303,862            |
| Energy                   | 1                      | \$2,499,952          |
| Food, Hydration, Shelter | 12                     | \$64,413,493         |
| Hazardous Materials      | 0                      | \$0                  |
| Health and Medical       | 12                     | \$2,902,270          |
| Safety and Security      | 31                     | \$11,799,860         |
| Transportation           | 19                     | \$40,646,009         |
| Water Systems            | 101                    | \$27,485,474         |
| <b>Total</b>             | <b>184</b>             | <b>\$150,050,920</b> |

**Table B.2 – Critical Facilities by Type, Town of Atlantic Beach**

| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 1                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 0                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 3                      | \$0             |
| Transportation           | 0                      | \$0             |
| Water Systems            | 6                      | \$0             |
| <b>Total</b>             | <b>10</b>              | <b>\$0</b>      |

**Table B.3 – Critical Facilities by Type, Town of Beaufort**

| Facility Type            | Count of Facility Type | Structure Value      |
|--------------------------|------------------------|----------------------|
| Communications           | 6                      | \$83,886,447         |
| Energy                   | 1                      | \$309,205            |
| Food, Hydration, Shelter | 19                     | \$25,390,627         |
| Hazardous Materials      | 0                      | \$0                  |
| Health and Medical       | 0                      | \$0                  |
| Safety and Security      | 18                     | \$12,701,240         |
| Transportation           | 0                      | \$0                  |
| Water Systems            | 19                     | \$2,510,957          |
| <b>Total</b>             | <b>63</b>              | <b>\$124,798,476</b> |

**Table B.4 – Critical Facilities by Type, Town of Bogue**

| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 0                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 0                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 0                      | \$0             |
| Transportation           | 0                      | \$0             |
| Water Systems            | 0                      | \$0             |
| <b>Total</b>             | <b>0</b>               | <b>\$0</b>      |

**Table B.5 – Critical Facilities by Type, Town of Cape Carteret**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 1                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 1                      | \$0              |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 0                      | \$0              |
| Safety and Security      | 1                      | \$586,555        |
| Transportation           | 0                      | \$0              |
| Water Systems            | 0                      | \$0              |
| <b>Total</b>             | <b>3</b>               | <b>\$586,555</b> |

The Town of Cape Carteret noted that in addition to the identified facilities there are numerous private package wastewater treatment plants in the region.

**Table B.6 - Critical Facilities by Type, Town of Cedar Point**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 0                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 1                      | \$0              |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 0                      | \$0              |
| Safety and Security      | 2                      | \$758,148        |
| Transportation           | 0                      | \$0              |
| Water Systems            | 0                      | \$0              |
| <b>Total</b>             | <b>3</b>               | <b>\$758,148</b> |

**Table B.7 - Critical Facilities by Type, Town of Emerald Isle**

| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 0                      | \$0                |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 0                      | \$0                |
| Safety and Security      | 7                      | \$4,623,293        |
| Transportation           | 0                      | \$0                |
| Water Systems            | 17                     | \$3,343,341        |
| <b>Total</b>             | <b>24</b>              | <b>\$7,966,634</b> |

**Table B.8 - Critical Facilities by Type, Town of Indian Beach**

| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 0                      | \$0                |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 0                      | \$0                |
| Safety and Security      | 3                      | \$1,351,770        |
| Transportation           | 0                      | \$0                |
| Water Systems            | 3                      | \$738,672          |
| <b>Total</b>             | <b>6</b>               | <b>\$2,090,442</b> |

**Table B.9 - Critical Facilities by Type, Town of Morehead City**

| Facility Type            | Count of Facility Type | Structure Value     |
|--------------------------|------------------------|---------------------|
| Communications           | 4                      | \$1,579,0781        |
| Energy                   | 0                      | \$0                 |
| Food, Hydration, Shelter | 7                      | \$24,832,467        |
| Hazardous Materials      | 0                      | \$0                 |
| Health and Medical       | 22                     | \$6,596,578         |
| Safety and Security      | 14                     | \$31,850,009        |
| Transportation           | 0                      | \$0                 |
| Water Systems            | 9                      | \$841,893           |
| <b>Total</b>             | <b>56</b>              | <b>\$79,911,728</b> |

**Table B.10 - Critical Facilities by Type, Town of Newport**

| Facility Type            | Count of Facility Type | Structure Value     |
|--------------------------|------------------------|---------------------|
| Communications           | 0                      | \$0                 |
| Energy                   | 0                      | \$0                 |
| Food, Hydration, Shelter | 3                      | \$11,509,807        |
| Hazardous Materials      | 0                      | \$0                 |
| Health and Medical       | 4                      | \$0                 |
| Safety and Security      | 3                      | \$470,228           |
| Transportation           | 0                      | \$0                 |
| Water Systems            | 5                      | \$33,560            |
| <b>Total</b>             | <b>15</b>              | <b>\$12,013,595</b> |

**Table B.11 - Critical Facilities by Type, Town of Peletier**

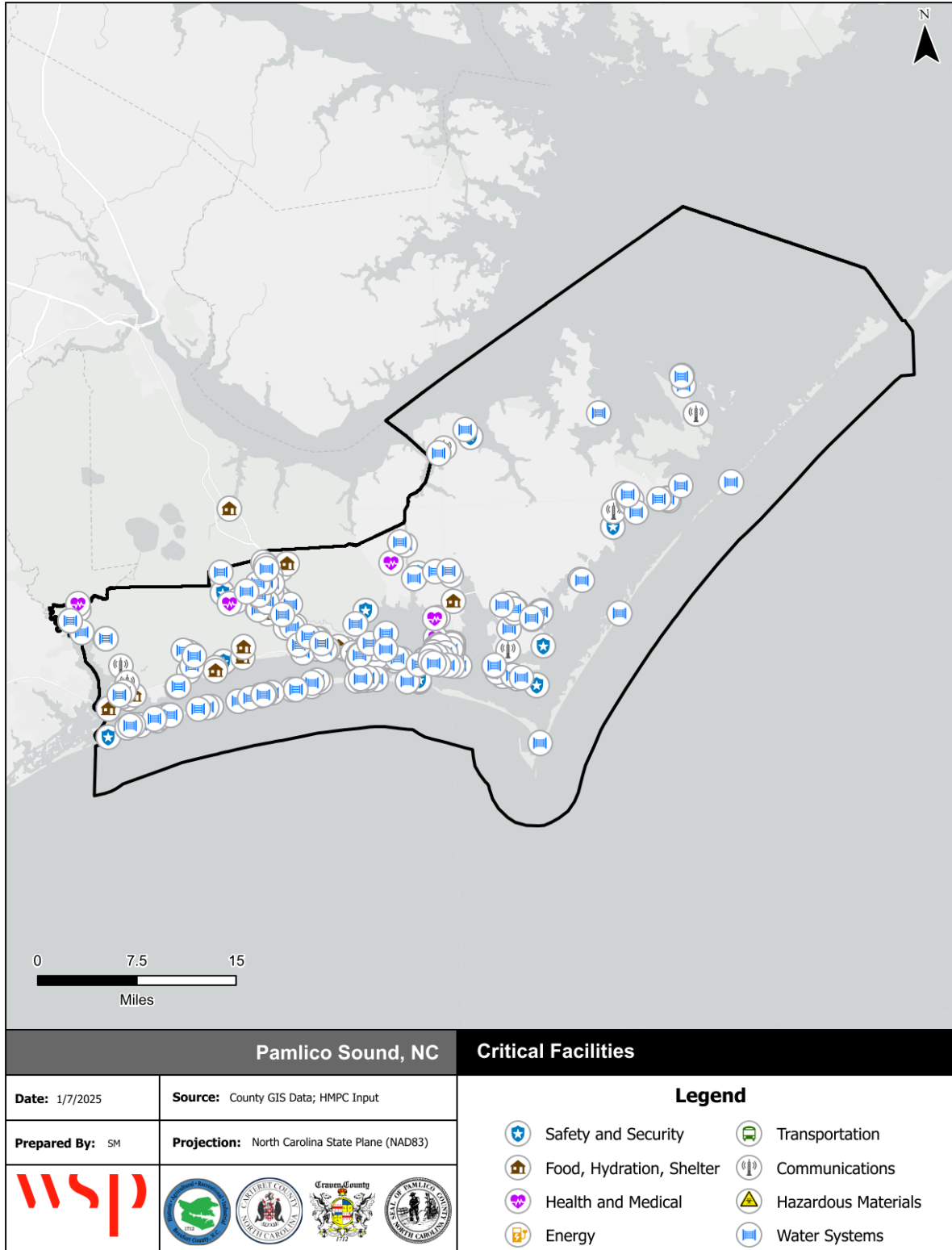
| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 1                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 0                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 0                      | \$0             |
| Transportation           | 0                      | \$0             |
| Water Systems            | 0                      | \$0             |
| <b>Total</b>             | <b>1</b>               | <b>\$0</b>      |



**Table B.12 - Critical Facilities by Type, Town of Pine Knoll Shores**

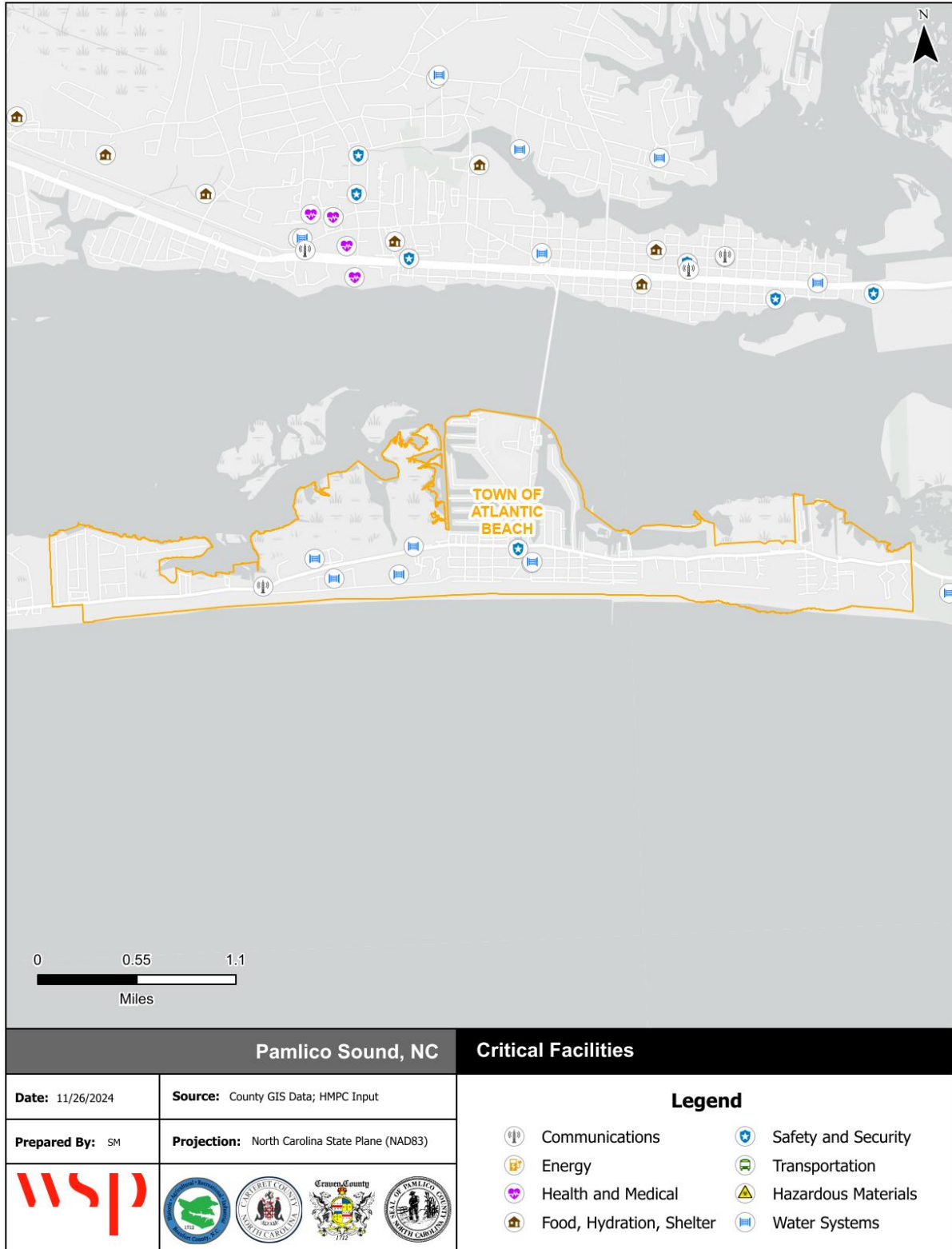
| Facility Type            | Count of Facility Type | Structure Value     |
|--------------------------|------------------------|---------------------|
| Communications           | 0                      | \$0                 |
| Energy                   | 0                      | \$0                 |
| Food, Hydration, Shelter | 0                      | \$0                 |
| Hazardous Materials      | 0                      | \$0                 |
| Health and Medical       | 0                      | \$0                 |
| Safety and Security      | 3                      | \$3,427,179         |
| Transportation           | 0                      | \$0                 |
| Water Systems            | 6                      | \$7,207,230         |
| <b>Total</b>             | <b>9</b>               | <b>\$10,634,409</b> |

Figure B.1 – Critical Facilities, Carteret County



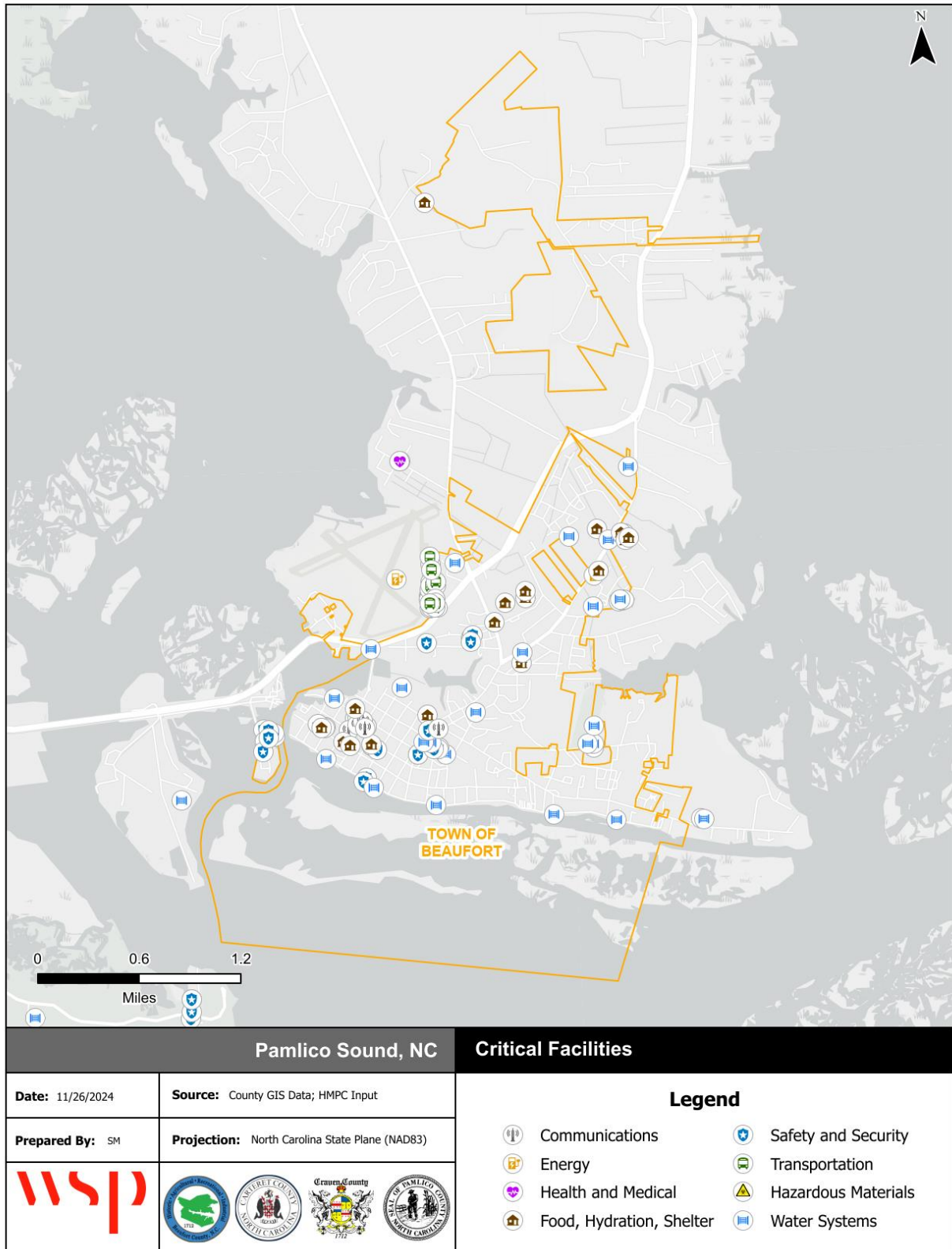
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.2 - Critical Facilities, Atlantic Beach



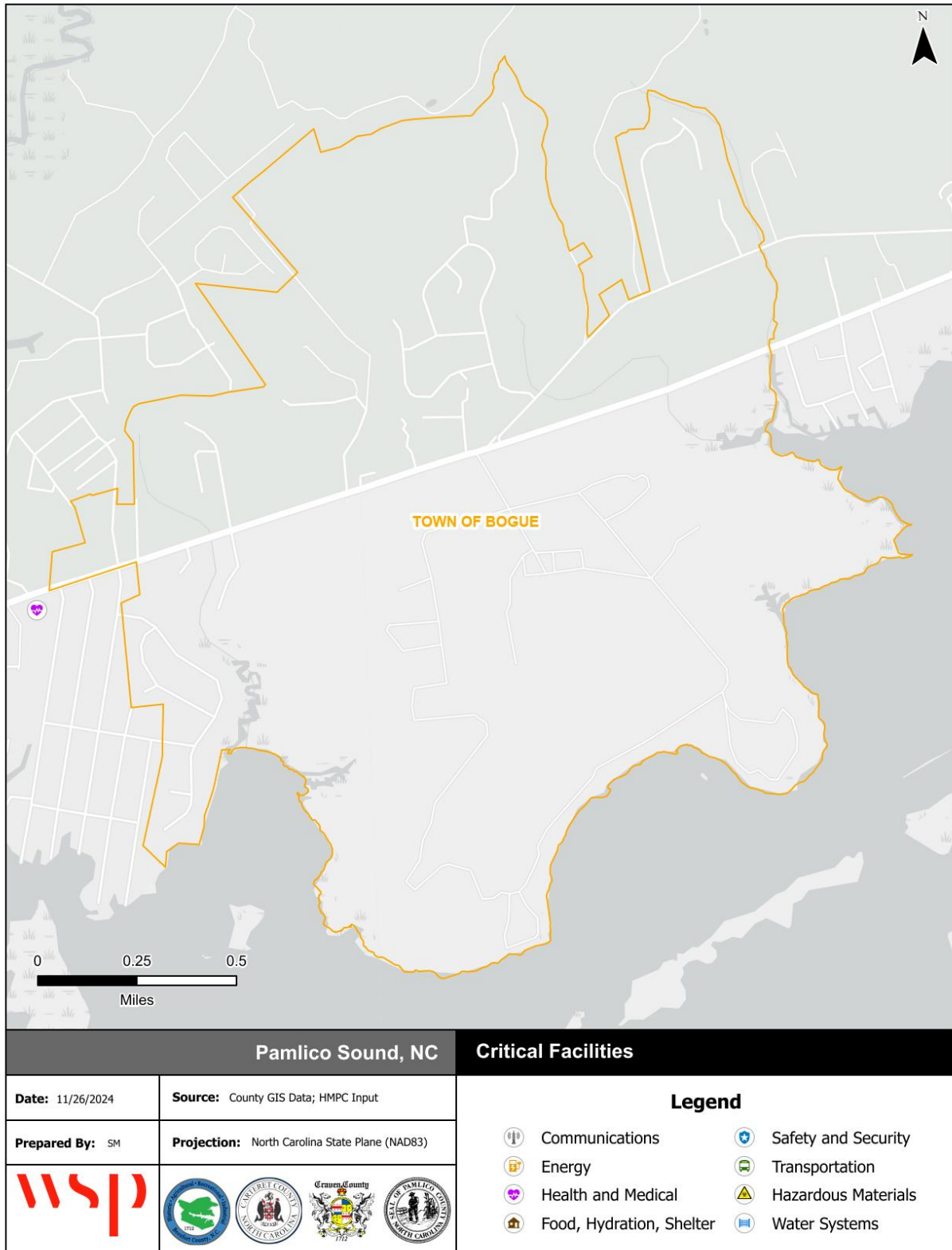
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.3 - Critical Facilities, Town of Beaufort



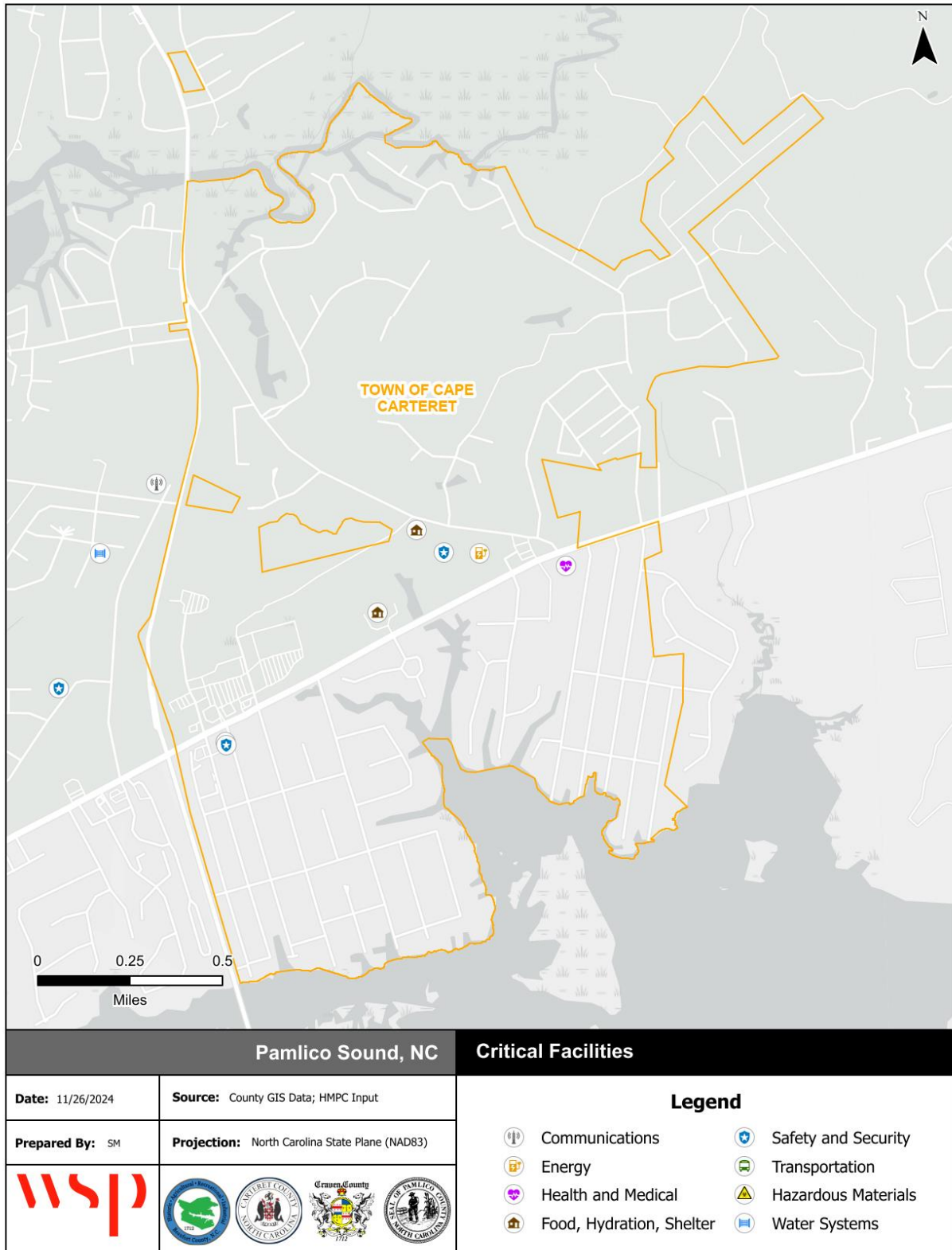
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.4 - Critical Facilities, Town of Bogue



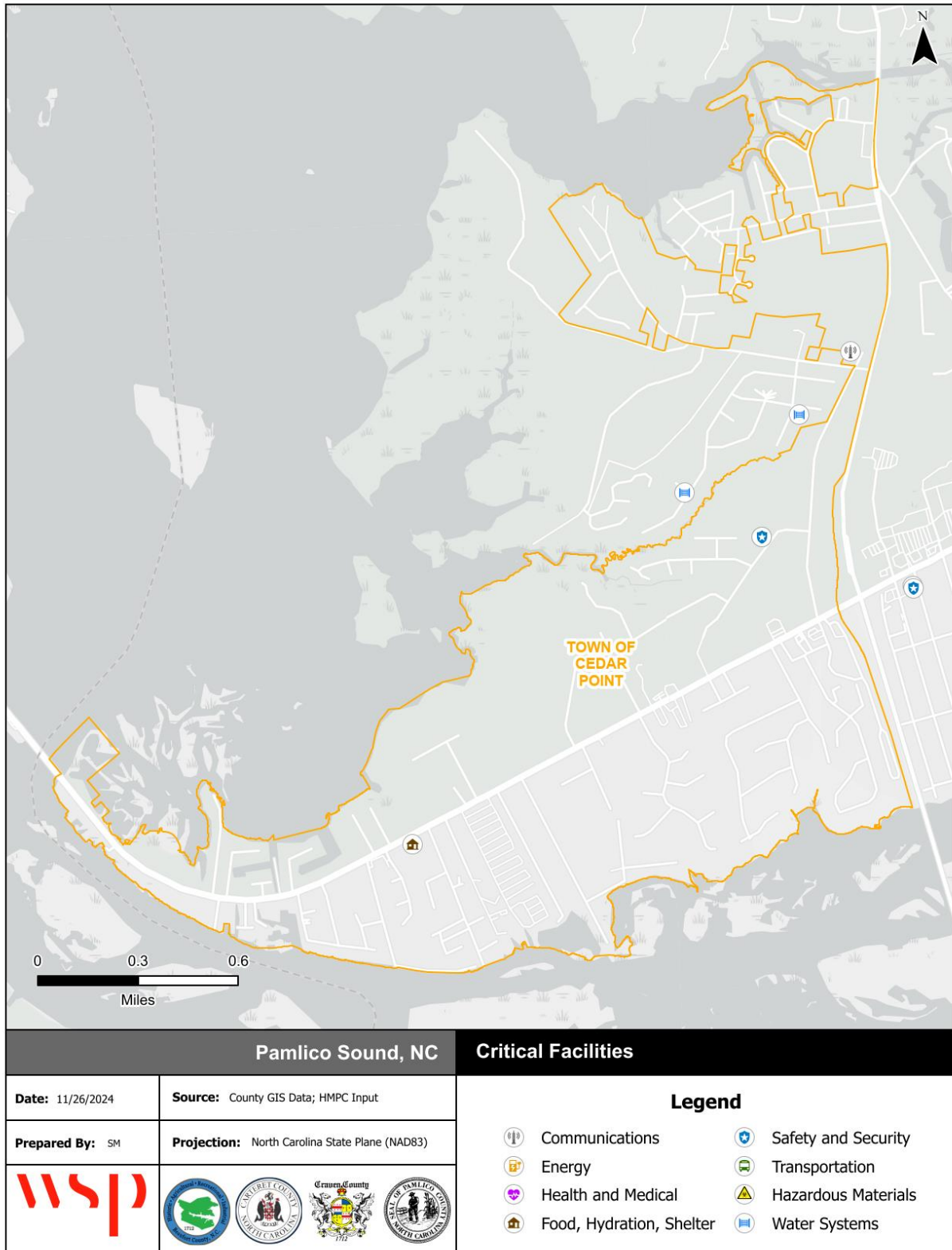
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.5 - Critical Facilities, Town of Cape Carteret



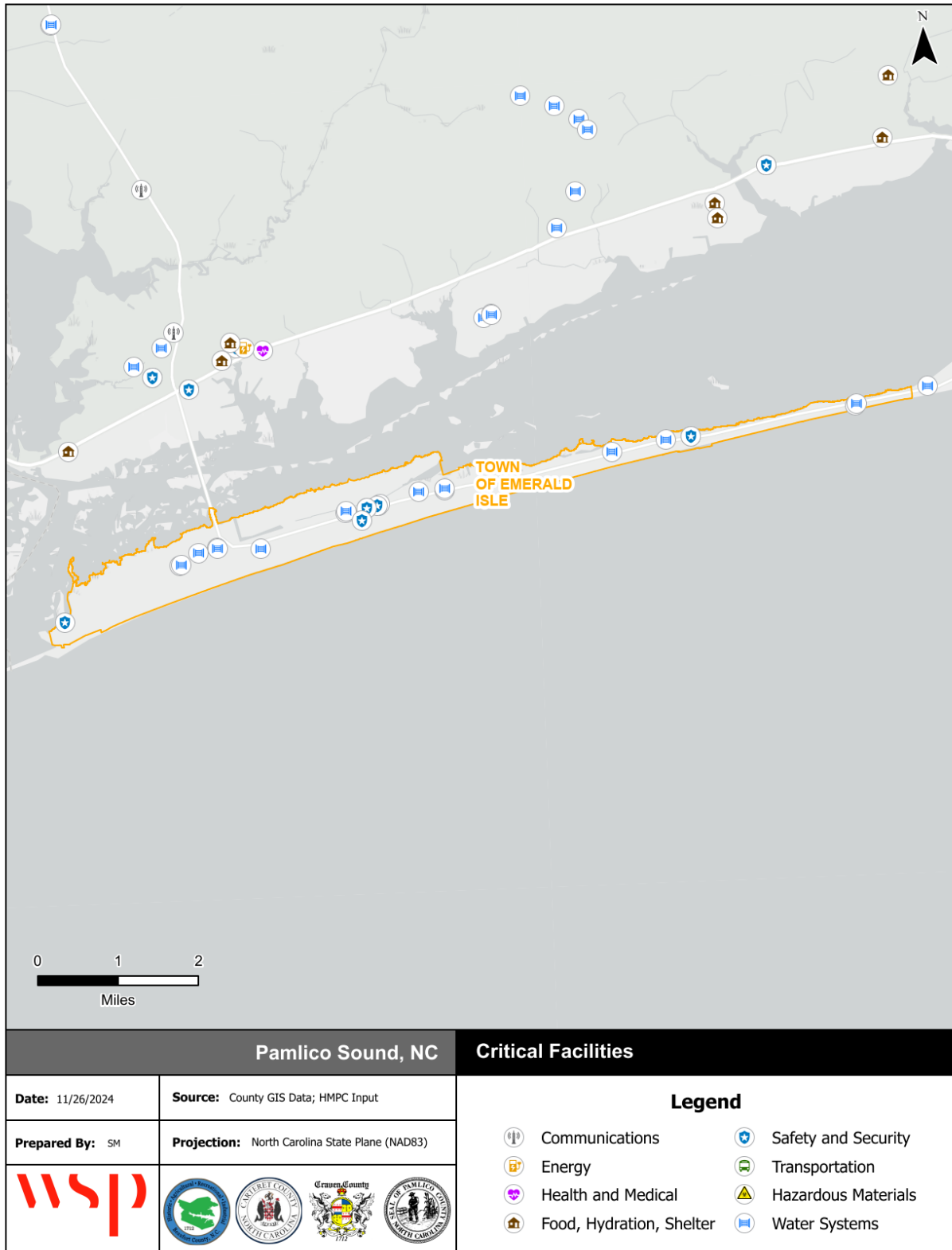
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.6 - Critical Facilities, Town of Cedar Point



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.7 - Critical Facilities, Town of Emerald Isle



Source: NCEM IRISK Database, HMPC input, GIS Analysis

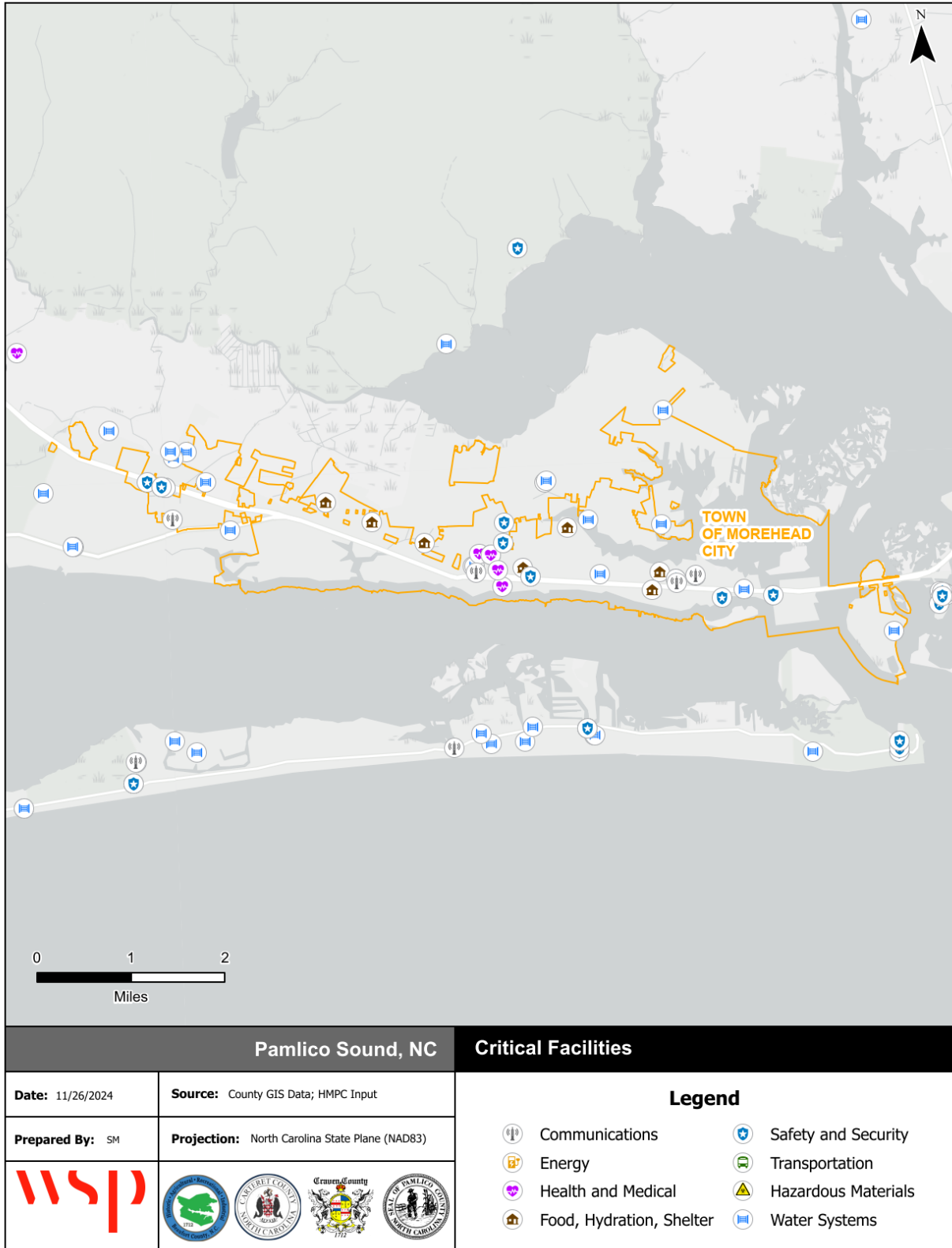


Figure B.8 – Critical Facilities, Town of Indian Beach



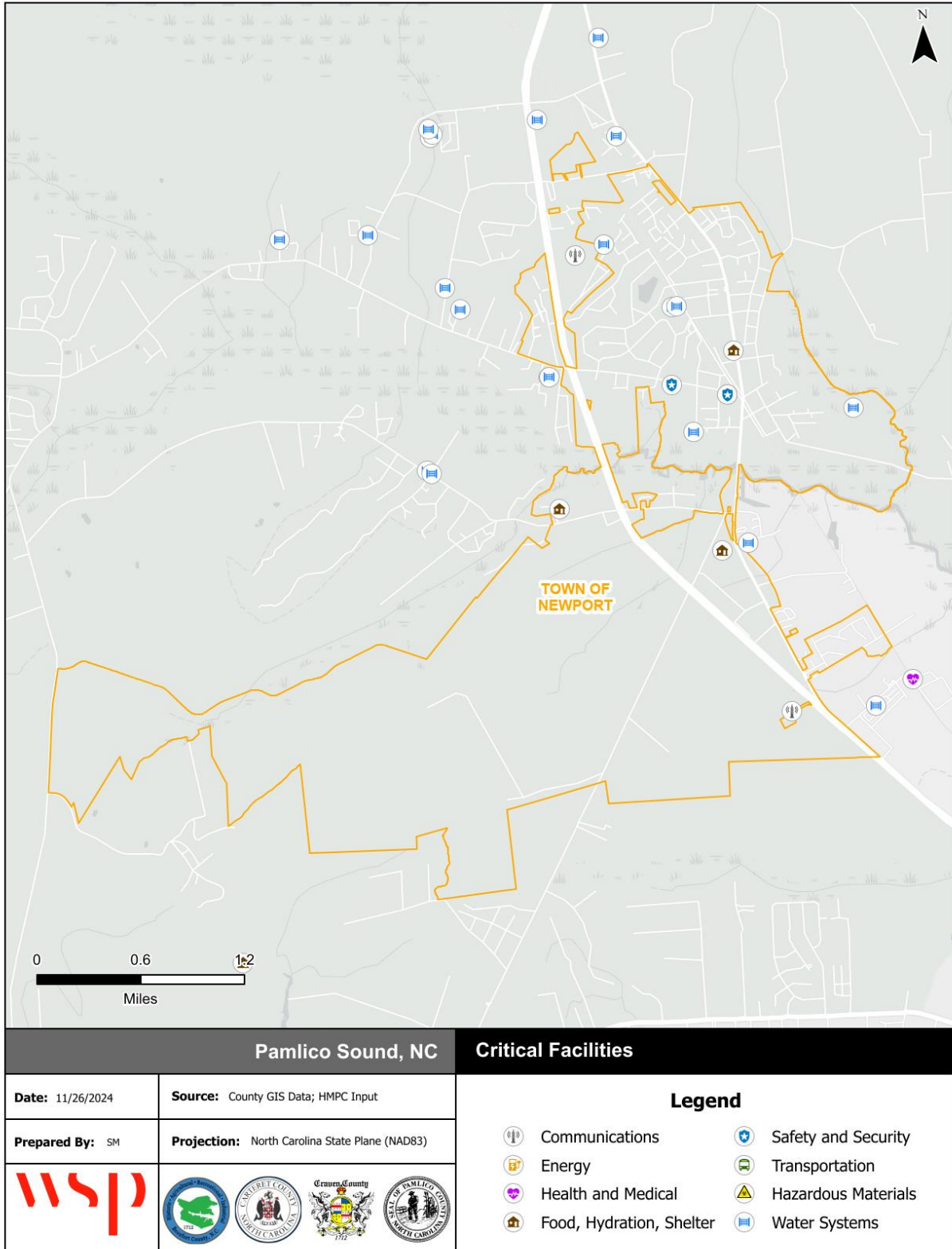
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.9 – Critical Facilities, Town of Morehead City



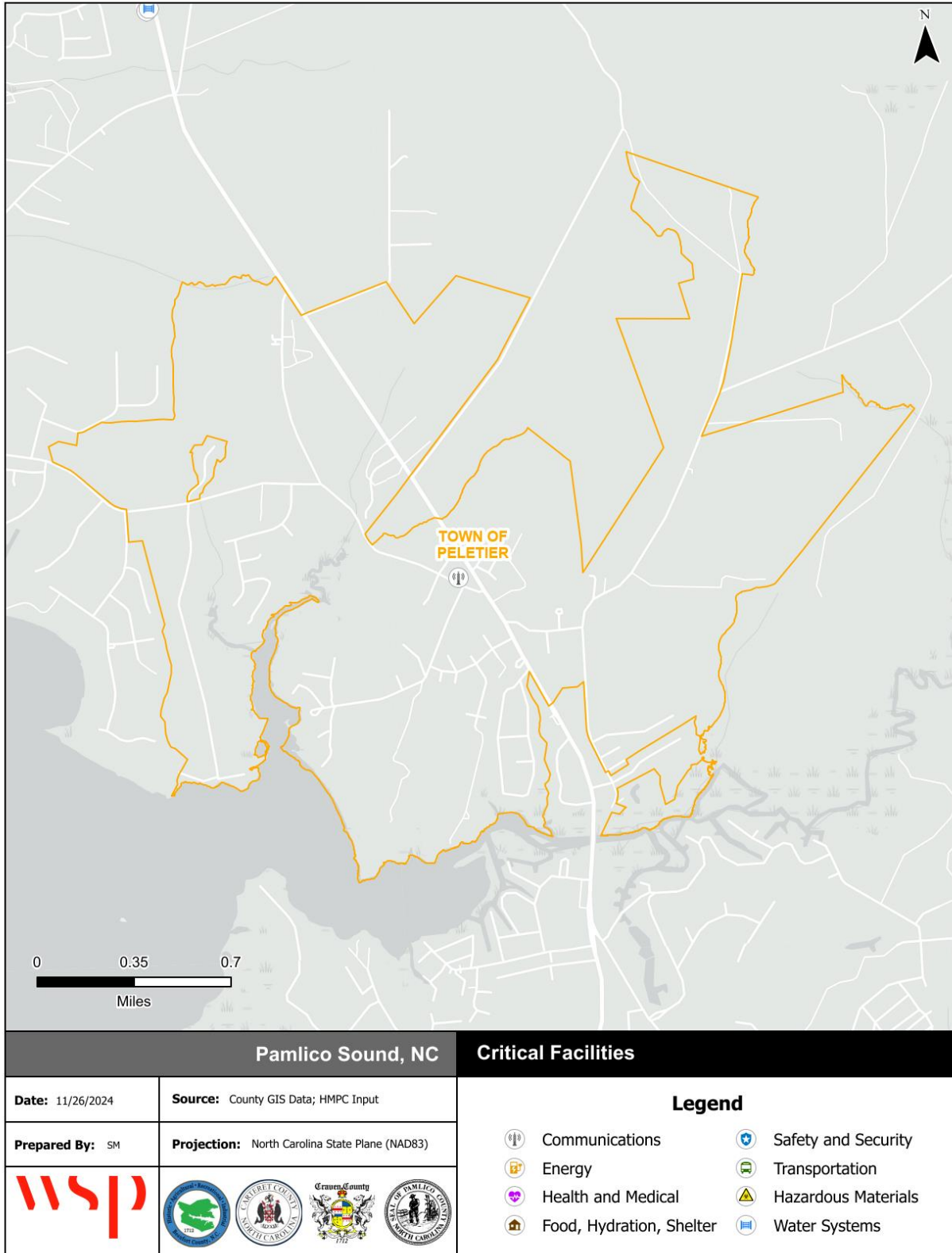
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.10 – Critical Facilities, Town of Newport



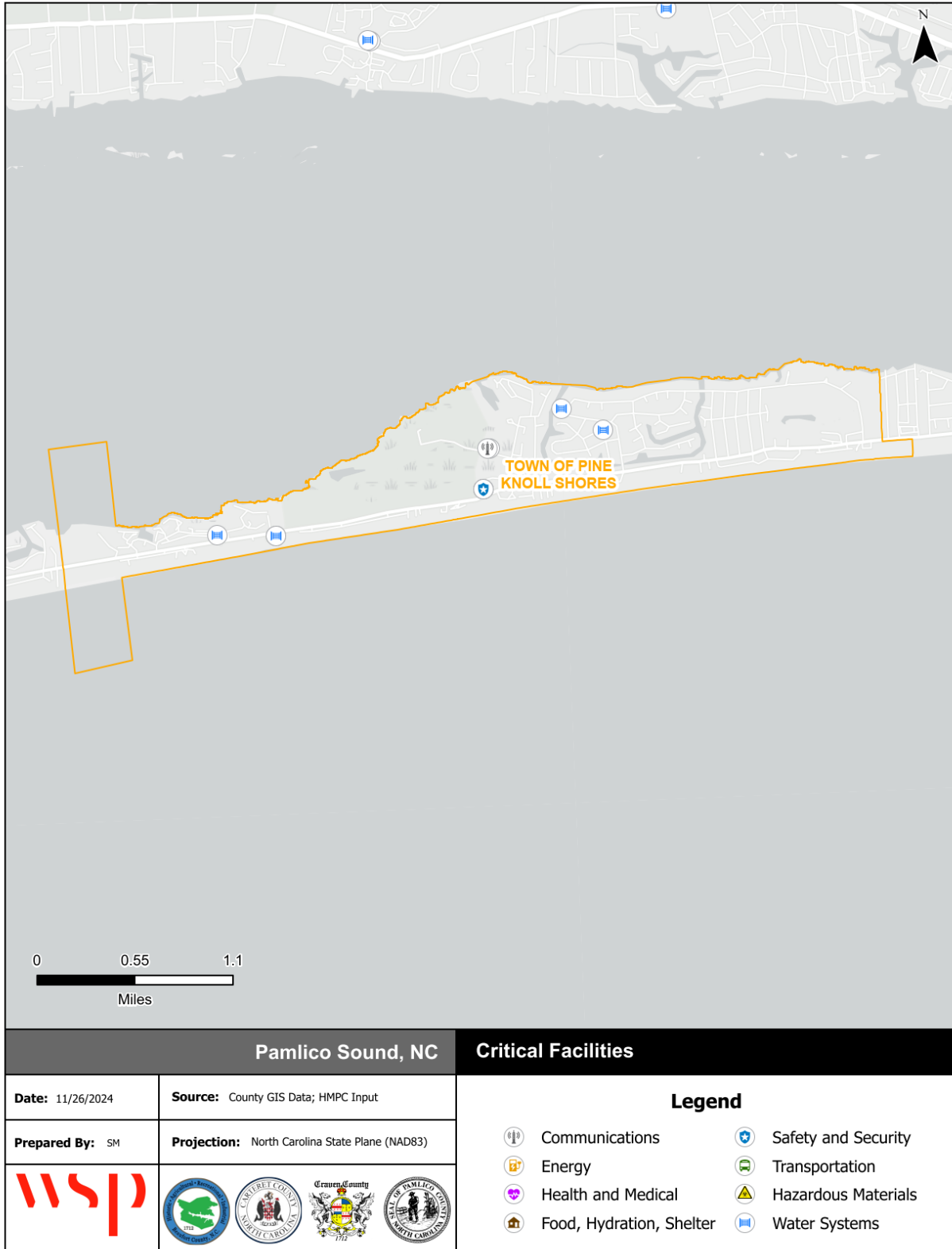
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.11 – Critical Facilities, Town of Peletier



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure B.12 - Critical Facilities, Town of Pine Knoll Shores



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Table B.13 - Carteret County Critical Facilities Inventory

| FEMA Lifeline                         | Facility Type                | Address  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------------------------------|------------------------------|--|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| <b>Unincorporated Carteret County</b> |                              |  |                 |            |             |                     |                       |             |                  |                |
| Water Systems                         | Water Treatment Distribution | -  | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 6              |
| Water Systems                         | Water Treatment Distribution | -  | \$3,412         | X Unshaded | 0.1         | 7                   | 2                     | Y           | 2                | 0              |
| Water Systems                         | Water Treatment Distribution | -  | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 3              |
| Water Systems                         | Sewer Treatment              | Town Of Beaufort WWT   | \$0             | X Unshaded | 0.1         | 10                  | 3                     | Y           | 4                | 0              |
| Water Systems                         | Public Water Supply          | Inside PLT @ Guthrie Drive   | \$3,412         | X Unshaded | 0.1         | 7                   | 2                     | Y           | 2                | 0              |
| Water Systems                         | Public Water Supply          | Yeomans Dr And Bayview Dr  | \$752           | X Shaded   | 0.1         | 7                   | 2                     | Y           | 1                | 5              |
| Water Systems                         | Public Water Supply          | East End @ Ft Macon State Park   | \$623,366       | X Shaded   | 0.1         | 5                   | 2                     | -           | 0                | 0              |
| Water Systems                         | Public Water Supply          | Croatan National Forest  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 0              |
| Water Systems                         | Public Water Supply          | Croatan National Forest  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 0              |
| Water Systems                         | Public Water Supply          | Croatan National Forest  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 6              |
| Water Systems                         | Public Water Supply          | Croatan Nat'l Forest-Pringle Rd  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 6              |
| Water Systems                         | Public Water Supply          | Croatan Nail Forest - Pringle Rd   | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 6                | 7              |
| Water Systems                         | Public Water Supply          | Front Of Park  | \$0             | X Shaded   | 0.1         | 5                   | 2                     | Y           | 3                | 0              |
| Water Systems                         | Public Water Supply          | Well Closest to Facility- Well Outside Of Pump House 10000 Gal Diesel Tank 60' North Of Well Within Conc. Block Area | \$1,798,772     | AE         | 0.1         | 4                   | 1                     | Y           | 5                | 6              |
| Water Systems                         | Public Water Supply          | Well farthest from Facility- Well Inside Pump House Old Well#2 Abandoned and Located 75' South Of Pump House.        | \$1,798,772     | AE         | 0.1         | 3                   | 1                     | -           | 5                | 7              |
| Water Systems                         | Public Water Supply          | Front Of Park  | \$0             | AE         | 0.1         | 7                   | 2                     | Y           | 5                | 5              |
| Water Systems                         | Public Water Supply          | West Of Storage Tank   | \$163,213       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline | Facility Type       | Address  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------|---------------------|--|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems | Public Water Supply | East Of Storage Tank   | \$163,213       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems | Public Water Supply | 3001 East of Well #2   | \$163,213       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems | Public Water Supply | Closest To WTP   | \$1,870         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Closest To Hwy 70  | \$1,870         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Front Of Park Right Side Facing Roberts Rd   | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Front Of Park Left Side Facing Roberts Rd  | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems | Public Water Supply | Front of Park  | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems | Public Water Supply | Hwy 24 @ WTP Inside Bldg   | \$314,542       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 3              |
| Water Systems | Public Water Supply | Hwy 24 @ WTP   | \$314,542       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 4                | 3              |
| Water Systems | Public Water Supply | Back of Park on R Side-Wooded  | \$0             | X Shaded   | 0.1         | NA                  | 3                     | Y           | 0                | 5              |
| Water Systems | Public Water Supply |  | \$1,737         | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems | Public Water Supply | Front of Park on Right of Dirt Drive Through Park  | \$38,659        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Water Systems | Public Water Supply | At MH Lots #17 & #18   | \$319,924       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Water Systems | Public Water Supply | Front Of S/D Near Pool; 108 Sea Gate Blvd, Newport, Nc   | \$0             | AE         | 5.3         | 4                   | 1                     | -           | 6                | 0              |
| Water Systems | Public Water Supply | 200 Country Club Ln, Newport, NC 28570. West Side of Country Club Ln, North of Clipper Point Way | \$0             | X Shaded   | 0.1         | NA                  | 2                     | Y           | 6                | 2              |
| Water Systems | Public Water Supply | Inside The Treatment Plant   | \$2,902,270     | AE         | 0.1         | 6                   | 2                     | Y           | 6                | 5              |
| Water Systems | Public Water Supply | Rt Side Treat House Closet to Woods  | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Lft Side of Treatment House Closest To Entrance  | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Front Of Park  | \$15,281        | X Unshaded | 0.1         | NA                  | 4                     | -           | 5                | 3              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline | Facility Type       | Address   | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------|---------------------|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems | Public Water Supply | 301 Steel Tank Rd, Beaufort, NC SW Corner of Steel Tank Rd and Sensation Weigh          | \$0             | AE         | 0.1         | 4                   | 1                     | Y           | 0                | 6              |
| Water Systems | Public Water Supply | Front Of MHP- Less Than 25 Feet West of EOP For Howard Rd Outside of Treatment Building | \$14,901        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | 515 Tom Mann Rd Located in Open Field At End Of Road In Center Of Western Side Of MHP   | \$0             | X Unshaded | 0.1         | NA                  | 4                     | -           | 5                | 0              |
| Water Systems | Public Water Supply | Open Field Approximately 115' NE of Well #1, Within Small Enclosure                     | \$0             | X Unshaded | 0.1         | NA                  | 4                     | -           | 5                | 0              |
| Water Systems | Public Water Supply | Sr 1114 OIW Sea Horse/Sandy St  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Water Systems | Public Water Supply | Ocean Spray Dr  | \$91,798        | X Unshaded | 0.1         | NA                  | 2                     | Y           | 3                | 3              |
| Water Systems | Public Water Supply | End Or Sr 1101  | \$63,807        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 4                | 0              |
| Water Systems | Public Water Supply | Laurel Rd At Elevated Tank Behind WTP   | \$0             | X Shaded   | 0.1         | 9                   | 2                     | -           | 0                | 5              |
| Water Systems | Public Water Supply | 1364 Merrimon Road Sr 1300  | \$2,364         | AE         | 0.1         | 9                   | 1                     | Y           | 6                | 2              |
| Water Systems | Public Water Supply | Jonaquin Creek Rd Sr 1317   | \$3,329         | AE         | 1.0         | 6                   | 2                     | Y           | 5                | 7              |
| Water Systems | Public Water Supply | Front Of MHP  | \$12,946        | X Unshaded | 0.1         | NA                  | 5                     | Y           | 6                | 0              |
| Water Systems | Public Water Supply | Off Pintail Ln, Dirt Access Rd on East Side   | \$0             | AE         | 0.1         | 4                   | 1                     | Y           | 1                | 4              |
| Water Systems | Public Water Supply | Off Pintail Ln, Dirt Access Rd on East Side   | \$0             | AE         | 0.1         | 3                   | 1                     | Y           | 1                | 3              |
| Water Systems | Public Water Supply | Inside Treatment Plant  | \$446,223       | AE         | 0.1         | 4                   | 1                     | Y           | 0                | 0              |



**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline | Facility Type       | Address   | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------|---------------------|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems | Public Water Supply | In Median Approximately 100' From WTP               | \$446,223       | AE         | 0.1         | 5                   | 2                     | Y           | 0                | 0              |
| Water Systems | Public Water Supply | Behind School Near Playground                       | \$3,477,135     | AE         | 0.1         | 6                   | 2                     | Y           | 5                | 5              |
| Water Systems | Public Water Supply | Side Of School Near Playground                      | \$1,080,534     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Water Systems | Public Water Supply | West Of Well #2 Behind Main Office                  | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 3                | 0              |
| Water Systems | Public Water Supply | East Of Well #1 Behind Main Office                  | \$0             | X Unshaded | 0.1         | 10                  | 3                     | -           | 3                | 0              |
| Water Systems | Public Water Supply | Beside Dock in Front of Grill                       | \$0             | AE         | 0.1         | 5                   | NA                    | Y           | 0                | 0              |
| Water Systems | Public Water Supply | On The Left Entering Motel Parking Lot              | \$66,125        | X Shaded   | 0.1         | 8                   | 3                     | -           | 0                | 0              |
| Water Systems | Public Water Supply | Bldg 7028 Behind Barracks                           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 7              |
| Water Systems | Public Water Supply | Bldg 9058 Behind Maint Shop Bldg                    | \$0             | AE         | 0.1         | 7                   | 1                     | -           | 0                | 0              |
| Water Systems | Public Water Supply | Front Left by Hwy                                   | \$0             | AE         | 0.1         | 5                   | 2                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Plywood Wellhouse in Front Yard Of Bldg             | \$239,010       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 2                | 3              |
| Water Systems | Public Water Supply | Driveway In Tile Cover 45' From Bldg                | \$239,010       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 2                | 0              |
| Water Systems | Public Water Supply | Rt Front Corner Lt from Hwy                         | \$74,103        | AE         | 0.1         | 5                   | 2                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Left Front of Building - 5 Ft Off Hwy 70            | \$0             | AE         | 0.1         | 4                   | 2                     | Y           | 6                | 0              |
| Water Systems | Public Water Supply | Lft Side of The Store ~50 Ft from Harkers Island Rd | \$159,639       | AE         | 0.1         | 6                   | 2                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Front Of Church                                     | \$2,190,798     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 0              |
| Water Systems | Public Water Supply | In Pumphouse Beside the Old Well House              | \$346,412       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline | Facility Type       | Address   | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------|---------------------|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems | Public Water Supply | Located At 119 Hwy 70 E - Yard Beside Store               | \$0             | AE         | 0.1         | 6                   | 2                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | @Bathhouse&The Playground                                 | \$0             | AE         | 0.1         | 4                   | 1                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | 30' Away from Bathroom House                              | \$0             | X Shaded   | 0.1         | 9                   | 2                     | -           | 5                | 6              |
| Water Systems | Public Water Supply | Far Right Side of Facility Beyond Prk Lot                 | \$307,873       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 1              |
| Water Systems | Public Water Supply | Front Of Property East Side                               | \$1,269,859     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems | Public Water Supply | Between The Parking Lots on The East Side of The Building | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 7              |
| Water Systems | Public Water Supply | Under Pecan Tree Near Parking Lot                         | \$293,508       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Left Rear from Road                                       | \$178,132       | X Unshaded | 0.1         | NA                  | 4                     | -           | 5                | 0              |
| Water Systems | Public Water Supply | Rt Corner of Bldg   | \$248,140       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 3                | 5              |
| Water Systems | Public Water Supply | Right Side of Lot Behind Bldg in Wellhouse                | \$143,144       | AE         | 0.1         | 5                   | 1                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Lft Front Side of Property Water Wooden Box               | \$87,727        | X Shaded   | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Water Systems | Public Water Supply | Back Left Corner Of Park                                  | \$0             | X Shaded   | 0.1         | 8                   | 2                     | Y           | 5                | 8              |
| Water Systems | Public Water Supply | Right Back Side of Church                                 | \$2,490,678     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |
| Water Systems | Public Water Supply | Right Of Daycare  | \$5,509         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 3              |
| Water Systems | Public Water Supply | Eastern Most Well   | \$265,091       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 3              |
| Water Systems | Public Water Supply | Western Most Well   | \$265,091       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 3              |
| Water Systems | Public Water Supply | E Side of Bathhouse @ Parking                             | \$0             | AE         | 0.1         | 6                   | 2                     | Y           | 5                | 4              |
| Water Systems | Public Water Supply | Behind Wellhouse  | \$0             | X Unshaded | 0.1         | 10                  | 3                     | -           | 0                | 2              |
| Water Systems | Public Water Supply | East Side of Property                                     | \$487,937       | X Unshaded | 0.1         | NA                  | NA                    | -           | 6                | 6              |
| Water Systems | Public Water Supply | Back Of Campground  | \$112,924       | AE         | 0.1         | 2                   | 1                     | Y           | 5                | 5              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline  | Facility Type                      | Address  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|----------------|------------------------------------|--|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
|                |                                    | Between Shed and Site 55                                   |                 |            |             |                     |                       |             |                  |                |
| Water Systems  | Public Water Supply                | Between Bldg and Hwy 70                                    | \$143,400       | AE         | 0.1         | 7                   | 2                     | Y           | 5                | 3              |
| Water Systems  | Public Water Supply                | Behind The Ice Machine in Wooden Wellhouse                 | \$0             | AE         | 0.1         | 6                   | 2                     | Y           | 5                | 2              |
| Water Systems  | Public Water Supply                | In Pumphouse Out Fron Near Hwy 70                          | \$53,438        | AE         | 0.1         | 8                   | 2                     | Y           | 5                | 3              |
| Water Systems  | Public Water Supply                | Beside Wellhouse Behind Store                              | \$189,353       | AE         | 0.1         | 4                   | 1                     | -           | 0                | 0              |
| Water Systems  | Public Water Supply                | Well Is About 50' North Of The Bathhouse                   | \$415,098       | AE         | 0.1         | 3                   | 1                     | Y           | 0                | 6              |
| Water Systems  | Public Water Supply                | Well Is Replacement For Well Drilled In The 70's Per Owner | \$555,380       | AE         | 0.1         | 4                   | 1                     | Y           | 5                | 5              |
| Water Systems  | Public Water Supply                | Back Right Corner of Property                              | \$0             | AE         | 0.1         | 5                   | 2                     | Y           | 5                | 2              |
| Water Systems  | Public Water Supply                | In Wellhouse in Front Of Treatment Room                    | \$0             | AE         | 0.1         | 2                   | 1                     | -           | 0                | 0              |
| Water Systems  | Public Water Supply                | In Wellhouse Behind the Generator Bldg                     | \$0             | AE         | 0.1         | 2                   | 1                     | -           | 0                | 0              |
| Water Systems  | Public Water Supply                | Back Right Corner from Treatment Room In The Dunes         | \$0             | VE         | 0.1         | 6                   | 3                     | -           | 1                | 0              |
| Water Systems  | Public Water Supply                | Front Right Corner of Property                             | \$493,820       | X Unshaded | 0.1         | 8                   | 2                     | Y           | 6                | 0              |
| Water Systems  | Sewer - Wastewater Treatment Plant |  | \$632,065       | X Unshaded | 0.1         | NA                  | 3                     | -           | 4                | 5              |
| Water Systems  | Sewer - Wastewater Treatment Plant |  | \$632,065       | X Unshaded | 0.1         | NA                  | 3                     | -           | 4                | 5              |
| Water Systems  | Sewer - Wastewater Treatment Plant |  | \$632,065       | X Shaded   | 0.1         | 10                  | 2                     | -           | 3                | 2              |
| Transportation | Airport                            |  | \$2,499,952     | X Shaded   | 0.1         | 7                   | 2                     | Y           | 4                | 0              |
| Transportation | Airport                            |  | \$2,499,952     | X Shaded   | 0.1         | 7                   | 2                     | Y           | 0                | 0              |
| Transportation | Airport                            |  | \$2,499,952     | X Shaded   | 0.1         | 5                   | 2                     | Y           | 0                | 0              |
| Transportation | Airport                            |  | \$2,499,952     | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline     | Facility Type  | Address                       | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------|--|-------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Transportation    | Airport  |                               | \$57,484        | X Shaded   | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | AE         | 0.1         | 6                   | 2                     | Y           | 4                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 7                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 7                   | 2                     | Y           | 0                | 0              |
| Transportation    | Airport  |                               | \$437,682       | X Shaded   | 0.1         | 6                   | 2                     | -           | 0                | 0              |
| Transportation    | Airport  |                               | \$2,499,952     | X Shaded   | 0.1         | 6                   | 2                     | -           | 0                | 0              |
| Transportation    | Airport  |                               | \$151,611       | X Shaded   | 0.1         | 6                   | 2                     | -           | 0                | 0              |
| Safety & Security | Law Enforcement - Fort Macon State Park Ranger Station                                   | 2300 East Fort Macon Road     | \$623,366       | AE         | 0.1         | 5                   | 2                     | Y           | 0                | 0              |
| Safety & Security | Law Enforcement - United States Coast Guard - Fort Macon                                 | 2301 East Fort Macon Road     | \$881,413       | AE         | 0.1         | 4                   | 1                     | Y           | 0                | 7              |
| Safety & Security | Law Enforcement - Cape Lookout National Seashore - Headquarters                          | 131 Charles Street            | \$879,475       | AE         | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Safety & Security | Fire Stations - United States Coast Guard - Fort Macon Station 4                         | 2301 East Fort Macon Road     | \$881,413       | AE         | 0.1         | 6                   | 2                     | -           | 0                | 0              |
| Safety & Security | Fire Stations - North Carolina Division of Forest Resources District 4 - Carteret County | 2721 State Highway 101        | \$41,973        | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Safety & Security | Fire Stations - Stella Volunteer Fire Department   | 141 Morristown Road           | \$208,112       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Stacy Volunteer Fire Department Incorporated                             | 1442 United States Highway 70 | \$84,998        | AE         | 0.1         | 5                   | 1                     | -           | 6                | 0              |
| Safety & Security | Fire Stations - South River-Merrimon Fire and Emergency Medical Services Incorporated    | 1329 South River Road         | \$156,157       | X Shaded   | 0.1         | 6                   | 1                     | Y           | 5                | 0              |
| Safety & Security | Fire Stations - North River and Laurel Road Volunteer Fire Department                    | 893 Merrimon Road             | \$81,787        | AE         | 0.1         | 3                   | 1                     | Y           | 6                | 5              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline     | Facility Type   | Address                                 | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------|---|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security | Fire Stations - Marshallberg Volunteer Fire Department Incorporated         | 109 Goose Pond Road                     | \$44,715        | AE         | 0.1         | 4                   | 2                     | Y           | 5                | 5              |
| Safety & Security | Fire Stations - Davis Volunteer Fire Department Incorporated                | 595 United States Highway 70            | \$234,539       | AE         | 0.1         | 5                   | 2                     | Y           | 6                | 3              |
| Safety & Security | Fire Stations - Atlantic Fire Department Incorporated                       | 967 Seashore Drive                      | \$54,440        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Cedar Island Volunteer Fire Department                      | 2208 Cedar Island Road                  | \$170,709       | AE         | 0.1         | 8                   | 3                     | Y           | 0                | 7              |
| Safety & Security | Fire Stations - Newport Fire Department - Substation                        | 485 Lake Road                           | \$383,944       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 3              |
| Safety & Security | Fire Stations - Sealevel Fire Rescue and Community Center                   | 647 United States Highway 70            | \$5,414         | AE         | 0.1         | 4                   | 1                     | Y           | 5                | 0              |
| Safety & Security | Fire Stations - Mill Creek Fire and Rescue Department                       | 2376 Mill Creek Road                    | \$46,415        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Broad and Gales Creek Volunteer Fire Department             | 3010 State Highway 24 East              | \$1,732,406     | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Harkers Island Fire and Rescue Squad                        | 1219 Island Road                        | \$639,144       | X Unshaded | 0.1         | 8                   | 2                     | Y           | 0                | 4              |
| Safety & Security | Fire Stations - Otway Volunteer Fire and Rescue Department Incorporated     | 509 United States Highway 70 East Otway | \$143,144       | AE         | 0.1         | 5                   | 2                     | Y           | 5                | 0              |
| Safety & Security | EMS - United States Coast Guard - Fort Macon Station 4                      | 2301 East Fort Macon Road               | \$881,413       | AE         | 0.1         | 6                   | 2                     | -           | 0                | 0              |
| Safety & Security | EMS - Stella Volunteer Fire Department                                      | 141 Morristown Road                     | \$208,112       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Safety & Security | EMS - Stacy Volunteer Fire Department Incorporated                          | 1442 United States Highway 70           | \$84,998        | AE         | 0.1         | 5                   | 1                     | -           | 6                | 0              |
| Safety & Security | EMS - South River-Merrimon Fire and Emergency Medical Services Incorporated | 1329 South River Road                   | \$156,157       | X Shaded   | 0.1         | 6                   | 1                     | Y           | 5                | 0              |
| Safety & Security | EMS - Atlantic Fire Department Incorporated                                 | 967 Seashore Drive                      | \$54,440        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Safety & Security | EMS - Cedar Island Volunteer Fire Department                                | 2208 Cedar Island Road                  | \$170,709       | AE         | 0.1         | 8                   | 3                     | Y           | 0                | 7              |
| Safety & Security | EMS - Newport Fire Department - Substation                                  | 485 Lake Road                           | \$383,944       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 3              |
| Safety & Security | EMS - Sealevel Fire Rescue and Community Center                             | 647 United States Highway 70            | \$5,414         | AE         | 0.1         | 4                   | 1                     | Y           | 5                | 0              |
| Safety & Security | EMS - Mill Creek Fire and Rescue Department                                 | 2376 Mill Creek Road                    | \$46,415        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline            | Facility Type  | Address                                 | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|--|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security        | EMS - Broad and Gales Creek Rescue Squad                                 | 3010 State Highway 24 East              | \$1,732,406     | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Safety & Security        | EMS - Harkers Island Fire and Rescue Squad                               | 1219 Island Road                        | \$639,144       | X Unshaded | 0.1         | 8                   | 2                     | Y           | 0                | 4              |
| Safety & Security        | EMS - Otway Volunteer Fire and Rescue Department Incorporated            | 509 United States Highway 70 East Otway | \$143,144       | AE         | 0.1         | 5                   | 2                     | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - Compassionate Hands, Inc./Crystal Coast Family Care | 107 Graham Lane                         | \$0             | X Shaded   | 0.1         | 5                   | 2                     | -           | 5                | 5              |
| Health & Medical         | Medical Facilities - Compassionate Hands, Inc./Crystal Coast Family Care | 105 Graham Lane                         | \$0             | X Shaded   | 0.1         | 5                   | 2                     | -           | 5                | 5              |
| Health & Medical         | Medical Facilities - Harkers Island Family Care Home                     | 172 Cape Lookout Drive                  | \$0             | X Unshaded | 0.1         | 9                   | 2                     | Y           | 1                | 0              |
| Health & Medical         | Medical Facilities - Harris Family Care Home                             | 819 Highway 101                         | \$0             | AE         | 0.1         | 5                   | 2                     | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - Rimmer Family Care Home                             | 4722 Highway 101                        | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - Wadin Creek Family Care Home                        | 819 Highway 101                         | \$0             | AE         | 0.1         | 5                   | 2                     | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - Akins Therapeutic Home                              | 174 Silver Hill Rd.                     | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - LIFE, Inc./Grey Fox Run Group Home                  | 148 Grey Fox Run                        | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 3              |
| Health & Medical         | Medical Facilities - LIFE, Inc./Nine Foot Road Group Home                | 1229 Nine Foot Road                     | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 6                | 0              |
| Health & Medical         | Medical Facilities - Willis Therapeutic Home                             | 207 Hunters Creek Road                  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Snug Harbor on Nelson Bay                           | 272 Highway 70 East                     | \$2,902,270     | AE         | 0.1         | 2                   | 1                     | Y           | 6                | 7              |
| Health & Medical         | Medical Facilities - Taylor Extended Care Facility                       | 468 Hwy 70                              | \$0             | AE         | 0.1         | 5                   | 2                     | Y           | 6                | 0              |
| Food, Hydration, Shelter | Swine Lagoons  | -                                       | \$112,761       | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons  | -                                       | \$0             | X Unshaded | 0.1         | 10                  | 2                     | Y           | 5                | 7              |
| Food, Hydration, Shelter | Public Schools - Atlantic Elementary                                     | 151 School Drive                        | \$1,080,534     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Broad Creek Middle                                      | 2382 Hwy 24                             | \$6,331,764     | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline                 | Facility Type                                      | Address                        | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------------------|--|--------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter      | Public Schools - East Carteret High                | 3263 Hwy 70 E                  | \$8,601,900     | AE         | 0.1         | 6                   | 2                     | Y           | 0                | 0              |
| Food, Hydration, Shelter      | Public Schools - Harkers Island Elementary         | 1163 Island Road               | \$1,921,642     | X Unshaded | 0.1         | 7                   | 2                     | Y           | 1                | 0              |
| Food, Hydration, Shelter      | Public Schools - Smyrna Elementary                 | 174 Marshallberg Road          | \$3,477,135     | AE         | 0.1         | 7                   | 2                     | Y           | 5                | 6              |
| Food, Hydration, Shelter      | Public Schools - Bogue Sound Elementary            | 3323 Highway 24                | \$21,097,575    | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Food, Hydration, Shelter      | Public Schools - Croatan High                      | 1 Cougar Lane                  | \$21,097,575    | X Unshaded | 0.1         | NA                  | 5                     | -           | 2                | 0              |
| Food, Hydration, Shelter      | Non-Public Schools - Gramercy Christian School     | 8170 Highway 70                | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 0              |
| Food, Hydration, Shelter      | Non-Public Schools - Opportunity School            | 145 Eckerd Road                | \$692,607       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |
| Food, Hydration, Shelter      | Animal Farms - Joyce Hog Farm                      | -                              | \$0             | X Unshaded | 0.1         | NA                  | 4                     | -           | 6                | 8              |
| Energy                        | Energy (fuel) - Fuel Depot                         |                                | \$2,499,952     | X Shaded   | 0.1         | 6                   | 2                     | -           | 0                | 3              |
| Communications                | Radio Communication Tower                          | 600 Time Warner Dr             | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 7              |
| Communications                | Radio Communication Tower                          | 188 Training Grounds Rd        | \$21,977        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Communications                | Radio Communication Tower                          | 120 Rossevelt Blvd             | \$0             | AE         | 0.1         | 0                   | NA                    | -           | 0                | 0              |
| Communications                | Radio Communication Tower                          | 169 Little 9 Rd                | \$18,516        | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 3              |
| Communications                | Radio Communication Tower                          | 241 Laurel Rd                  | \$0             | AE         | 0.1         | 5                   | 2                     | Y           | 5                | 0              |
| Communications                | Radio Communication Tower                          | 1951 Highway 70                | \$92,660        | AE         | 0.1         | 5                   | 1                     | -           | 6                | 3              |
| Communications                | Radio Communication Tower                          | 5125 Merrimon Rd               | \$0             | AE         | 1.6         | 5                   | 1                     | Y           | 4                | 2              |
| Communications                | Radio Communication Tower                          | 2208 Cedar Island Rd.          | \$170,709       | AE         | 0.1         | 8                   | 3                     | Y           | 0                | 7              |
| <b>Town of Atlantic Beach</b> |  |                                |                 |            |             |                     |                       |             |                  |                |
| Water Systems                 | Water Treatment Distribution                       | -                              | \$0             | AE         | 0.1         | 5                   | 2                     | -           | 0                | 0              |
| Water Systems                 | Public Water Supply                                | East Dr at WTP                 | \$0             | AE         | 0.1         | 6                   | 2                     | -           | 0                | 0              |
| Water Systems                 | Public Water Supply                                | Hwy 58 At Coral Bay Shopping   | \$0             | X Unshaded | 0.1         | 9                   | 4                     | Y           | 0                | 0              |
| Water Systems                 | Public Water Supply                                | Ocean Ridge Rd                 | \$0             | X Shaded   | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems                 | Public Water Supply                                | Hwy 58 Across from Peppertree  | \$0             | X Shaded   | 0.1         | 5                   | 2                     | Y           | 0                | 0              |
| Water Systems                 | Public Water Supply                                | West End Elevated Storage Tank | \$0             | AE         | 0.1         | 3                   | 1                     | Y           | 0                | 0              |
| Safety & Security             | Law Enforcement - Atlantic Beach Police Department | 125 West Fort Macon Road       | \$0             | AE         | 0.1         | 5                   | 1                     | -           | 0                | 0              |
| Safety & Security             | Fire Stations - Atlantic Beach Fire Department     | 125 West Fort Macon Road       | \$0             | AE         | 0.1         | 5                   | 1                     | -           | 0                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline           | Facility Type   | Address                  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------------|---|--------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security       | EMS - Atlantic Beach Fire Department                    | 125 West Fort Macon Road | \$0             | AE         | 0.1         | 5                   | 1                     | -           | 0                | 0              |
| Communications          | Radio Communication Tower                               | 1710 W. Fort Macon Rd    | \$0             | AE         | 0.1         | 2                   | 1                     | Y           | 0                | 0              |
| <b>Town of Beaufort</b> |   |                          |                 |            |             |                     |                       |             |                  |                |
| Water Systems           | Water Tower   |                          | \$0             | X Unshaded | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Water Systems           | Water Tower   |                          | \$0             | X Shaded   | 0.1         | 8                   | 2                     | Y           | 0                | 3              |
| Water Systems           | Water Tower   |                          | \$0             | X Shaded   | 0.1         | 7                   | 2                     | Y           | 0                | 0              |
| Water Systems           | Water - Drinking Water Well and Treatment               |                          | \$132,078       | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Water Systems           | Water - Drinking Water Well and Treatment               |                          | \$242,111       | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Water Systems           | Water - Drinking Water Well and Treatment               |                          | \$176,257       | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 5                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$547,673       | X Shaded   | 0.1         | 8                   | 2                     | Y           | 4                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | X Shaded   | 0.1         | 7                   | 2                     | Y           | 4                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | AE         | 0.1         | 5                   | 1                     | Y           | 4                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | X Shaded   | 0.1         | 7                   | 2                     | Y           | 0                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | AE         | 0.1         | 6                   | 2                     | Y           | 3                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$1,126,309     | AE         | 0.1         | 5                   | 1                     | Y           | 4                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | AE         | 0.1         | 4                   | 2                     | -           | 0                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | AE         | 0.1         | 3                   | 1                     | Y           | 0                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | AE         | 0.1         | 5                   | 2                     | Y           | 0                | 7              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$286,529       | AE         | 0.1         | 4                   | 1                     | Y           | 0                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | AE         | 0.1         | 3                   | 1                     | Y           | 0                | 0              |
| Water Systems           | Sewer - Sewer Pump Station                              |                          | \$0             | AE         | 0.1         | 3                   | 1                     | Y           | 2                | 1              |
| Safety & Security       | Emergency Services - Police Department                  |                          | \$618,178       | X Shaded   | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Safety & Security       | Emergency Services - EMS / Ambulance                    |                          | \$271,944       | X Shaded   | 0.1         | 9                   | 2                     | Y           | 0                | 0              |
| Safety & Security       | Emergency Services - EMS / Ambulance                    |                          | \$3,202         | X Shaded   | 0.1         | 8                   | 2                     | Y           | 0                | 3              |
| Safety & Security       | Government Services - Town Hall                         |                          | \$693,015       | AE         | 0.1         | 5                   | 2                     | Y           | 2                | 0              |
| Safety & Security       | Government Services - Public Works Maintenance Building |                          | \$54,005        | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Safety & Security       | Government Services - Public Works Maintenance Building |                          | \$54,005        | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Safety & Security       | Government Services - Public Works Maintenance Building |                          | \$54,005        | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Safety & Security       | Emergency Services - EMS / Ambulance                    |                          | \$271,944       | X Shaded   | 0.1         | 9                   | 2                     | Y           | 0                | 0              |



**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline            | Facility Type  | Address               | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|--|-----------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security        | Emergency Services - Fire Department                   |                       | \$2,182,046     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security        | Employment / Research - USACE Facility                 |                       | \$1,062,362     | AE         | 0.1         | 5                   | 2                     | -           | 0                | 0              |
| Safety & Security        | Employment / Research - USACE Facility                 |                       | \$1,062,362     | AE         | 0.1         | 5                   | 1                     | -           | 0                | 0              |
| Safety & Security        | Employment / Research - USACE Facility                 |                       | \$1,062,362     | AE         | 0.1         | 5                   | 2                     | -           | 0                | 0              |
| Safety & Security        | Employment / Research - USACE Facility                 |                       | \$1,062,362     | AE         | 0.1         | 5                   | 2                     | -           | 0                | 0              |
| Safety & Security        | Employment / Research - USACE Facility                 |                       | \$1,062,362     | AE         | 0.1         | 5                   | 1                     | -           | 0                | 6              |
| Safety & Security        | Employment / Research - USACE Facility                 |                       | \$1,062,362     | AE         | 0.1         | 5                   | 2                     | -           | 0                | 3              |
| Safety & Security        | Employment / Research - USACE Facility                 |                       | \$1,062,362     | AE         | 0.1         | 5                   | 2                     | Y           | 0                | 0              |
| Safety & Security        | Employment / Research - USACE Facility                 |                       | \$1,062,362     | AE         | 0.1         | 5                   | 2                     | Y           | 0                | 0              |
| Safety & Security        | Emergency Services - Lynn Eury Park + Police/Fire Dock |                       | \$0             | AE         | 0.1         | 3                   | 1                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Grocery - Market                                       | 100 Holly Lane        | \$47,925        | X Shaded   | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | School - School  | 302 Courthouse Square | \$5,654,331     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | School - School  | 302 Courthouse Square | \$2,132,137     | X Unshaded | 0.1         | 10                  | 3                     | Y           | 4                | 0              |
| Food, Hydration, Shelter | Distribution Center - Episcopal Church                 | 209 Ann Street        | \$149,360       | X Shaded   | 0.1         | 7                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Distribution Center - Episcopal Church                 | 209 Ann Street        | \$251,785       | X Shaded   | 0.1         | 8                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Distribution Center - Baptist Church                   | 403 Ann Street        | \$481,909       | X Shaded   | 0.1         | 8                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Distribution Center - Methodist Church                 | 417 Ann Street        | \$1,347,792     | X Shaded   | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Grocery  | 317 Cedar Street      | \$117,731       | X Shaded   | 0.1         | 9                   | 2                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Distribution Center - Episcopal Church                 | 209 Ann Street        | \$1,751,813     | X Shaded   | 0.1         | 10                  | 3                     | -           | 0                | 0              |
| Food, Hydration, Shelter | School   | 302 Courthouse Square | \$2,132,137     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 4                | 3              |
| Food, Hydration, Shelter | Grocery  |                       | \$1,685,200     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 5                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline                | Facility Type  | Address                  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|------------------------------|--|--------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter     | Distribution Center - Episcopal Church                                     | 209 Ann Street           | \$1,751,813     | X Shaded   | 0.1         | 9                   | 2                     | -           | 0                | 0              |
| Food, Hydration, Shelter     | Food   | 100 Misson Ridge         | \$453,575       | X Unshaded | 0.1         | 10                  | 3                     | Y           | 5                | 0              |
| Food, Hydration, Shelter     | Grocery  | 120 Jericho Drive        | \$1,942,734     | X Shaded   | 0.1         | 8                   | 2                     | Y           | 3                | 0              |
| Food, Hydration, Shelter     | Tiller Elem. School  |                          | \$1,098,077     | X Unshaded | 0.1         | 8                   | 3                     | Y           | 5                | 5              |
| Food, Hydration, Shelter     | Tiller Elem. School  |                          | \$1,098,077     | X Unshaded | 0.1         | 10                  | 3                     | Y           | 5                | 5              |
| Food, Hydration, Shelter     | Tiller Elem. School  |                          | \$1,098,077     | X Unshaded | 0.1         | 9                   | 2                     | Y           | 5                | 4              |
| Food, Hydration, Shelter     | Tiller Elem. School  |                          | \$1,098,077     | X Shaded   | 0.1         | 10                  | 2                     | Y           | 5                | 0              |
| Food, Hydration, Shelter     | Tiller Elem. School  |                          | \$1,098,077     | X Shaded   | 0.1         | 10                  | 3                     | Y           | 5                | 5              |
| Energy                       | Energy (fuel) - Gas Station  | 539 South Main Street    | \$309,205       | X Unshaded | 0.1         | 9                   | 2                     | Y           | 5                | 0              |
| Communications               | Communications - Cell Tower  | 302 Courthouse Square    | \$20,738,190    | X Shaded   | 0.1         | 9                   | 2                     | Y           | 0                | 0              |
| Communications               | Communications - Cell Tower  | 302 Courthouse Square    | \$20,738,190    | X Unshaded | 0.1         | 9                   | 2                     | Y           | 0                | 0              |
| Communications               | Communications - Cell Tower  | 302 Courthouse Square    | \$20,738,190    | X Unshaded | 0.1         | 9                   | 2                     | Y           | 0                | 0              |
| Communications               | Communications - Cell Tower  | 302 Courthouse Square    | \$20,738,190    | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Communications               | Communications - Cell Tower  |                          | \$0             | X Unshaded | 0.1         | 10                  | 3                     | Y           | 0                | 0              |
| Communications               | Radio Communication Tower  | 420 Broad St.            | \$933,687       | X Shaded   | 0.1         | 8                   | 2                     | -           | 0                | 0              |
| <b>Town of Cape Carteret</b> |  |                          |                 |            |             |                     |                       |             |                  |                |
| Safety & Security            | Law Enforcement - Cape Carteret Police Department                          | 202 W B Mclean Boulevard | \$586,555       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Food, Hydration, Shelter     | Public Schools - White Oak Elementary                                      | 555 WB McLean Drive      | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 4                | 0              |
| Communications               | Radio Communication Tower - Carteret County Emergency Communications Tower | 678 Old Highway 58       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 5                | 0              |
| <b>Town of Cedar Point</b>   |  |                          |                 |            |             |                     |                       |             |                  |                |
| Safety & Security            | Fire Stations - Western Carteret Fire and Emergency Medical Services       | 140 Sherwood Avenue      | \$379,074       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 3                | 0              |
| Safety & Security            | EMS - Western Carteret Fire and Emergency Medical Services                 | 140 Sherwood Avenue      | \$379,074       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 3                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline               | Facility Type   | Address                                     | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-----------------------------|---|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter    | Non-Public Schools - Salt and Light Academy                           | 544 Cedar Point Blvd.                       | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| <b>Town of Emerald Isle</b> |   |   |                 |            |             |                     |                       |             |                  |                |
| Water Systems               | Water Treatment Distribution  | -   | \$0             | X Shaded   | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems               | Water Treatment Distribution  | -   | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems               | Water Treatment Distribution  | -   | \$0             | X Shaded   | 0.1         | 10                  | 2                     | Y           | 0                | 3              |
| Water Systems               | Water Treatment Distribution  | -   | \$517,868       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 3              |
| Water Systems               | Water Treatment Distribution  | -   | \$520,148       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems               | Water Treatment Distribution  | -   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems               | Water Treatment Distribution  | -   | \$116,346       | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Water Systems               | Water Treatment Distribution  | -   | \$2,107,486     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems               | Public Water Supply   | Emerald Dr @ 7th St-Old N Elev              | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Water Systems               | Public Water Supply   | 7206 Canal St                               | \$0             | AE         | 0.1         | 3                   | 1                     | Y           | 1                | 6              |
| Water Systems               | Public Water Supply   | 7412 Emerald Dr-Office - Black Skimmer Road | \$79,856        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems               | Public Water Supply   | Emerald Dr Across Bluewater Bay             | \$0             | X Shaded   | 0.1         | 9                   | 3                     | Y           | 0                | 0              |
| Water Systems               | Public Water Supply   | Holly St                                    | \$0             | X Unshaded | 0.1         | NA                  | 2                     | Y           | 0                | 2              |
| Water Systems               | Public Water Supply   | NC Hwy 58 Mile Post 16                      | \$1,637         | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems               | Public Water Supply   | At RO Plant Coast Guard Rd                  | \$0             | X Shaded   | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems               | Public Water Supply   | Ocean Oaks St and Coast Guard Rd            | \$0             | X Shaded   | 0.1         | 9                   | 3                     | Y           | 1                | 0              |
| Water Systems               | Public Water Supply   | Coast Guard Rd at Elevated Tank             | \$0             | X Shaded   | 0.1         | NA                  | 2                     | Y           | 1                | 7              |
| Safety & Security           | Law Enforcement - City of Emerald Isle Police Department              | 7500 Emerald Drive                          | \$520,148       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security           | Fire Stations - Emerald Isle Fire Department Station 1 - Headquarters | 7516 Emerald Drive                          | \$1,392,568     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Safety & Security           | Fire Stations - Emerald Isle Fire Department Station 2                | 2810 Emerald Drive                          | \$353,727       | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Safety & Security           | EMS - United States Coast Guard - Emerald Isle Station                | 11101 Station Street                        | \$478,903       | AE         | 4.5         | 6                   | 2                     | -           | 0                | 0              |
| Safety & Security           | EMS - Emerald Isle Fire Department Station 1 - Headquarters           | 7516 Emerald Drive                          | \$1,392,568     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline                | Facility Type  | Address  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|------------------------------|--|--|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security            | EMS - Emerald Isle Emergency Medical Services Incorporated   | 218 Cedar Street                                 | \$131,652       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 1                | 0              |
| Safety & Security            | EMS - Emerald Isle Fire Department Station 2   | 2810 Emerald Drive                               | \$353,727       | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| <b>Town of Indian Beach</b>  |  |  |                 |            |             |                     |                       |             |                  |                |
| Water Systems                | Water Treatment Distribution   | -  | \$738,672       | X Shaded   | 0.1         | 8                   | 2                     | Y           | 0                | 7              |
| Water Systems                | Public Water Supply  | Hwy 58, 1/4 Mile West of Ocean Club Condos       | \$0             | VE         | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Water Systems                | Public Water Supply  | NC Hwy 58 Milespost 10                           | \$0             | X Shaded   | 0.1         | 10                  | 2                     | Y           | 0                | 5              |
| Safety & Security            | Law Enforcement - Indian Beach Police Department   | 1400 Salter Path Road                            | \$983,872       | X Shaded   | 0.1         | 9                   | 3                     | -           | 0                | 0              |
| Safety & Security            | Fire Stations - Salter Path Volunteer Fire and Emergency Medical Services Department                     | 1410 Salter Path Road                            | \$183,949       | X Shaded   | 0.1         | 9                   | 3                     | -           | 0                | 0              |
| Safety & Security            | Ems - Salter Path Volunteer Fire and Emergency Medical Services Department                               | 1410 Salter Path Road                            | \$183,949       | X Shaded   | 0.1         | 9                   | 3                     | -           | 0                | 0              |
| <b>Town of Morehead City</b> |  |  |                 |            |             |                     |                       |             |                  |                |
| Water Systems                | Water Treatment Distribution   | -  | \$237,004       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Water Systems                | Water Treatment Distribution   | -  | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Water Systems                | Water Treatment Distribution   | -  | \$165,409       | X Unshaded | 0.1         | 7                   | 2                     | Y           | 0                | 0              |
| Water Systems                | Sewer Treatment  | Town of Morehead WWT                             | \$437,905       | X Shaded   | 0.1         | 5                   | 2                     | Y           | 4                | 0              |
| Water Systems                | Public Water Supply  | 3800 Bridges St                                  | \$1,575         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Water Systems                | Public Water Supply  | Tootle Rd & N Gate Rd                            | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 3              |
| Water Systems                | Public Water Supply  | 217 Arthur Farms Rd                              | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 3              |
| Water Systems                | Public Water Supply  | Rear Of Plant Property Country Club Rd           | \$0             | X Unshaded | 0.1         | 8                   | 2                     | Y           | 4                | 5              |
| Water Systems                | Public Water Supply  | Back Left Corner of Parking Lot Facing the Beach | \$0             | X Unshaded | 0.1         | 9                   | 3                     | -           | 0                | 6              |
| Safety & Security            | Law Enforcement - United States Customs and Border Protection - Port of Entry - Morehead City - Beaufort | 534 North 35th Street                            | \$297,326       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline     | Facility Type  | Address                            | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------|--|------------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security | Law Enforcement - North Carolina State Highway Patrol Troop A District VIII            | 5347 United States Highway 70      | \$1,192,814     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Safety & Security | Law Enforcement - Morehead City Police Department                                      | 202 South 8th Street               | \$678,249       | AE         | 0.1         | 5                   | 2                     | Y           | 0                | 0              |
| Safety & Security | Law Enforcement - North Carolina State Port Authority Police - Morehead City           | 113 Arendell Street                | \$17,666,841    | X Shaded   | 0.1         | 7                   | 2                     | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Morehead City Fire and Emergency Medical Services Department Station 2 | 3308 Arendell Street               | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Safety & Security | Fire Stations - Morehead City Fire Department and Emergency Medical Services Station 3 | 5293 United States Highway 70      | \$532,738       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Morehead City Fire and Emergency Medical Services Department Station 1 | 1406 Bridges Street                | \$776,134       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Wildwood Volunteer Fire Department                                     | 5291 United States Highway 70 West | \$394,213       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Safety & Security | EMS - Medical Transport Solutions  | 534 North 35th Street              | \$988,194       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 5                | 0              |
| Safety & Security | EMS - Morehead City Fire and Emergency Medical Services Department Station 2           | 3308 Arendell Street               | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Safety & Security | EMS - Morehead City Fire Department and Emergency Medical Services Station 3           | 5293 United States Highway 70      | \$532,738       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Safety & Security | EMS - Morehead City Fire and Emergency Medical Services Department Station 1           | 1406 Bridges Street                | \$776,134       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security | EMS - Wildwood Volunteer Fire Department   | 5291 United States Highway 70 West | \$394,213       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Safety & Security | Emergency Operation Center - Carteret County Emergency Operations Center               | 300 N 12th Street                  | \$7,620,415     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Health & Medical  | Medical Facilities - Carteret Surgery Center   | 3714 Guardian Drive                | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical  | Medical Facilities - Carteret General Hospital Outpt Cardiac Rehabilitat               | 3500 Arendell St                   | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Health & Medical  | Medical Facilities - Willis House  | 906 Evans Street                   | \$0             | AE         | 0.1         | 6                   | 2                     | -           | 0                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline            | Facility Type  | Address                        | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|--|--------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Health & Medical         | Medical Facilities - CareFocus                             | 3332 Bridges Street, Suite 1-A | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Carteret Home Health Services         | 302 Medical Park Court         | \$622,430       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Liberty Home Care                     | 3601 Bridges Street            | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Professional Nursing Service, Inc.    | 212 North 35th Street          | \$5,351,718     | X Unshaded | 0.1         | 7                   | 3                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Tar Heel Home Health                  | 3800 Arendell Street           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Carolina House of Morehead City       | 107 Bryan Street               | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Carteret Care, Inc.                   | 3904 Guardian Avenue           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Hospice of Carteret County            | 302 Medical Park Court         | \$622,430       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Carteret General Hospital             | 3500 Arendell St               | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Atlantic House                        | 3710 Bridges Street            | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Carteret Counseling Services, Inc.    | 105 North Tenth Street-Ste. 6  | \$0             | X Unshaded | 0.1         | 9                   | 3                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Family Mental Health Consultants      | 229 Professional Circle        | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Neuse Center for MH/DD/SAS            | 500 North 35th Street          | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Pavia Therapeutic Home                | 1329 North Twentieth           | \$0             | AE         | 0.1         | 5                   | 2                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Smith Assessment & Treatment Services | 700 Arendell Street Suite 8    | \$0             | X Unshaded | 0.1         | 8                   | 2                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Station Club Enterprise               | 306 Church Street              | \$0             | X Unshaded | 0.1         | 10                  | 3                     | Y           | 4                | 0              |
| Health & Medical         | Medical Facilities - Williams Therapeutic Home             | 1029 N Yaupon Dr.              | \$0             | X Unshaded | 0.1         | 6                   | 2                     | Y           | 3                | 0              |
| Health & Medical         | Medical Facilities - Century Care of the Crystal Coast     | 201 Penny Lane                 | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Harborview Health Care Center         | 812 Shepard Street             | \$0             | AE         | 0.1         | 3                   | 1                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Morehead Elem at Camp Glenn               | 3316 Arendell Street           | \$2,211,704     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 3              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline            | Facility Type                                    | Address                             | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|--|-------------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Public Schools - Morehead City Middle            | 400 Barbour Road                    | \$3,313,499     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 4                | 0              |
| Food, Hydration, Shelter | Public Schools - Morehead City Primary           | 4409 Country Club Road              | \$9,779,056     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - West Carteret High              | 4700 Country Club Road              | \$8,912,255     | X Unshaded | 0.1         | NA                  | 5                     | Y           | 6                | 0              |
| Food, Hydration, Shelter | Public Schools - Cape Lookout Marine Sci High    | 1108 Bridges Street                 | \$615,953       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - New Life Christian Academy  | 301 Friendly Road                   | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 4                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - St. Egbert Catholic School  | 1705 Evans Street                   | \$0             | X Unshaded | 0.1         | 9                   | 3                     | -           | 0                | 0              |
| Communications           | Public Safety Answering Point                    | 300 N 12th Street                   | \$7,620,415     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Communications           | Radio Communication Tower                        | 1403 Bridges St.                    | \$340,225       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Communications           | Radio Communication Tower                        | 3800 Bridges St                     | \$209,726       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Communications           | Radio Communication Tower                        | 300 N. 12th St.                     | \$7,620,415     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| <b>Town of Newport</b>   |  |                                     |                 |            |             |                     |                       |             |                  |                |
| Water Systems            | Water Treatment Distribution                     | -                                   | \$16,780        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 7              |
| Water Systems            | Sewer Treatment                                  | Town Of Newport                     | \$0             | AE         | 0.1         | 7                   | 2                     | Y           | 0                | 3              |
| Water Systems            | Public Water Supply                              | WTP                                 | \$16,780        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Water Systems            | Public Water Supply                              | Hargett St                          | \$0             | AE         | 0.1         | 7                   | 2                     | -           | 5                | 6              |
| Water Systems            | Public Water Supply                              | Foxhall Rd Across from Nursing Home | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 3              |
| Safety & Security        | Law Enforcement - Newport Police Department      | 255 Howard Boulevard                | \$81,446        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 1              |
| Safety & Security        | Fire Stations - Newport Fire Department          | 125 Howard Boulevard                | \$194,391       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |
| Safety & Security        | EMS - Newport Fire Department                    | 125 Howard Boulevard                | \$194,391       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - Broman Assisted Living      | 453 Howard Boulevard                | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Somerset Court of Newport   | 3020 Market Street                  | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - ARC/HDS Carteret #1-Newport | 2331 North Lakeview Drive           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - Britthaven of Newport       | 210 Foxhall Rd.                     | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Newport Elementary              | 219 Chatham Street                  | \$4,822,670     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Newport Middle                  | 500 E Chatham Street                | \$6,687,137     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |

**ANNEX B: CARTERET COUNTY**

| FEMA Lifeline                    | Facility Type  | Address                        | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|----------------------------------|--|--------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter         | Non-Public Schools - Grace Christian School                                      | 520 Roberts Road               | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 5              |
| <b>Town of Peletier</b>          |  |                                |                 |            |             |                     |                       |             |                  |                |
| Communications                   | Carteret County Emergency Communications Tower                                   | 150 Peletier Loop Rd           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 3              |
| <b>Town of Pine Knoll Shores</b> |  |                                |                 |            |             |                     |                       |             |                  |                |
| Water Systems                    | Public Water Supply  | Beacon Reach Tennis Courts     | \$0             | X Shaded   | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems                    | Public Water Supply  | Old Office Off Mimosa Dr       | \$0             | X Shaded   | 0.1         | NA                  | 5                     | Y           | 2                | 4              |
| Water Systems                    | Public Water Supply  | Oakleak And Mimosa             | \$0             | AE         | 0.1         | 6                   | 2                     | -           | 2                | 8              |
| Water Systems                    | Public Water Supply  | Roosevelt Rd Off Pine Knoll Bd | \$0             | X Shaded   | 0.1         | 8                   | 3                     | Y           | 2                | 5              |
| Water Systems                    | Public Water Supply  | Inside Well House              | \$3,603,615     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 2                | 0              |
| Water Systems                    | Public Water Supply  | Outside In Front of Well House | \$3,603,615     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 2                | 0              |
| Safety & Security                | Law Enforcement - Pine Knoll Shores Police Department - Headquarters             | 314 Salter Path Road           | \$1,142,393     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 6              |
| Safety & Security                | Fire Stations - Pine Knoll Shores Fire and Emergency Medical Services Department | 314 Salter Path Road           | \$1,142,393     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 6              |
| Safety & Security                | EMS - Pine Knoll Shores Fire and Emergency Medical Services Department           | 314 Salter Path Road           | \$1,142,393     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 6              |



## B.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level within Carteret County. The hazards included in this section are flood and wildfire.

### B.2.1 FLOODING

Table B.14 details the acreage of Carteret County's total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at over 74 percent, the Town of Atlantic Beach has the largest portion of its land area within the mapped 1%-annual-chance floodplain. At least 50 percent of the total land area in Indian Beach, Beaufort, and the unincorporated portions of Carteret County all fall within the Special Flood Hazard Area. Peletier and Newport, at 10.3 and 12.1 percent, respectively, have the smallest portion of land within the floodplain. Overall, 62 percent of the county's total land area falls within this floodplain.

**Table B.14 – Flood Zone Acreage by Jurisdiction, Carteret County**

| Flood Zone                    | Acreage        | Percent of Total (%) |
|-------------------------------|----------------|----------------------|
| <b>Town of Atlantic Beach</b> |                |                      |
| Zone AE                       | 991.5          | 60.9                 |
| Zone VE                       | 226.4          | 13.9                 |
| Zone X (500-year)             | 339.5          | 20.9                 |
| Zone X Unshaded               | 70.2           | 4.3                  |
| <b>Total</b>                  | <b>1,627.6</b> | --                   |
| <b>Town of Beaufort</b>       |                |                      |
| Zone AE                       | 988.2          | 24.7                 |
| Zone VE                       | 1,096.0        | 27.4                 |
| Zone X (500-year)             | 674.8          | 16.8                 |
| Zone X Unshaded               | 1,246.9        | 31.1                 |
| <b>Total</b>                  | <b>4,005.9</b> | --                   |
| <b>Bogue</b>                  |                |                      |
| Zone AE                       | 345.1          | 19.5                 |
| Zone VE                       | 35.1           | 2.0                  |
| Zone X (500-year)             | 81.2           | 4.6                  |
| Zone X Unshaded               | 1,305.4        | 73.9                 |
| <b>Total</b>                  | <b>1,766.8</b> | --                   |
| <b>Town of Cape Carteret</b>  |                |                      |
| Zone AE                       | 285.6          | 17.3                 |
| Zone VE                       | 19.5           | 1.2                  |
| Zone X (500-year)             | 79.6           | 4.8                  |
| Zone X (unshaded)             | 1,262.5        | 76.7                 |
| <b>Total</b>                  | <b>1,647.1</b> | --                   |

| Flood Zone                       | Acreage        | Percent of Total (%) |
|----------------------------------|----------------|----------------------|
| <b>Town of Cedar Point</b>       |                |                      |
| Zone AE                          | 428.9          | 29.9                 |
| Zone VE                          | 35.8           | 2.5                  |
| Zone X (500-year)                | 116.4          | 8.1                  |
| Zone X (unshaded)                | 853.2          | 59.5                 |
| <b>Total</b>                     | <b>1,434.3</b> | --                   |
| <b>Town of Emerald Isle</b>      |                |                      |
| Zone AE                          | 740.1          | 22.5                 |
| Zone VE                          | 570.4          | 17.4                 |
| Zone X (500-year)                | 578.9          | 17.6                 |
| Zone X (unshaded)                | 1,393.2        | 42.4                 |
| <b>Total</b>                     | <b>3,282.5</b> | --                   |
| <b>Town of Indian Beach</b>      |                |                      |
| Zone AE                          | 109.6          | 29.1                 |
| Zone VE                          | 111.9          | 29.7                 |
| Zone X (500-year)                | 137.6          | 36.5                 |
| Zone X (unshaded)                | 17.9           | 4.7                  |
| <b>Total</b>                     | <b>377.0</b>   | --                   |
| <b>Town of Morehead City</b>     |                |                      |
| Zone AE                          | 2,472.2        | 42.4                 |
| Zone VE                          | 157.0          | 2.7                  |
| Zone X (500-year)                | 325.3          | 5.6                  |
| Zone X (unshaded)                | 2,878.7        | 49.3                 |
| <b>Total</b>                     | <b>5,833.3</b> | --                   |
| <b>Town of Newport</b>           |                |                      |
| Zone A                           | 526.8          | 11.1                 |
| Zone X (500-year)                | 47.7           | 1.0                  |
| Zone X (unshaded)                | 4,174.5        | 87.9                 |
| <b>Total</b>                     | <b>4,749.0</b> | --                   |
| <b>Town of Peletier</b>          |                |                      |
| Zone AE                          | 239.9          | 10.3                 |
| Zone X (500-year)                | 56.3           | 2.4                  |
| Zone X (unshaded)                | 2,043.1        | 87.3                 |
| <b>Total</b>                     | <b>2,339.2</b> | --                   |
| <b>Town of Pine Knoll Shores</b> |                |                      |
| Zone AE                          | 544.9          | 34.4                 |
| Zone VE                          | 214.4          | 13.5                 |
| Zone X (500-year)                | 644.9          | 40.7                 |
| Zone X (unshaded)                | 180.3          | 11.4                 |
| <b>Total</b>                     | <b>1,584.5</b> | --                   |

| Flood Zone                            | Acreage          | Percent of Total (%) |
|---------------------------------------|------------------|----------------------|
| <b>Unincorporated Carteret County</b> |                  |                      |
| Zone AE                               | 347,982.6        | 56.0                 |
| Zone AO                               | 1,165.5          | 0.2                  |
| Zone VE                               | 61,070.6         | 9.8                  |
| Zone X (500-year)                     | 33,692.2         | 5.4                  |
| Zone X (unshaded)                     | 90,936.0         | 14.6                 |
| Open Water                            | 86,786.4         | 14.0                 |
| <b>Total</b>                          | <b>621,633.3</b> | <b>--</b>            |

Source: FEMA Effective DFIRM

Figure B.13 through Figure B.24 reflect the effective mapped flood hazard zones for all jurisdictions in Carteret County, and Figure B.25 through Figure B.36 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table B.15 provides building counts and values for critical facilities by flood zone in Carteret County and incorporated jurisdictions.

**Table B.15 – Critical Facilities Exposed to Flooding, Carteret County**

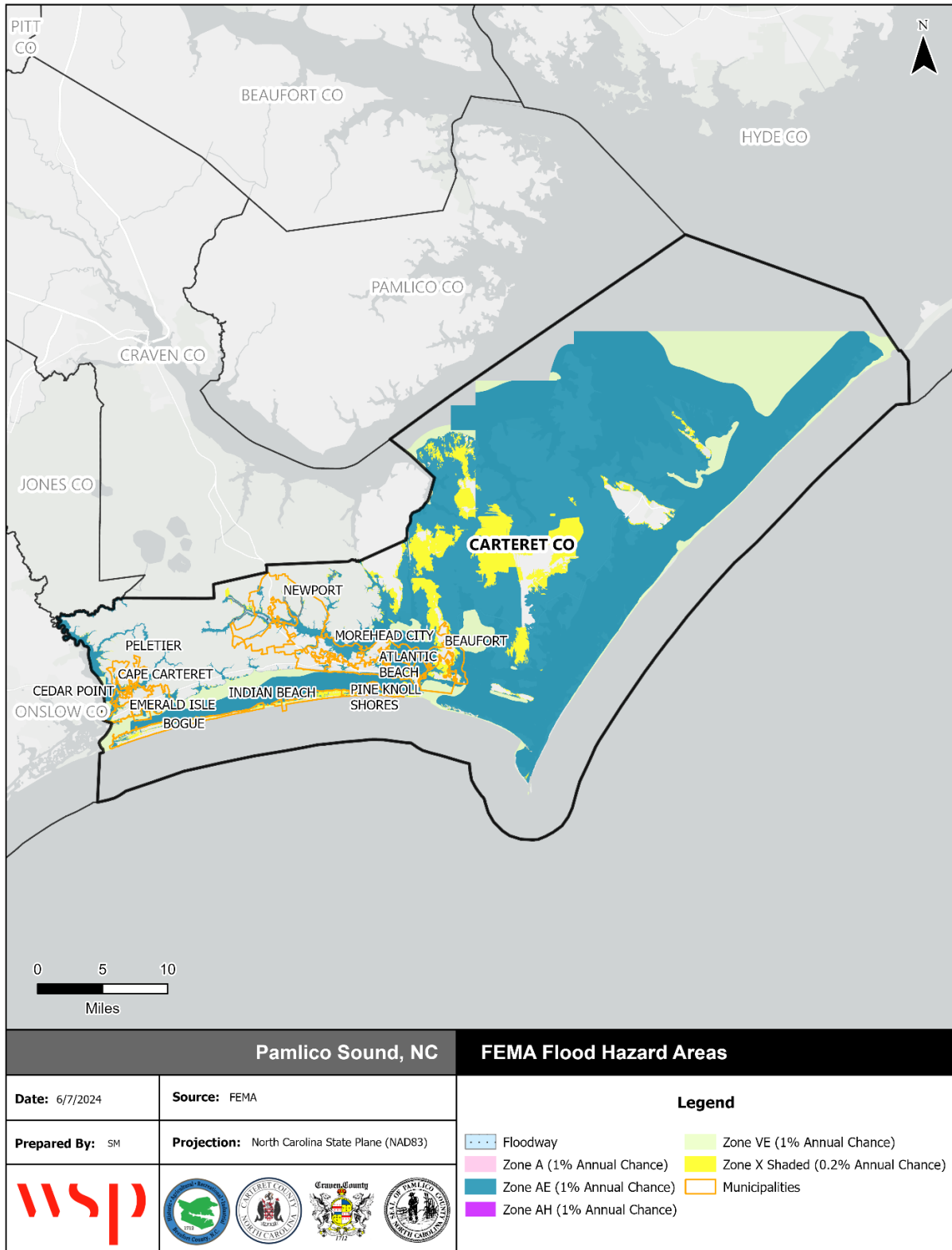
| Flood Zone                    | Critical Facility Count | Structure Value      |
|-------------------------------|-------------------------|----------------------|
| <b>Town of Atlantic Beach</b> |                         |                      |
| Zone AE                       | 7                       | \$0                  |
| Zone X (500-year)             | 2                       | \$0                  |
| Zone X (unshaded)             | 1                       | \$0                  |
| <b>Total</b>                  | <b>10</b>               | <b>\$0</b>           |
| <b>Town of Beaufort</b>       |                         |                      |
| Zone AE                       | 19                      | \$10,604,749         |
| Zone X (500-year)             | 22                      | \$33,423,834         |
| Zone X (unshaded)             | 22                      | \$80,769,893         |
| <b>Total</b>                  | <b>63</b>               | <b>\$124,798,476</b> |
| <b>Town of Cape Carteret</b>  |                         |                      |
| Zone X (unshaded)             | 3                       | \$586,555            |
| <b>Total</b>                  | <b>3</b>                | <b>\$586,555</b>     |
| <b>Town of Cedar Point</b>    |                         |                      |
| Zone X (unshaded)             | 3                       | \$758,148            |
| <b>Total</b>                  | <b>3</b>                | <b>\$758,148</b>     |
| <b>Town of Emerald Isle</b>   |                         |                      |
| Zone AE                       | 2                       | \$478,903            |
| Zone X (500-year)             | 6                       | \$0                  |
| Zone X (unshaded)             | 16                      | \$7,487,731          |
| <b>Total</b>                  | <b>24</b>               | <b>\$7,966,634</b>   |
| <b>Town of Indian Beach</b>   |                         |                      |
| Zone VE                       | 1                       | \$0                  |
| Zone X (500-year)             | 5                       | \$2,090,442          |
| <b>Total</b>                  | <b>6</b>                | <b>\$2,090,442</b>   |

**ANNEX B: CARTERET COUNTY**

| <b>Flood Zone</b>                     | <b>Critical Facility Count</b> | <b>Structure Value</b> |
|---------------------------------------|--------------------------------|------------------------|
| <b>Town of Morehead City</b>          |                                |                        |
| Zone AE                               | 4                              | \$678,249              |
| Zone X (500-year)                     | 2                              | \$18,104,746           |
| Zone X (unshaded)                     | 50                             | \$61,128,733           |
| <b>Total</b>                          | <b>56</b>                      | <b>\$79,911,728</b>    |
| <b>Town of Newport</b>                |                                |                        |
| Zone AE                               | 2                              | \$0                    |
| Zone X (unshaded)                     | 13                             | \$12,013,595           |
| <b>Total</b>                          | <b>15</b>                      | <b>\$12,013,595</b>    |
| <b>Town of Peletier</b>               |                                |                        |
| Zone X (unshaded)                     | 1                              | \$0                    |
| <b>Total</b>                          | <b>1</b>                       | <b>\$0</b>             |
| <b>Pine Knoll Shores</b>              |                                |                        |
| Zone AE                               | 1                              | \$0                    |
| Zone X (500-year)                     | 3                              | \$0                    |
| Zone X (unshaded)                     | 5                              | \$10,634,409           |
| <b>Total</b>                          | <b>9</b>                       | <b>\$10,634,409</b>    |
| <b>Unincorporated Carteret County</b> |                                |                        |
| Zone AE                               | 60                             | \$35,782,844           |
| Zone VE                               | 1                              | \$0                    |
| Zone X (500-year)                     | 35                             | \$42,410,331           |
| Zone X (unshaded)                     | 87                             | \$71,857,745           |
| <b>Total</b>                          | <b>184</b>                     | <b>\$150,050,920</b>   |

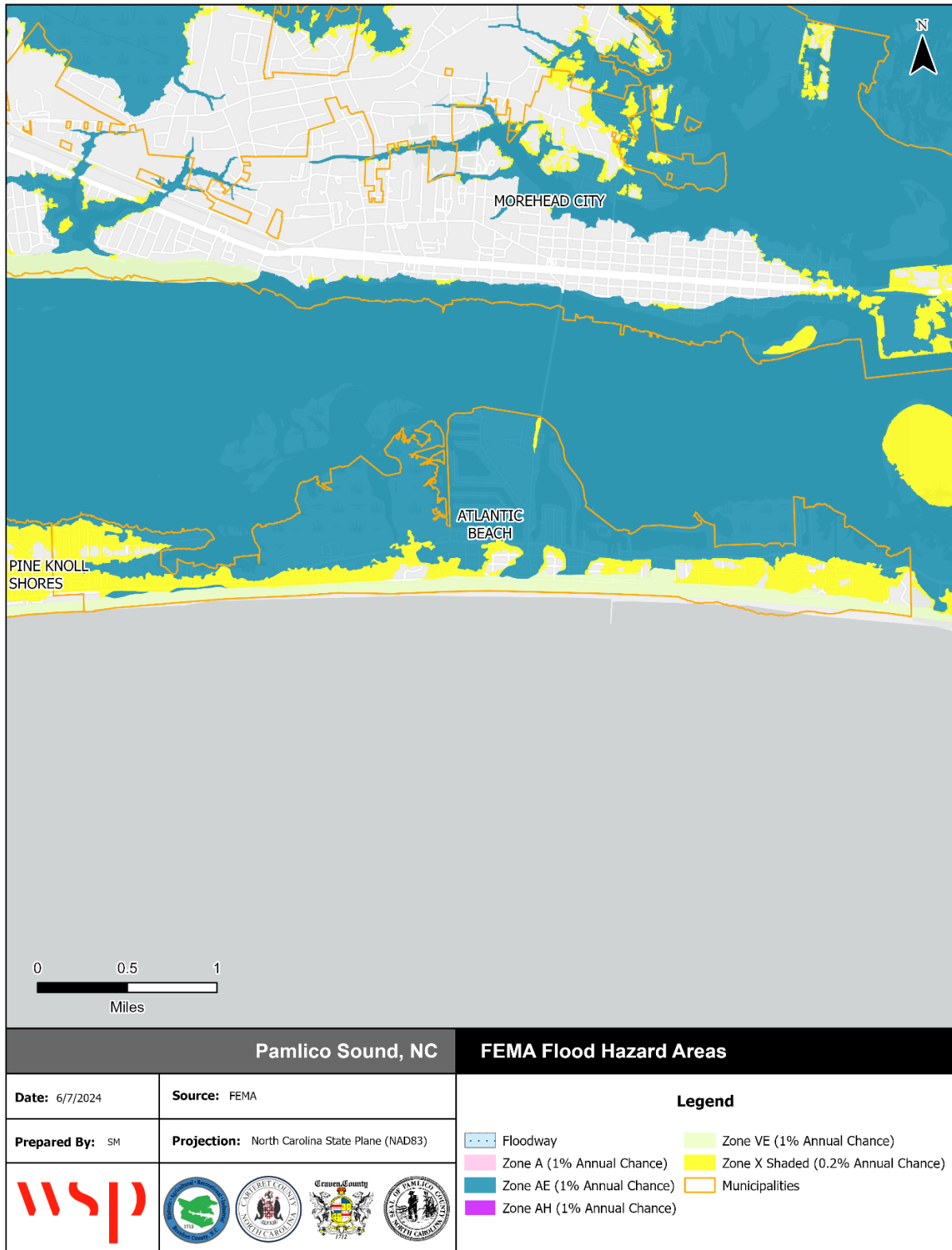
Source: FEMA Effective FIRM

Figure B.13 - FEMA Flood Hazard Areas, Unincorporated Carteret County



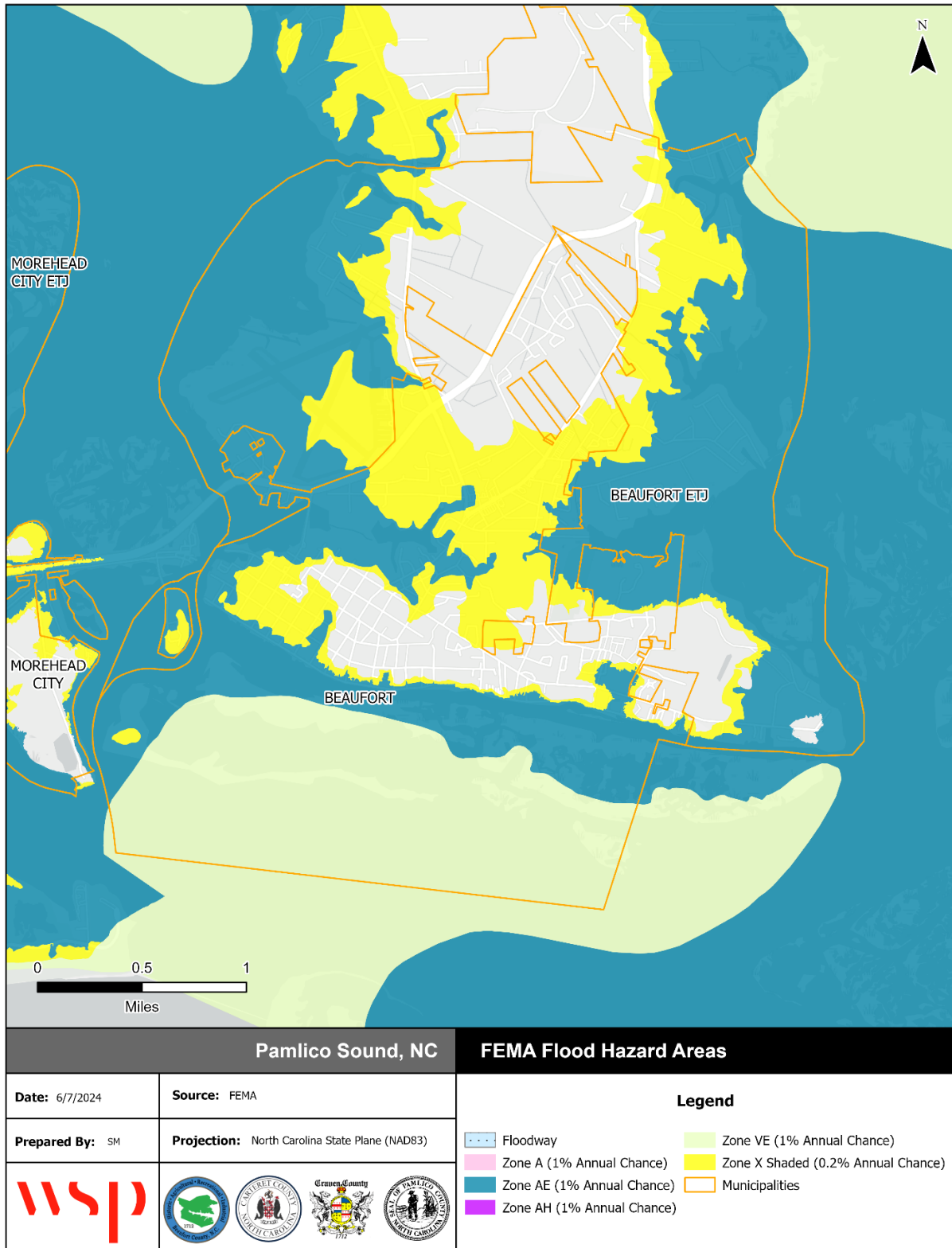
Source: FEMA Effective DFIRM

Figure B.14 - FEMA Flood Hazard Areas, Town of Atlantic Beach



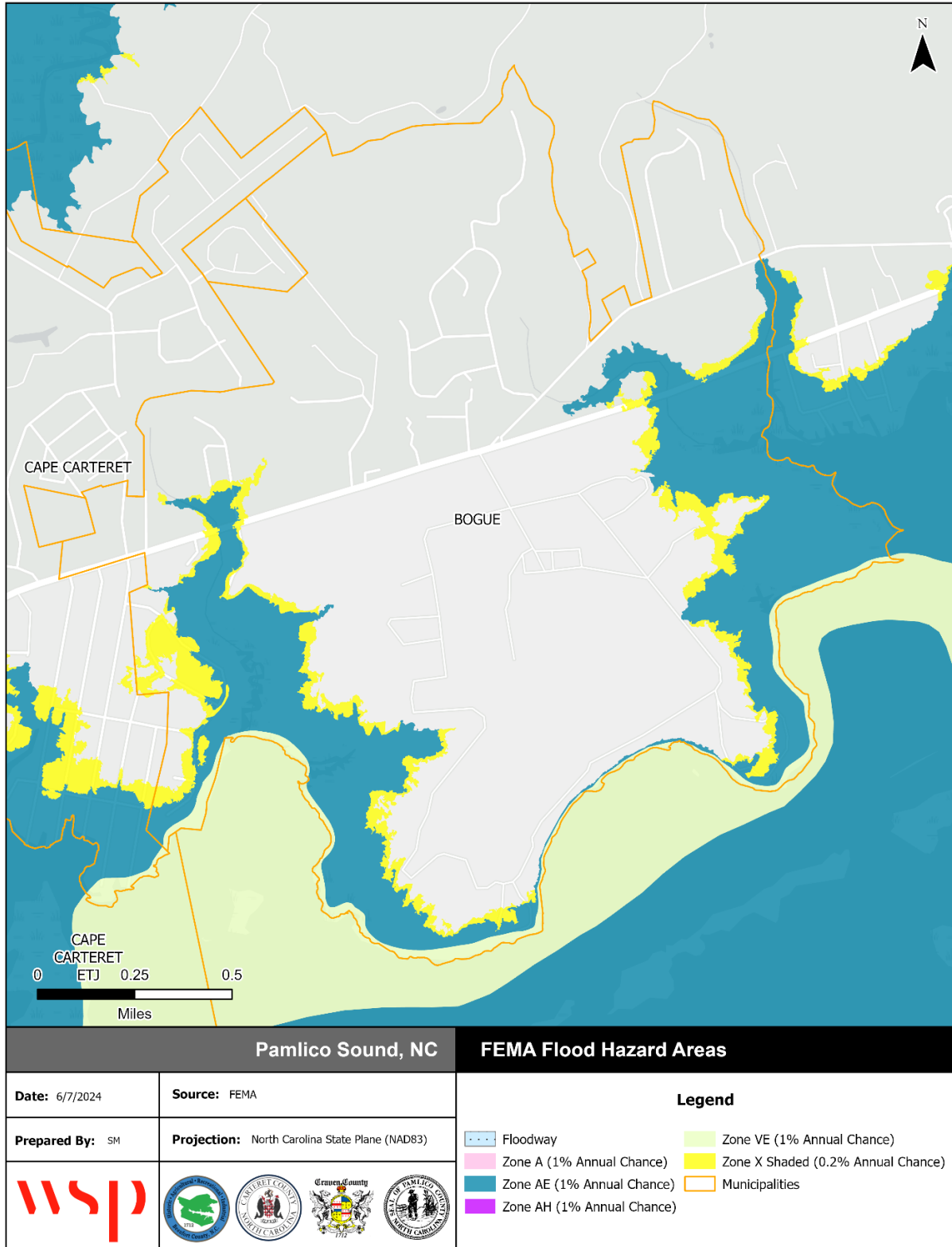
Source: FEMA Effective DFIRM

Figure B.15 - FEMA Flood Hazard Areas, Town of Beaufort



Source: FEMA Effective DFIRM

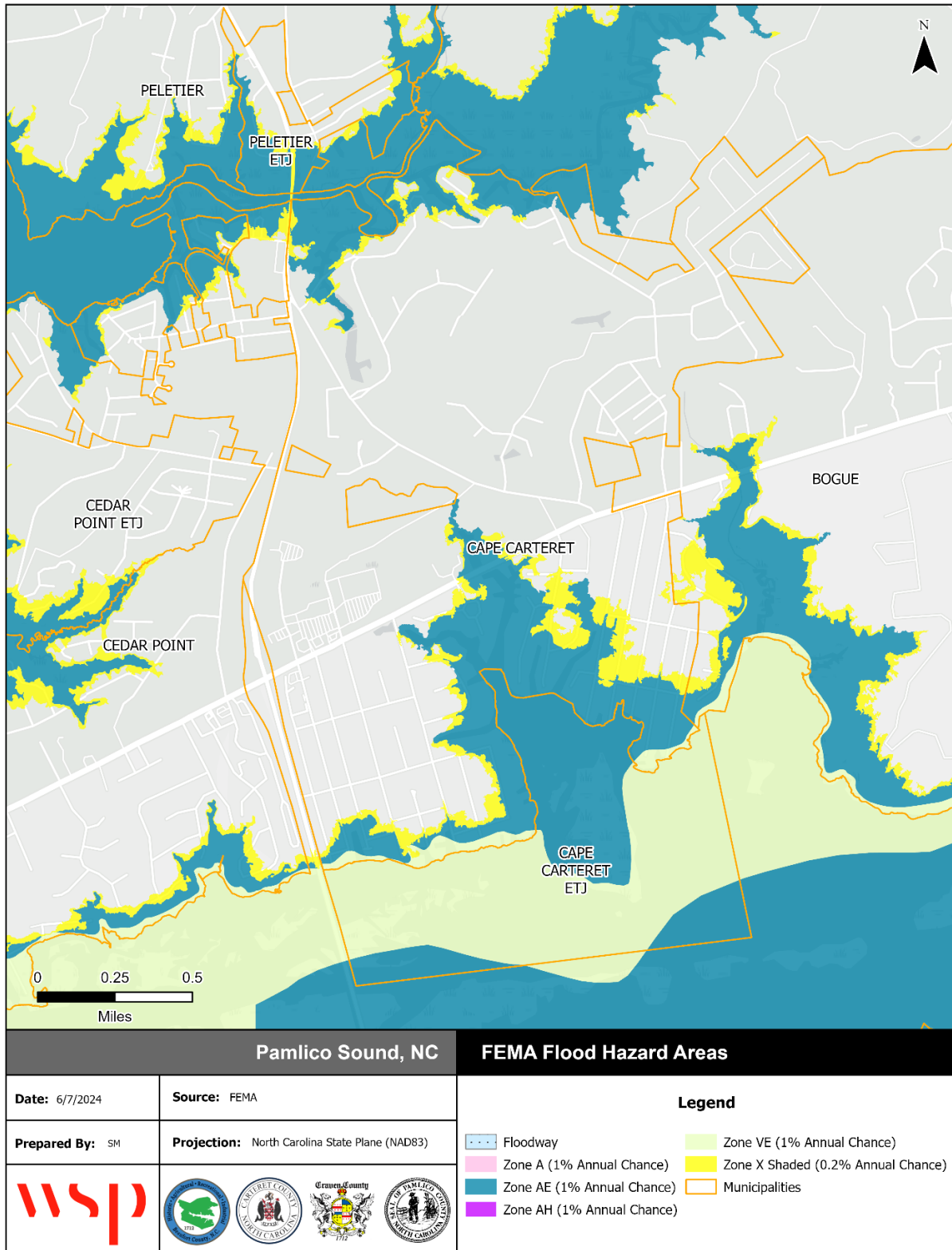
Figure B.16 - FEMA Flood Hazard Areas, Town of Bogue



Source: FEMA Effective DFIRM

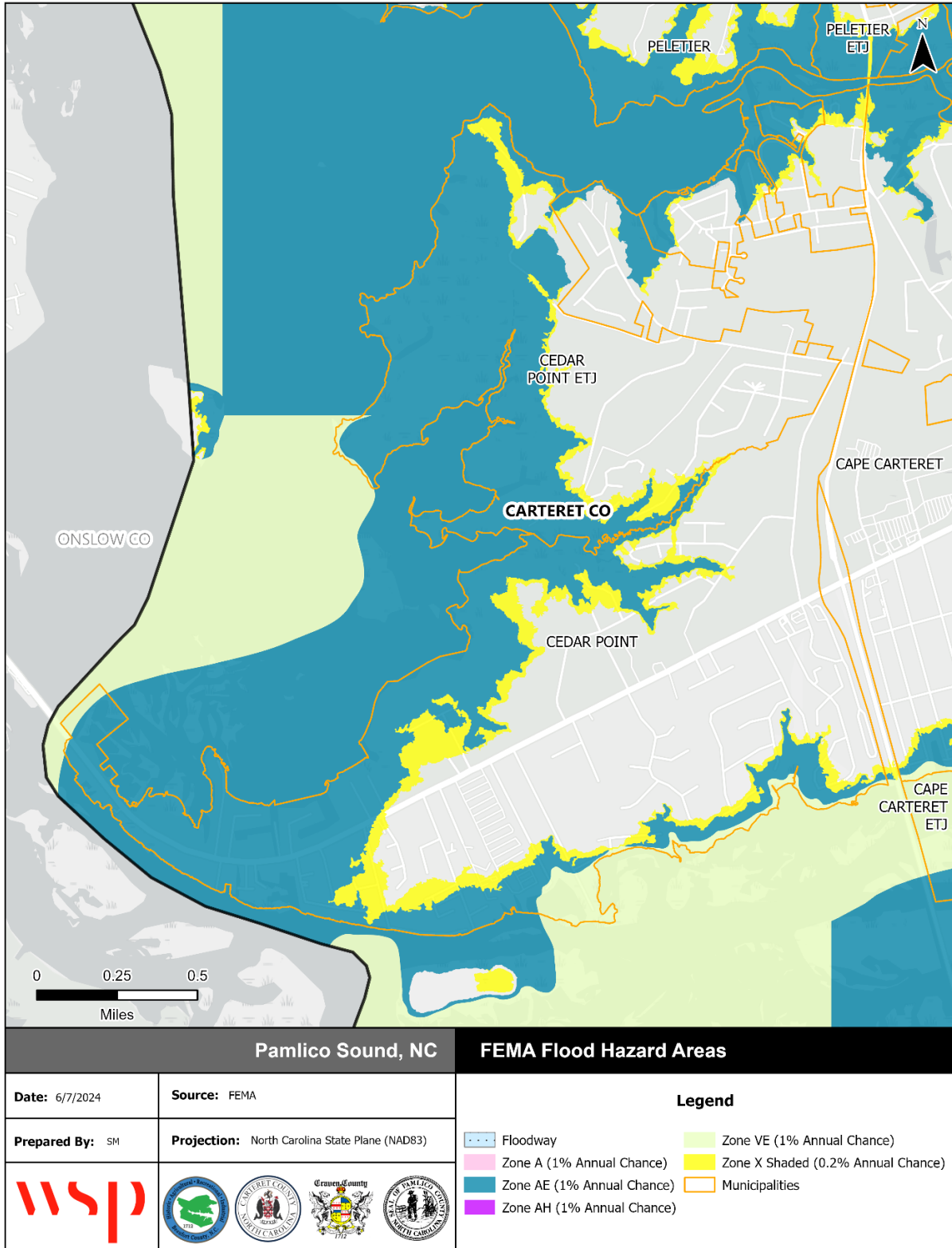


Figure B.17 - FEMA Flood Hazard Areas, Town of Cape Carteret



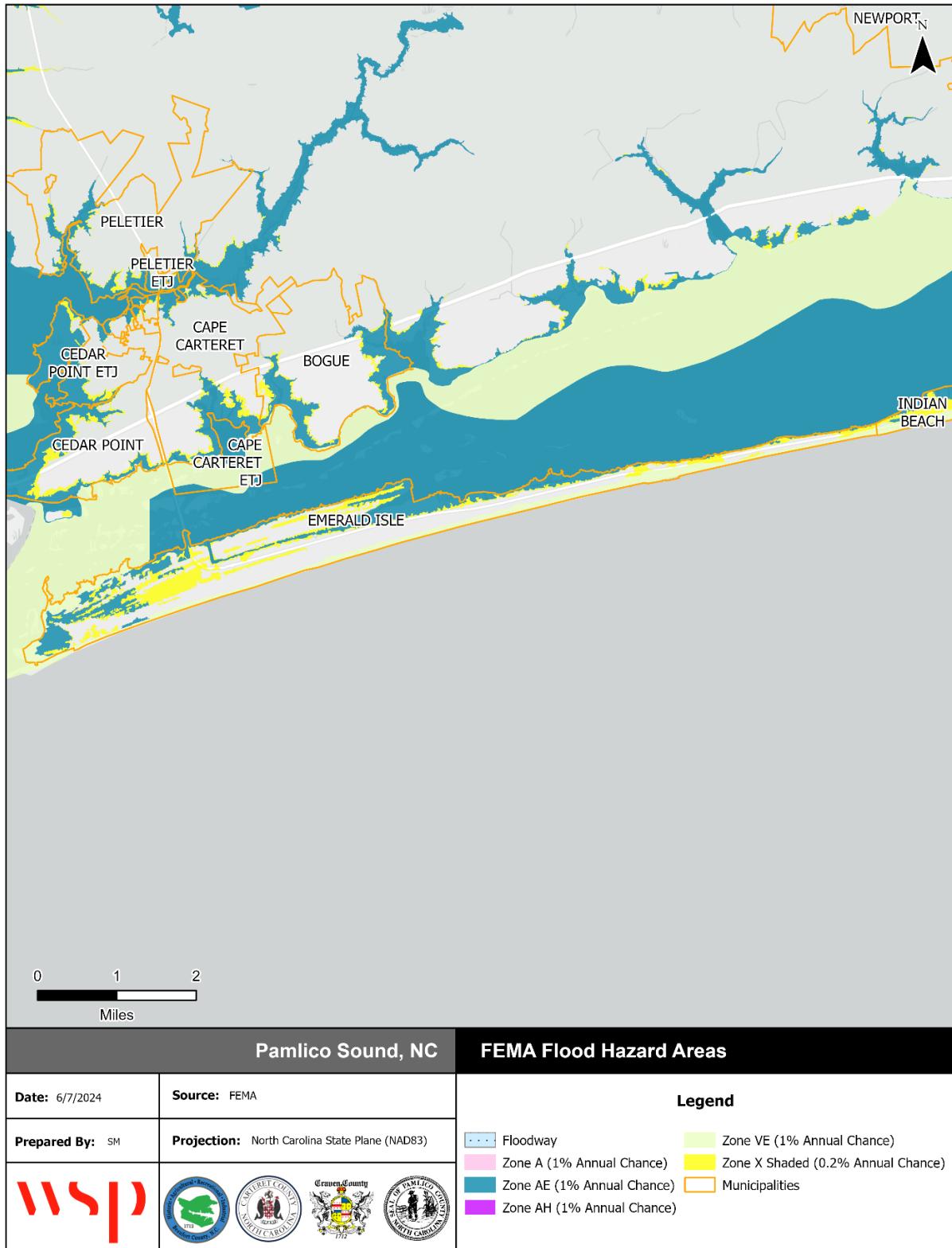
Source: FEMA Effective DFIRM

Figure B.18 - FEMA Flood Hazard Areas, Town of Cedar Point



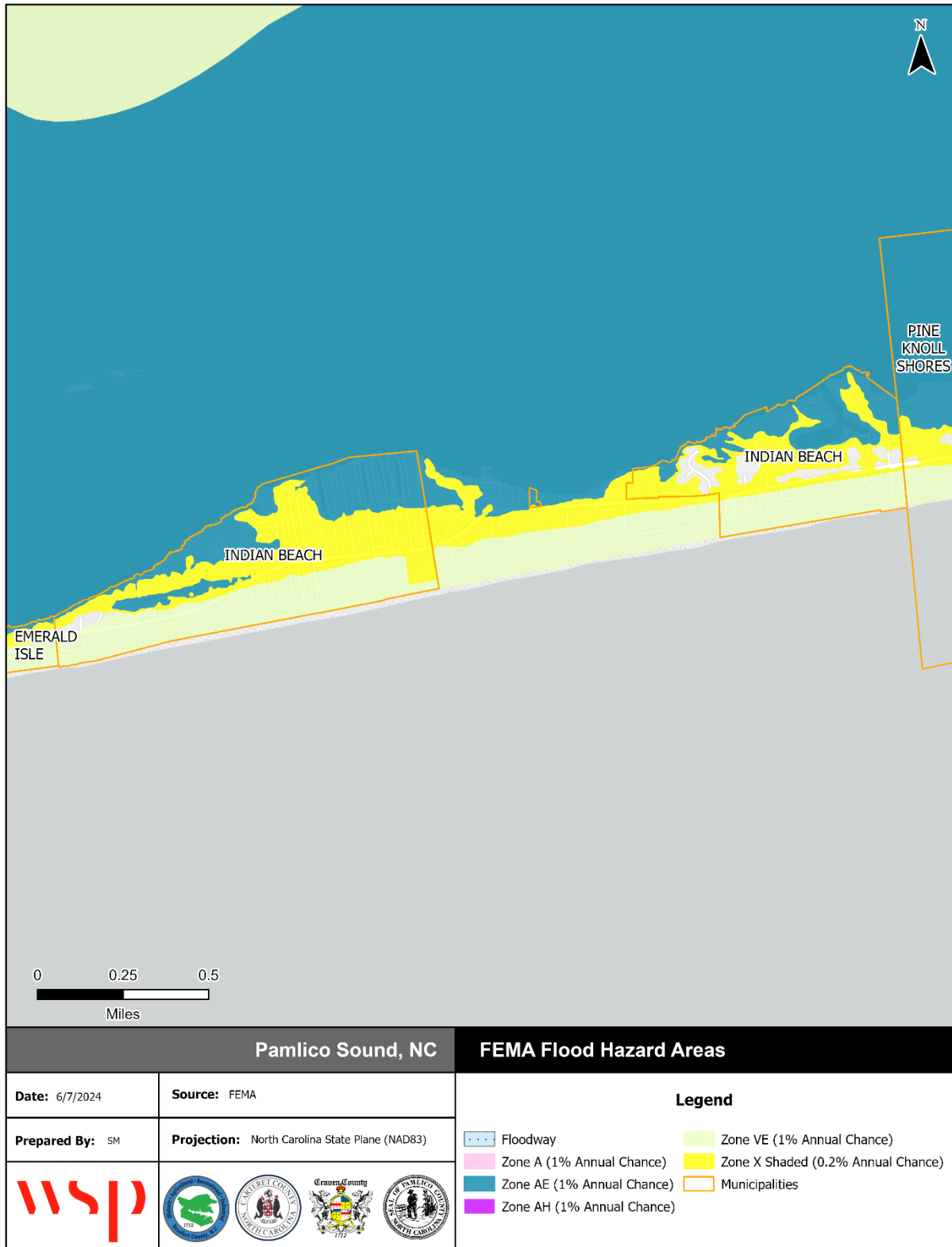
Source: FEMA Effective DFIRM

Figure B.19 – FEMA Flood Hazard Areas, Town of Emerald Isle



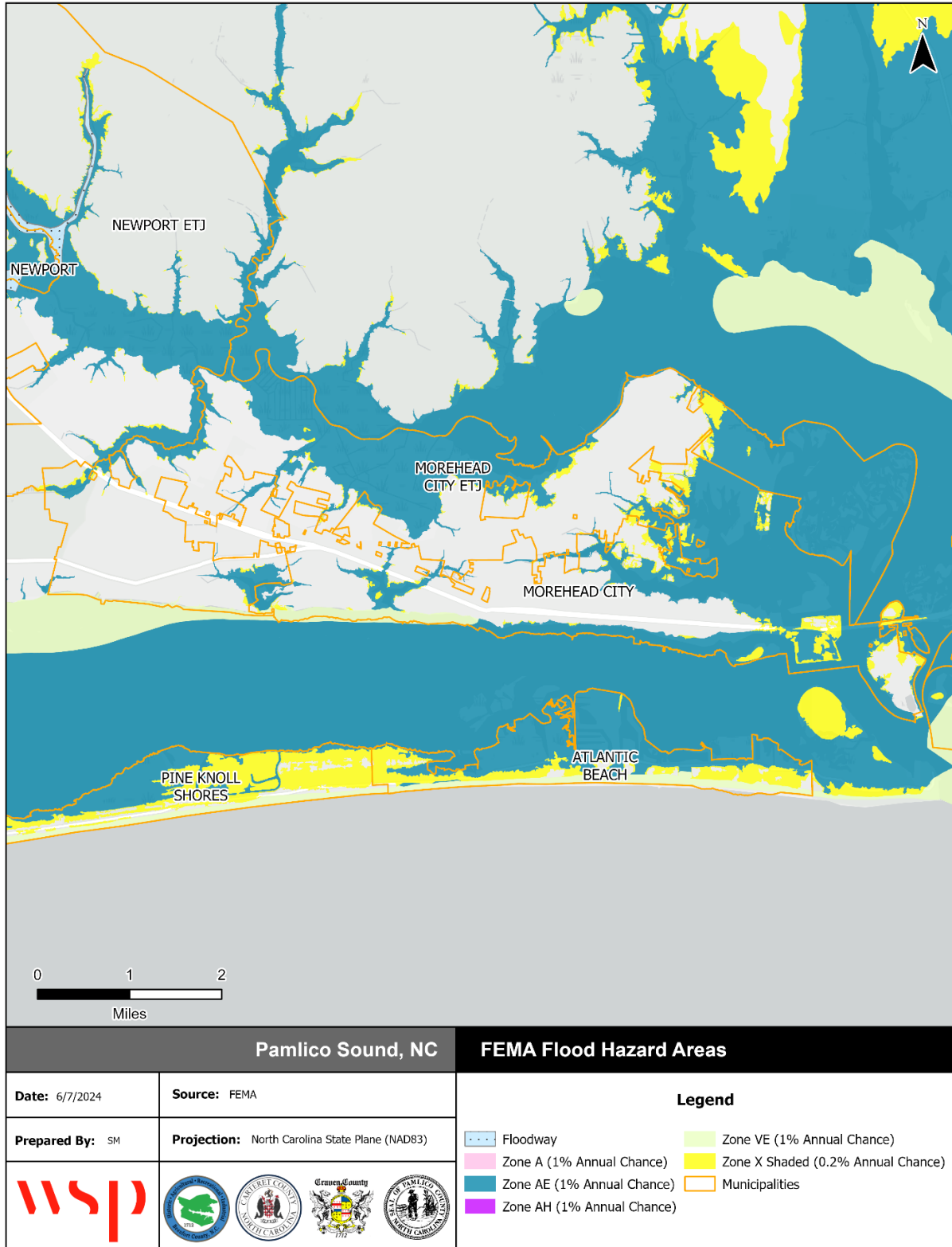
Source: FEMA Effective DFIRM

Figure B.20 – FEMA Flood Hazard Areas, Town of Indian Beach



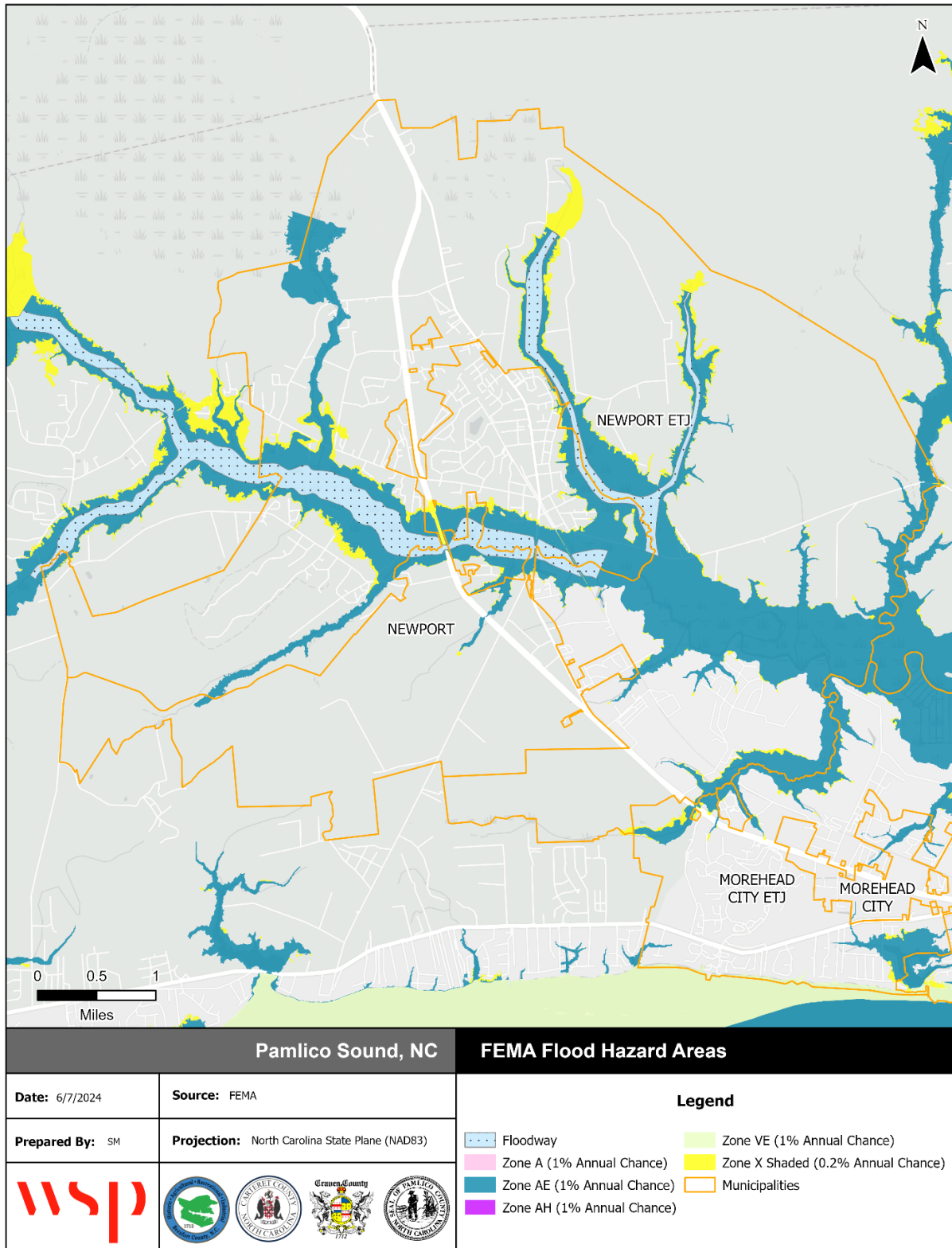
Source: FEMA Effective DFIRM

Figure B.21 – FEMA Flood Hazard Areas, Town of Morehead City



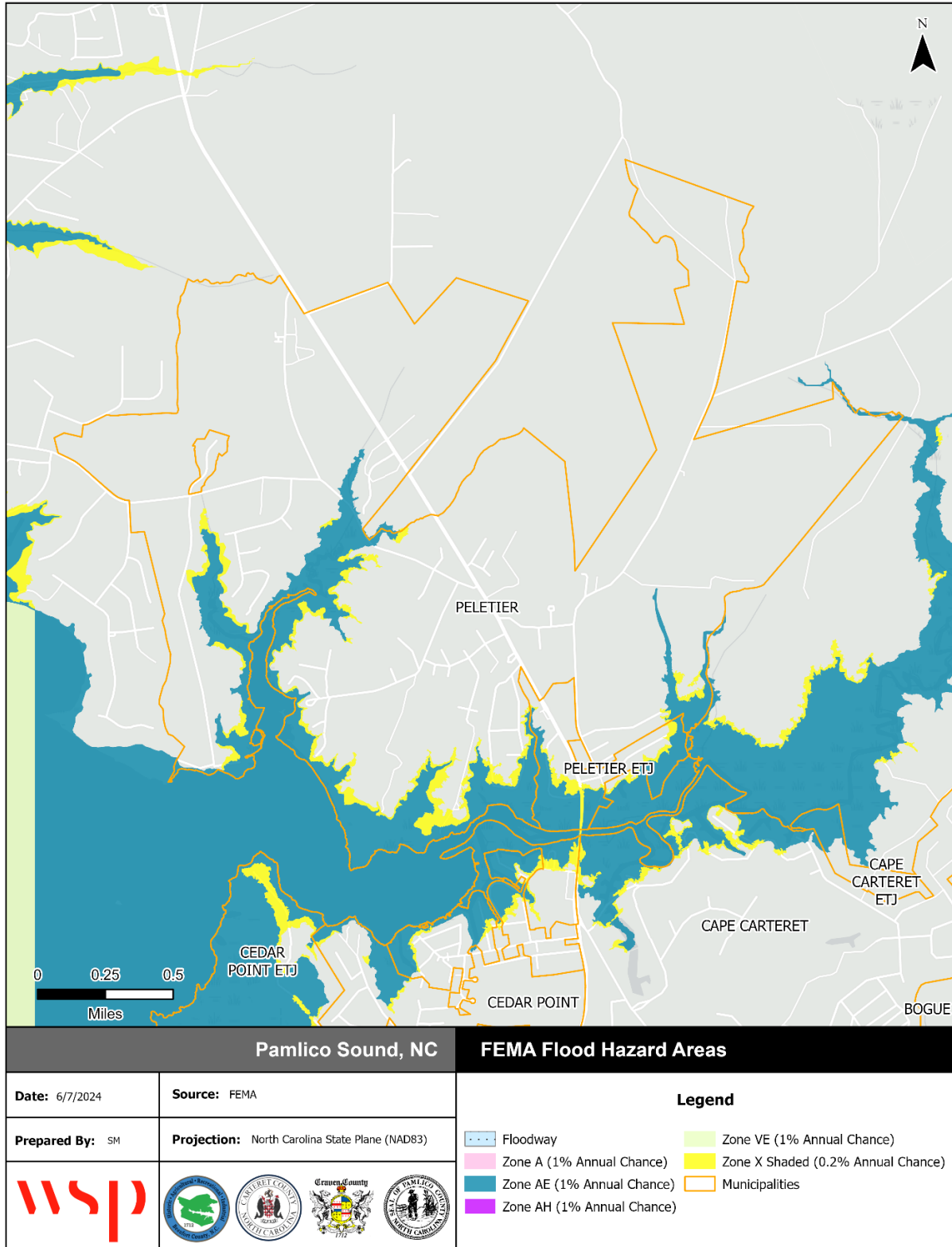
Source: FEMA Effective DFIRM

Figure B.22 – FEMA Flood Hazard Areas, Town of Newport



Source: FEMA Effective DFIRM

Figure B.23 - FEMA Flood Hazard Areas, Town of Peletier



Source: FEMA Effective DFIRM

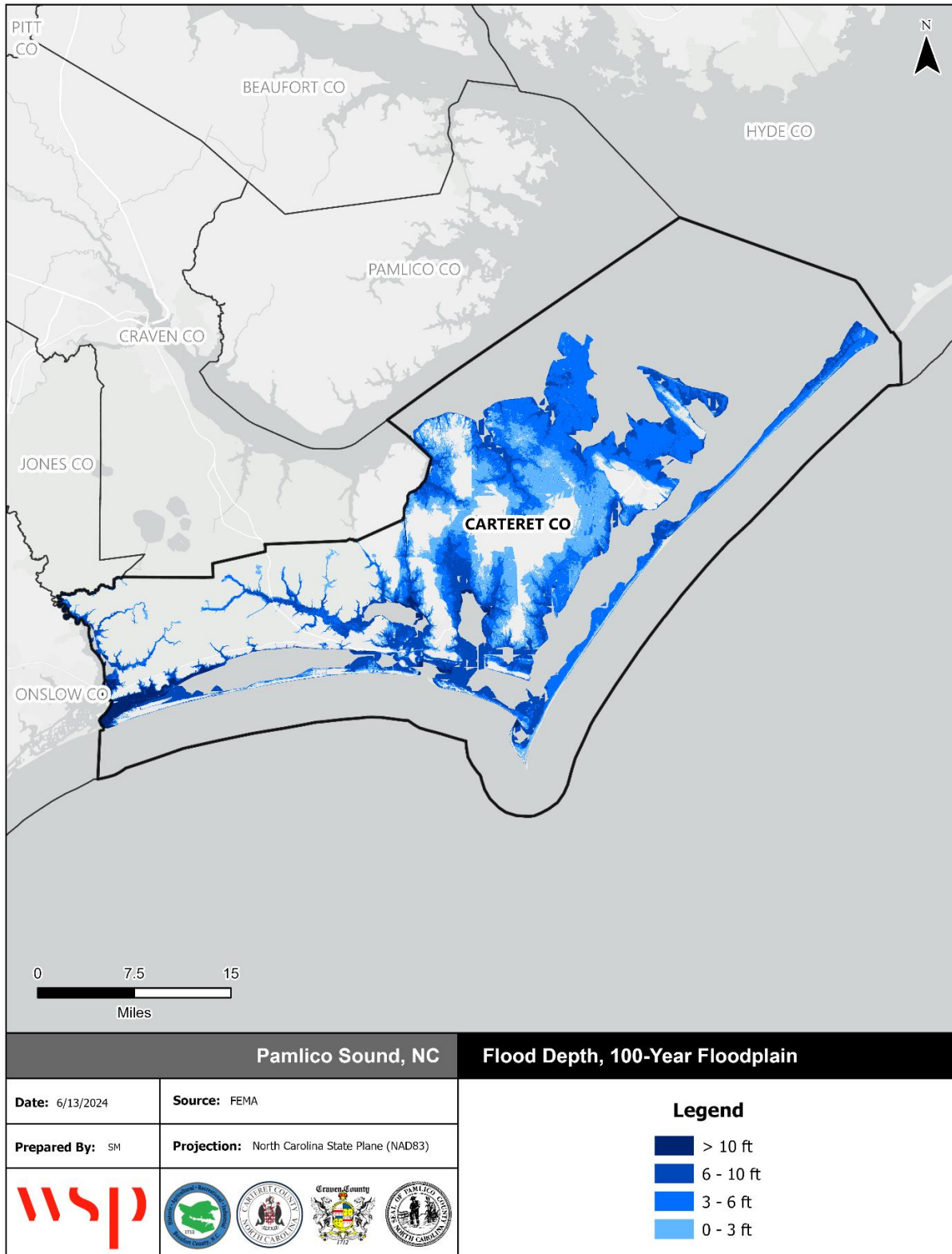
Figure B.24 - FEMA Flood Hazard Areas, Town of Pine Knoll Shores



Source: FEMA Effective DFIRM

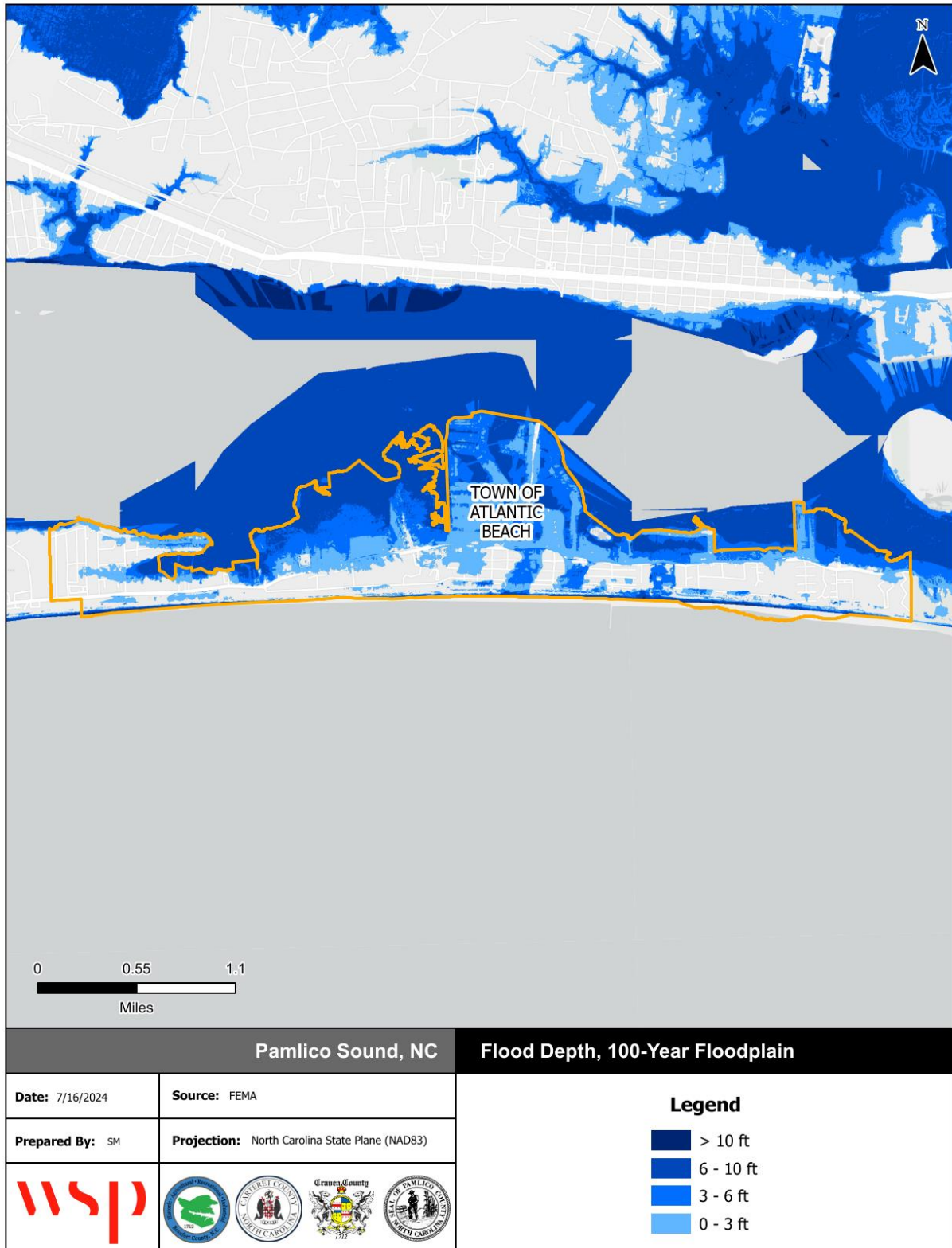


Figure B.25 - Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Carteret County



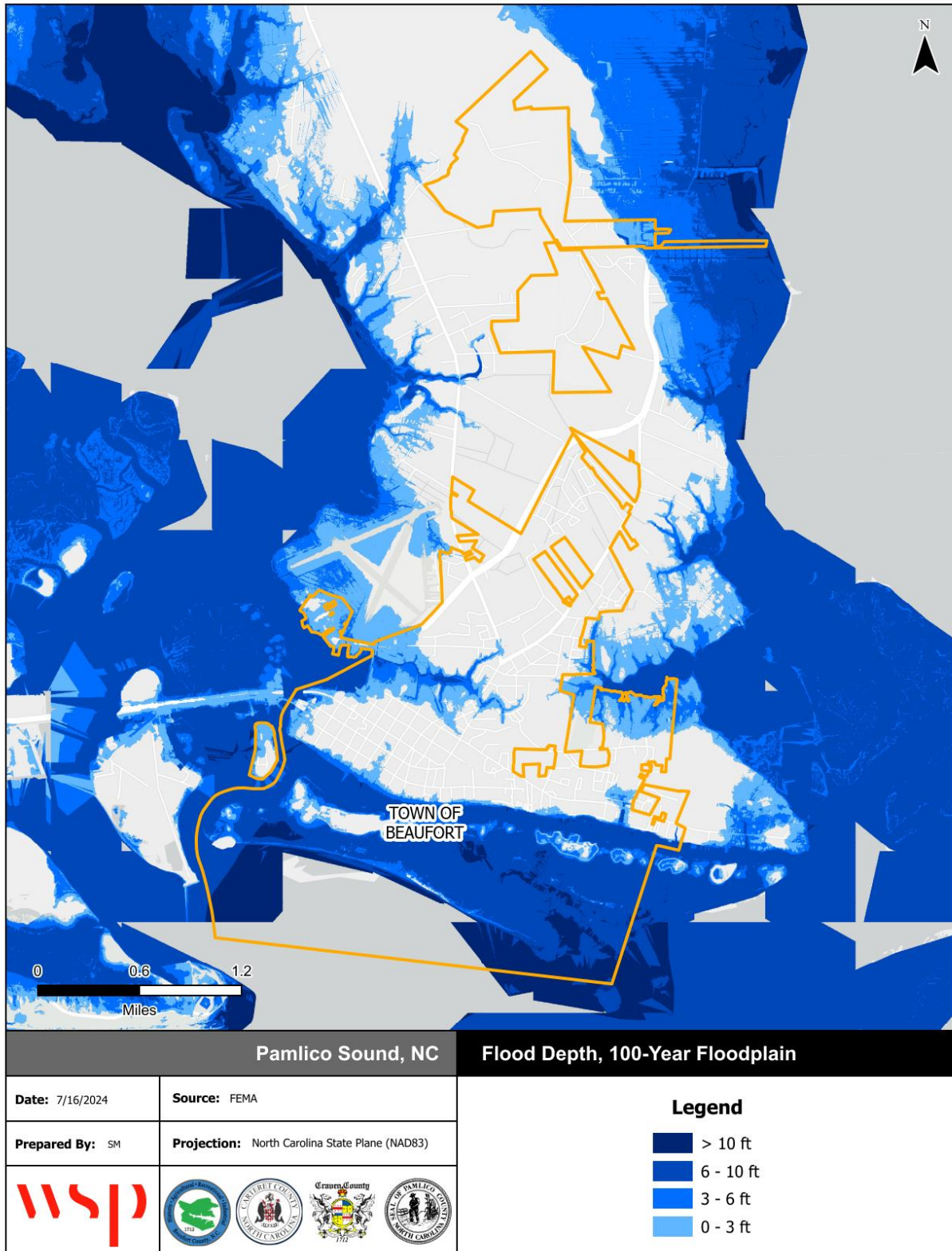
Source: FEMA Effective DFIRM

Figure B.26 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Atlantic Beach



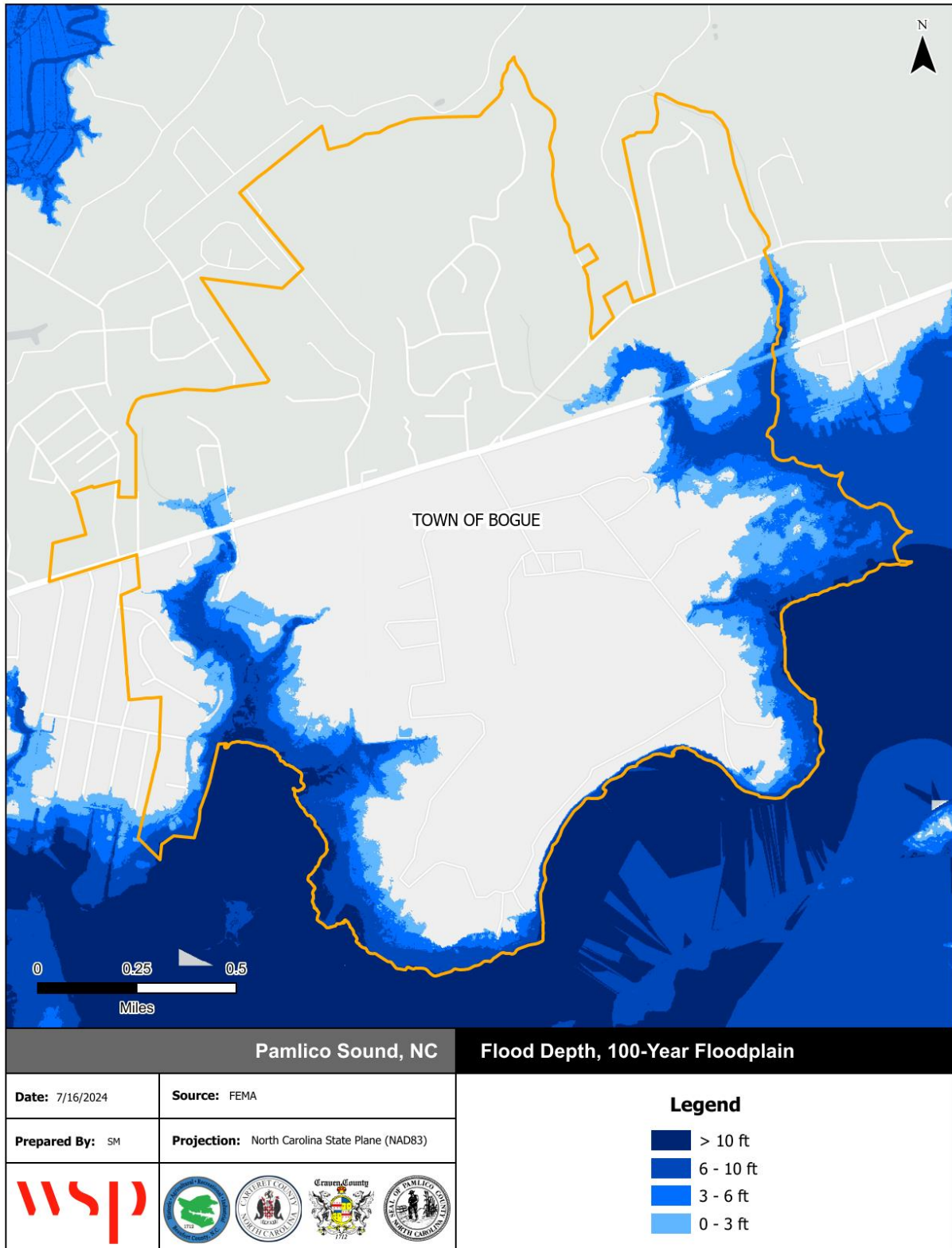
Source: FEMA Effective DFIRM

Figure B.27 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Beaufort



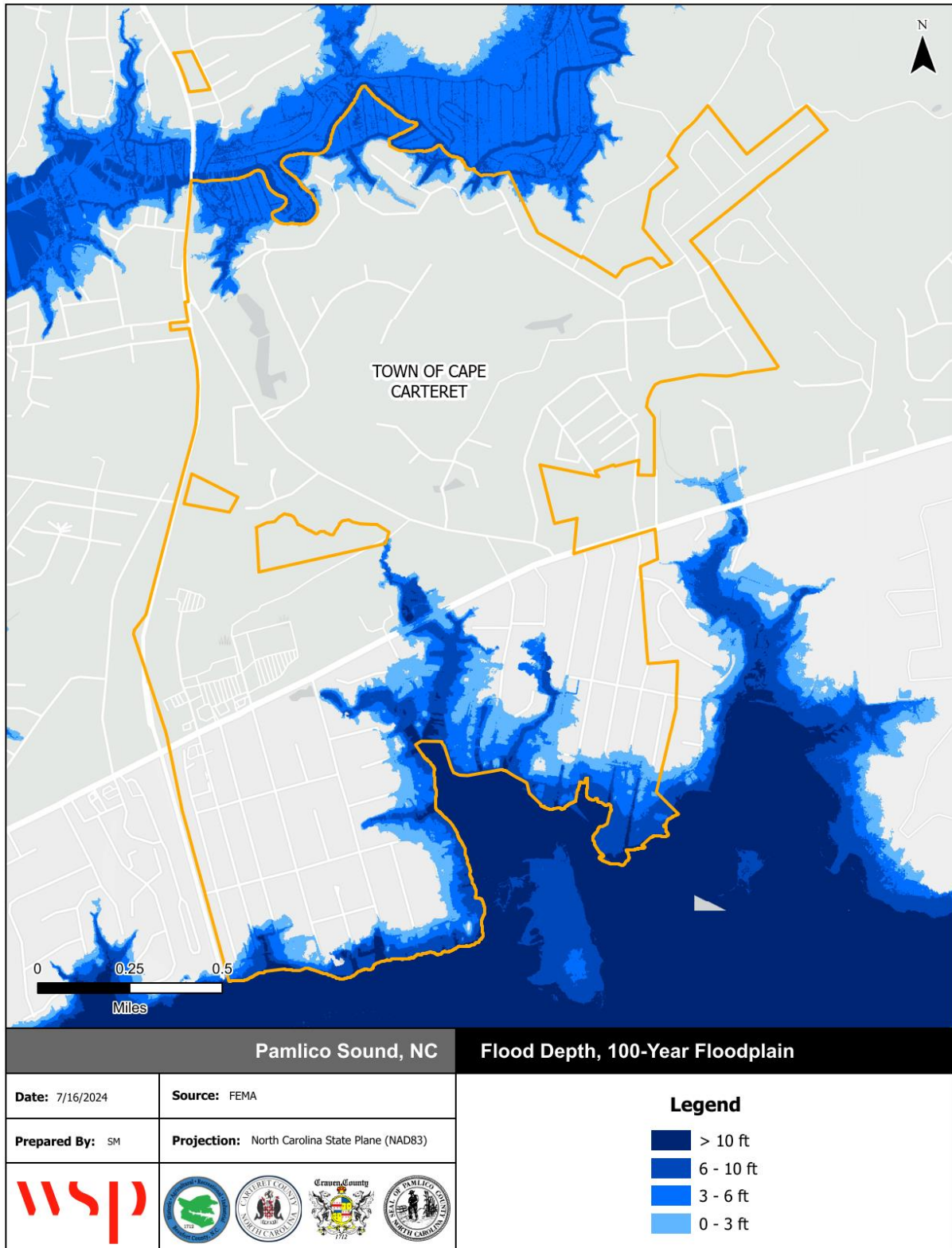
Source: FEMA Effective DFIRM

Figure B.28 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Bogue



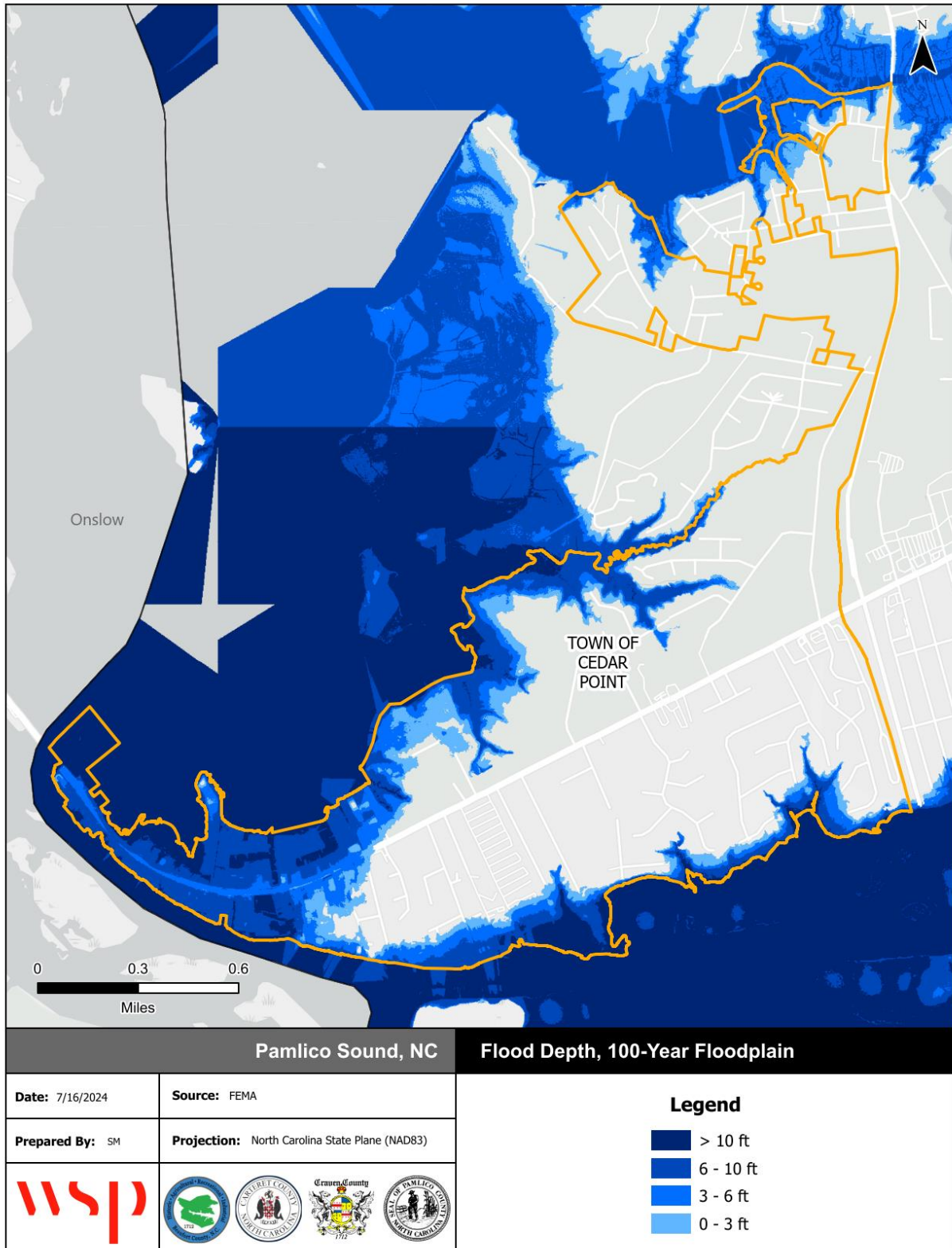
Source: FEMA Effective DFIRM

Figure B.29 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Cape Carteret



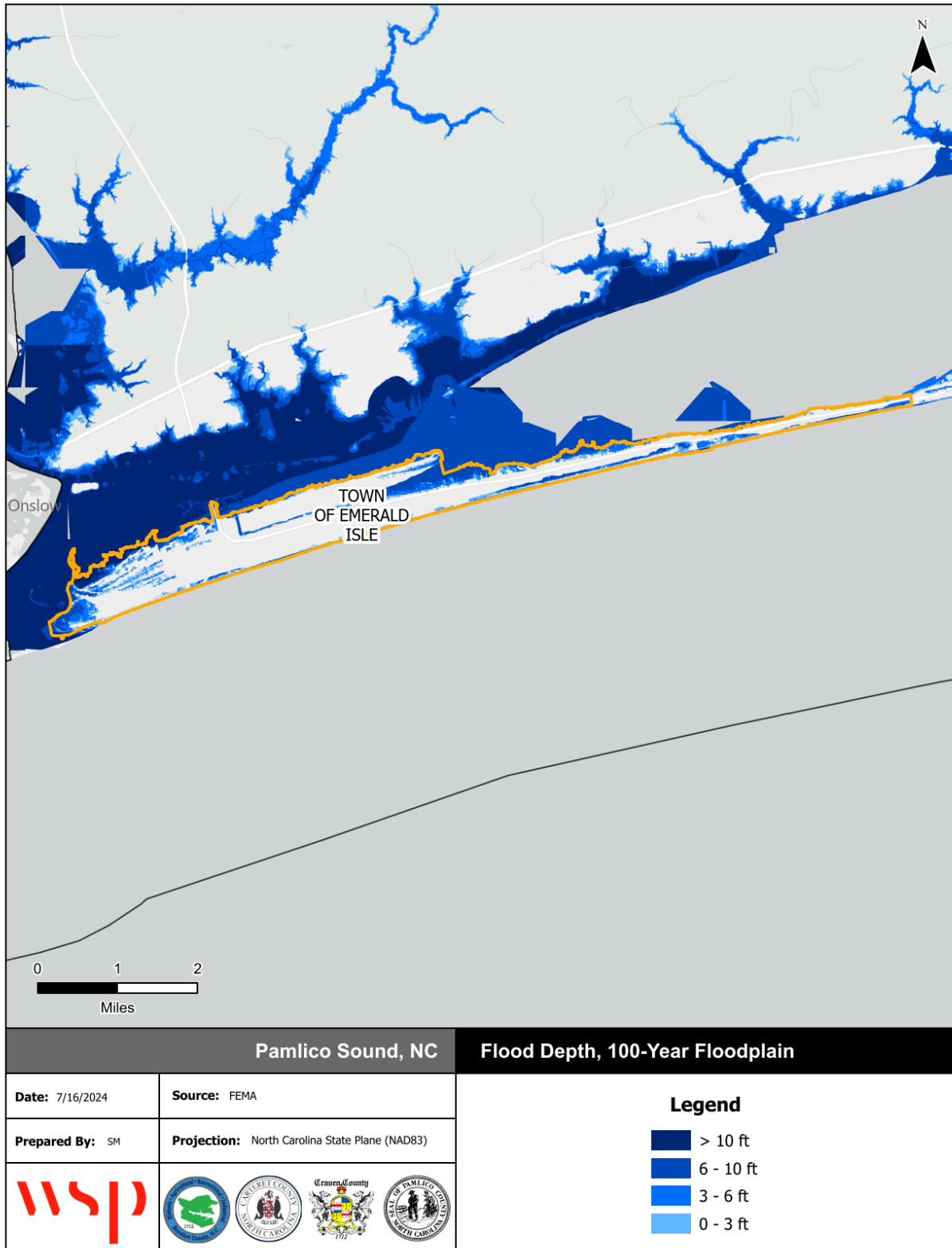
Source: FEMA Effective DFIRM

Figure B.30 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Cedar Point



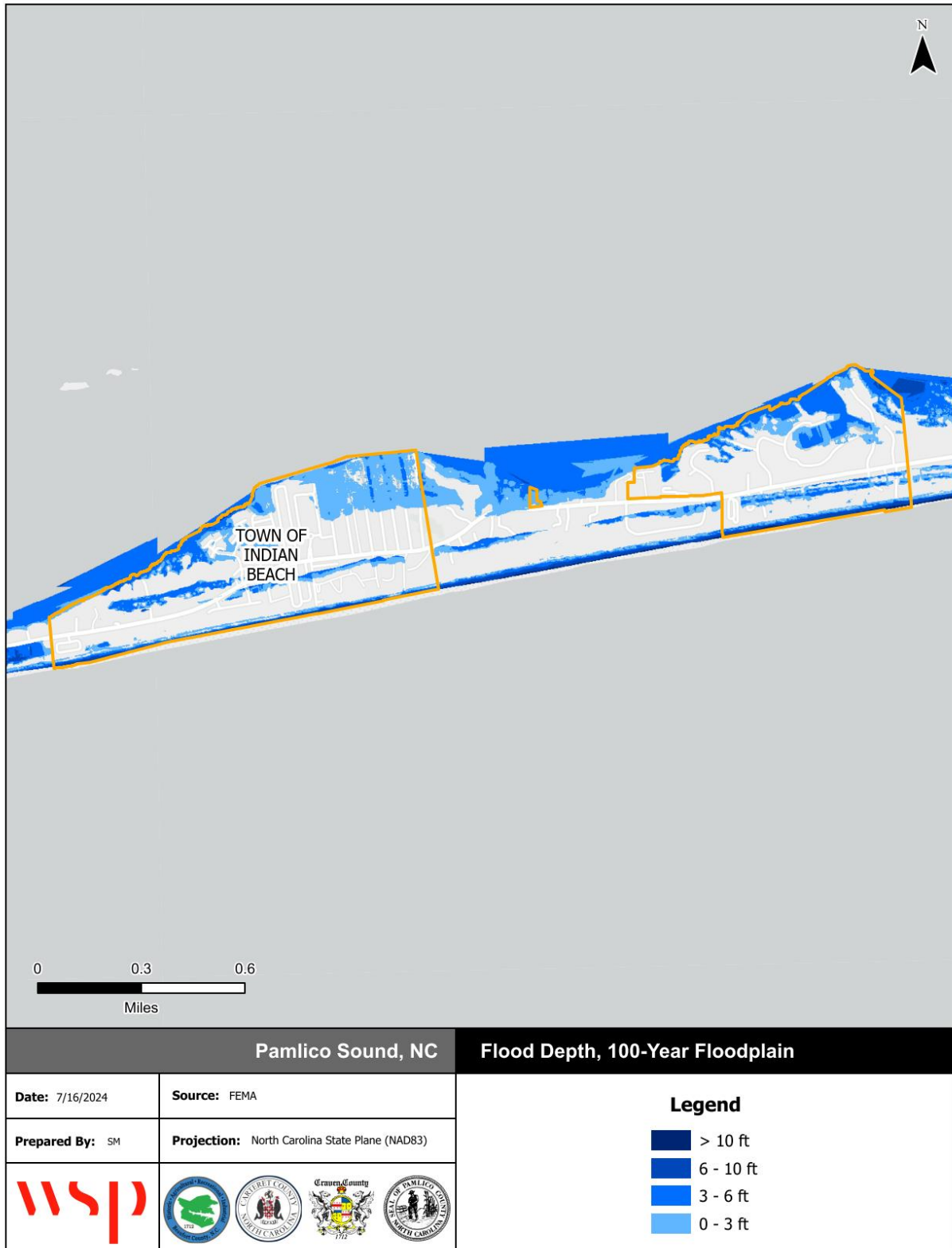
Source: FEMA Effective DFIRM

Figure B.31 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Emerald Isle



Source: FEMA Effective DFIRM

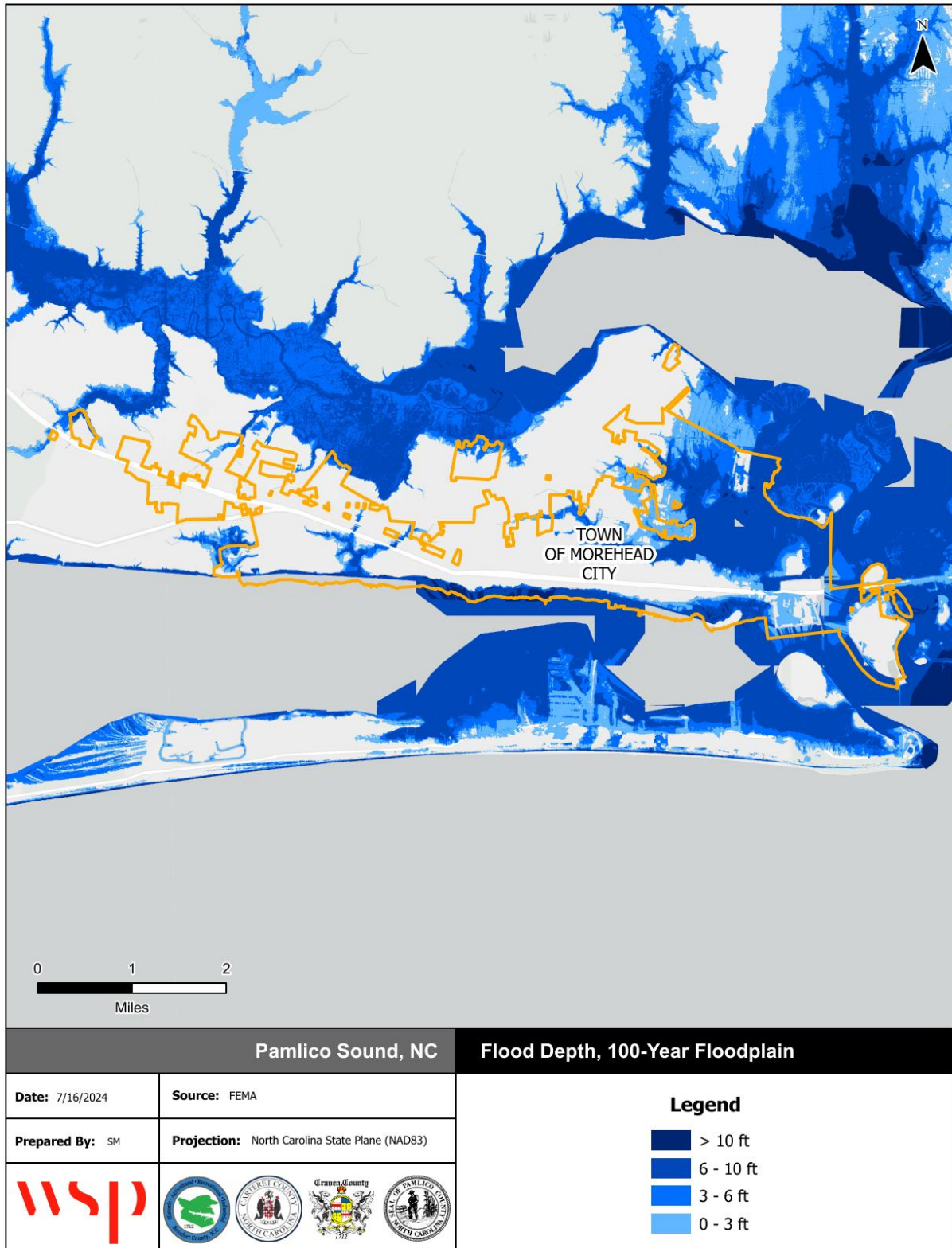
Figure B.32 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Indian Beach



Source: FEMA Effective DFIRM

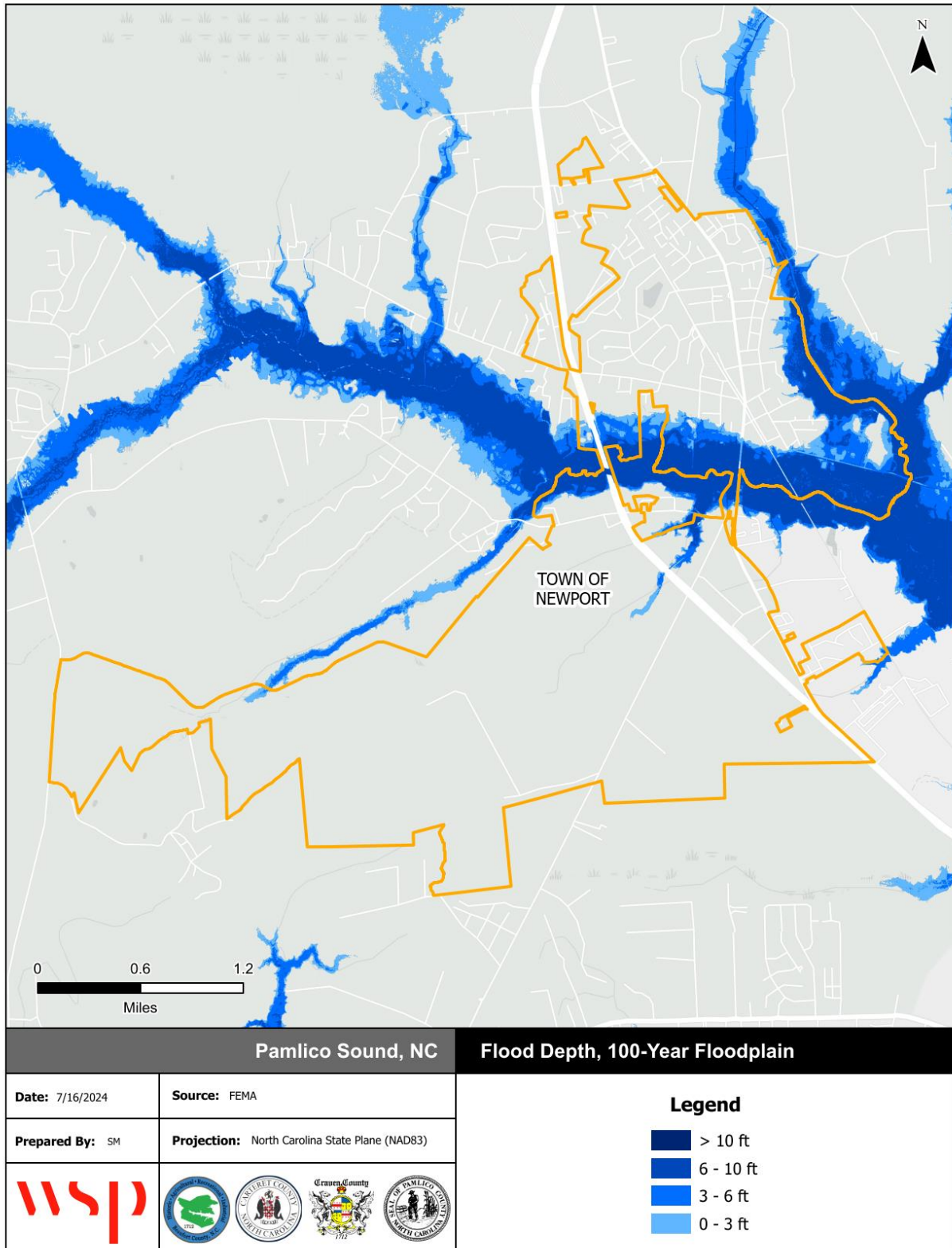


Figure B.33 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Morehead City



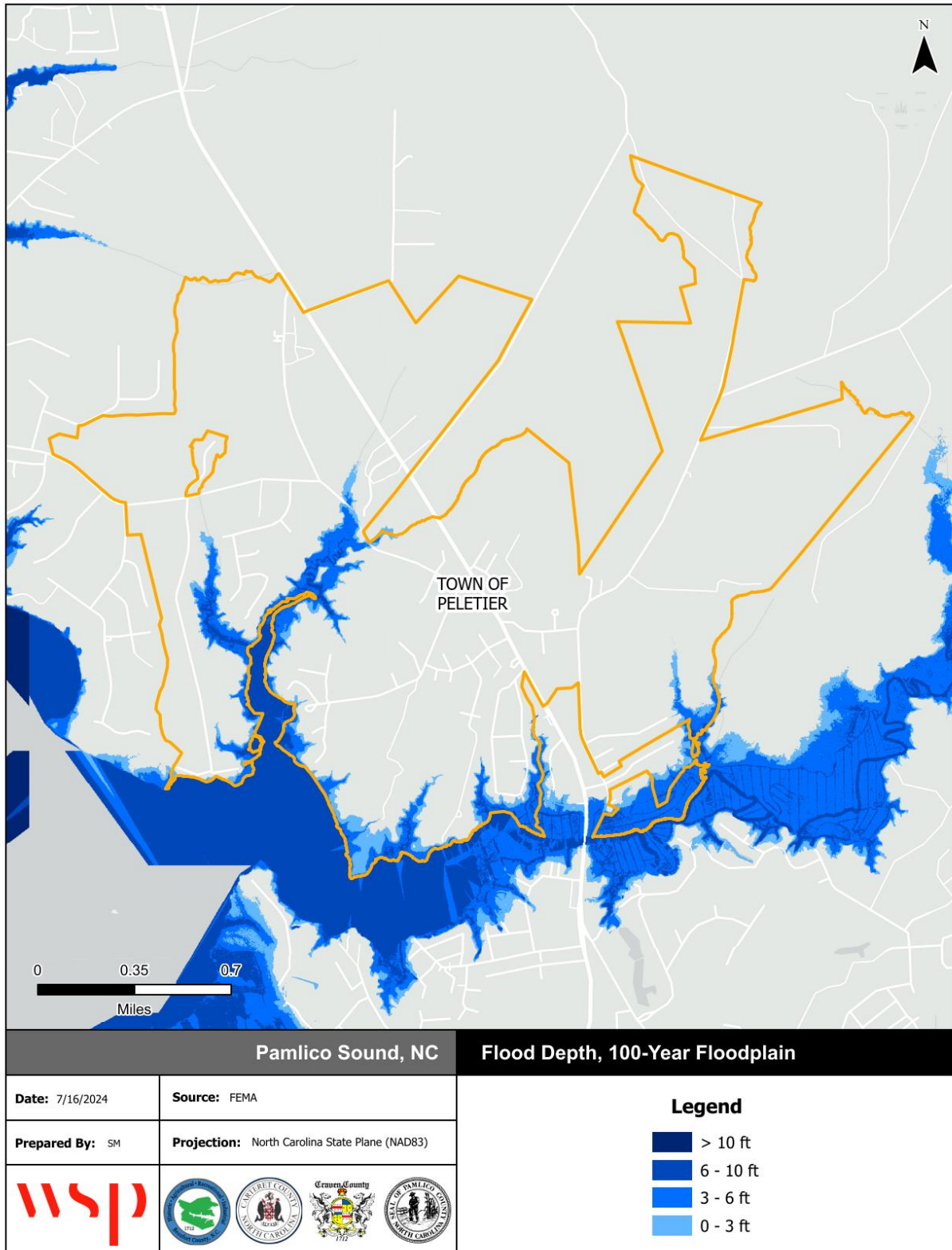
Source: FEMA Effective DFIRM

Figure B.34 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Newport



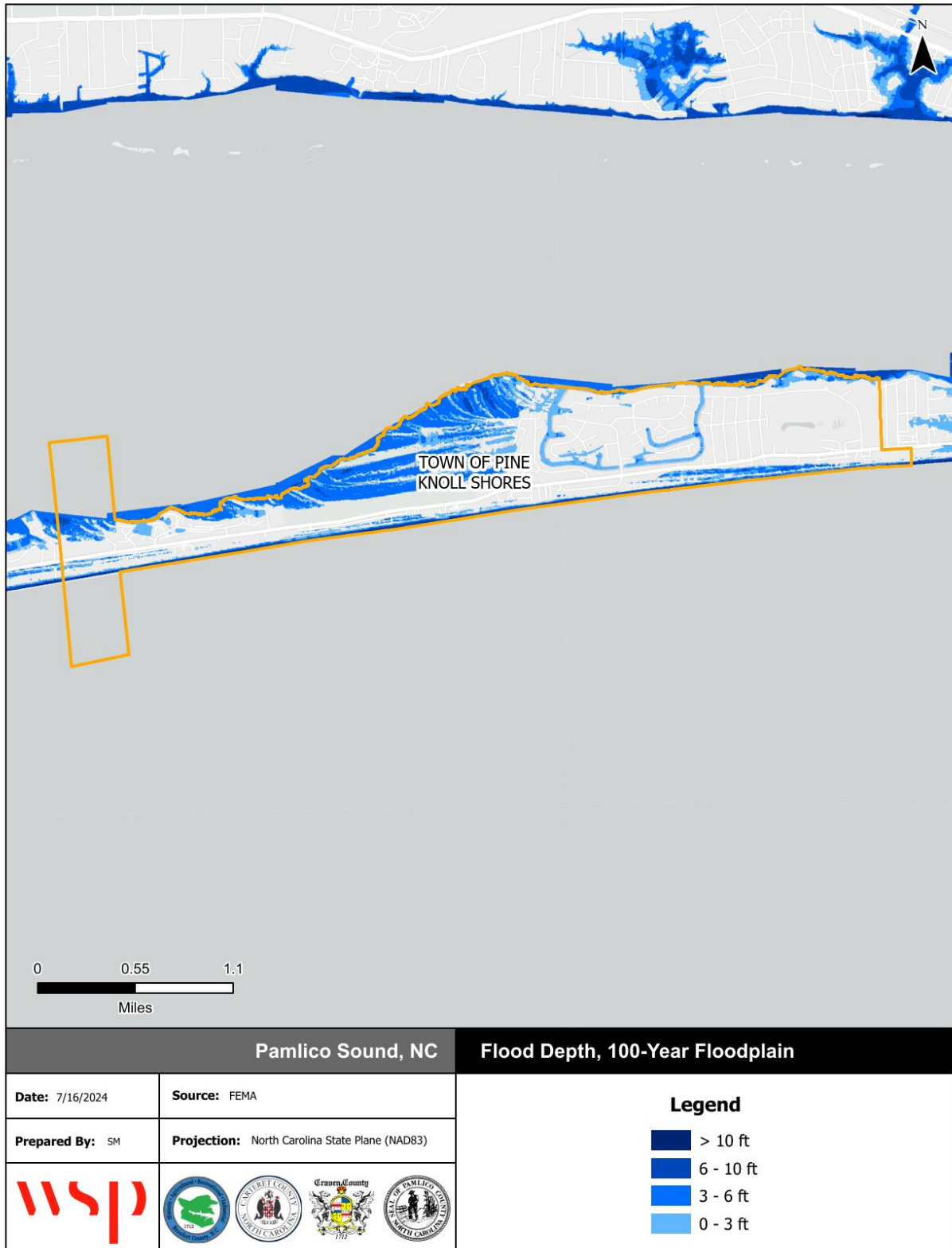
Source: FEMA Effective DFIRM

Figure B.35 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Peletier



Source: FEMA Effective DFIRM

Figure B.36 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Pine Knoll Shores



Source: FEMA Effective DFIRM

**B.2.1.1 FLOOD INSURANCE DATA**

The following tables reflect NFIP emergency and regular entry dates as well as policy and claims data for Carteret County and incorporated areas categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

**Table B.16 - NFIP Program Entry Dates**

| Community                             | Emergency Entry   | Regular Program Entry |
|---------------------------------------|-------------------|-----------------------|
| Carteret County (Unincorporated Area) | November 19, 1971 | May 15, 1980          |
| Town of Atlantic Beach                | July 14, 1972     | March 15, 1977        |
| Town of Beaufort                      | December 3, 1971  | December 1, 1972      |
| Town of Bogue                         | N/A               | May 5, 1997           |
| Town of Cape Carteret                 | December 12, 1973 | April 1, 1977         |
| Town of Cedar Point                   | July 26, 1989     | July 26, 1989         |
| Town of Emerald Isle                  | June 29, 1973     | April 1, 1977         |
| Town of Indian Beach                  | January 13, 1983  | March 4, 1985         |
| Town of Morehead City                 | April 14, 1973    | February 16, 1977     |
| Town of Newport                       | January 17, 1974  | May 15, 1978          |
| Town of Peletier                      | N/A               | March 25, 2008        |
| Town of Pine Knoll Shores             | October 25, 1973  | September 28, 1979    |

**Table B.17 - NFIP Policy and Claims Data by Structure Type**

| Structure Type                             | Policies in Force | Total Premium      | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--|-------------------|--------------------|----------------------|------------------------------|-----------------------------|
| <b>Carteret County Unincorporated Area</b> |                   |                    |                      |                              |                             |
| Single Family                              | 2,543             | \$2,060,386        | \$666,148,000        | 4,267                        | \$69,558,764.67             |
| 2-4 Family                                 | 5                 | \$4,647            | \$1,066,000          | 47                           | \$445,347.08                |
| All Other Residential                      | 204               | \$35,207           | \$23,653,000         | 37                           | \$1,032,745.04              |
| Non-Residential                            | 72                | \$157,574          | \$22,262,000         | 182                          | \$5,467,609.47              |
| <b>Total</b>                               | <b>2,824</b>      | <b>\$2,257,814</b> | <b>\$713,129,000</b> | <b>4,533</b>                 | <b>\$76,504,466.26</b>      |
| <b>Town of Atlantic Beach</b>              |                   |                    |                      |                              |                             |
| Single Family                              | 706               | \$837,070          | \$202,242,000        | 887                          | \$8,838,079.50              |
| 2-4 Family                                 | 125               | \$102,327          | \$29,959,000         | 115                          | \$739,504.31                |
| All Other Residential                      | 1,627             | \$287,518          | \$189,189,000        | 42                           | \$967,038.97                |
| Non-Residential                            | 78                | \$206,416          | \$26,939,000         | 119                          | \$2,645,430.71              |
| <b>Total</b>                               | <b>2,536</b>      | <b>\$1,433,331</b> | <b>\$448,329,000</b> | <b>1,163</b>                 | <b>\$13,190,053.49</b>      |
| <b>Town of Beaufort</b>                    |                   |                    |                      |                              |                             |
| Single Family                              | 622               | \$517,421          | \$186,057,000        | 222                          | \$3,338,456.95              |
| 2-4 Family                                 | 49                | \$37,341           | \$9,689,000          | 4                            | \$28,006.02                 |
| All Other Residential                      | 8                 | \$7,092            | \$2,330,000          | 0                            | \$0.00                      |
| Non-Residential                            | 39                | \$111,937          | \$12,896,000         | 48                           | \$1,099,663.52              |
| <b>Total</b>                               | <b>718</b>        | <b>\$673,791</b>   | <b>\$210,972,000</b> | <b>274</b>                   | <b>\$4,466,126.49</b>       |

**ANNEX B: CARTERET COUNTY**

| Structure Type               | Policies in Force | Total Premium      | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|------------------------------|-------------------|--------------------|----------------------|------------------------------|-----------------------------|
| <b>Town of Bogue</b>         |                   |                    |                      |                              |                             |
| Single Family                | 32                | \$35,538           | \$10,165,000         | 19                           | \$656,800.43                |
| 2-4 Family                   | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| All Other Residential        | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| Non-Residential              | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                 | <b>32</b>         | <b>\$35,538</b>    | <b>\$10,165,000</b>  | <b>19</b>                    | <b>\$656,800.43</b>         |
| <b>Town of Cape Carteret</b> |                   |                    |                      |                              |                             |
| Single Family                | 150               | \$151,267          | \$45,074,000         | 184                          | \$2,435,908.99              |
| 2-4 Family                   | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| All Other Residential        | 0                 | \$0                | \$0                  | 1                            | \$13,540.60                 |
| Non-Residential              | 3                 | \$4,830            | \$1,818,000          | 3                            | \$404,638.22                |
| <b>Total</b>                 | <b>153</b>        | <b>\$156,097</b>   | <b>\$46,892,000</b>  | <b>188</b>                   | <b>\$2,854,087.81</b>       |
| <b>Town of Cedar Point</b>   |                   |                    |                      |                              |                             |
| Single Family                | 144               | \$114,614          | \$43,129,000         | 118                          | \$1,933,014.89              |
| 2-4 Family                   | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| All Other Residential        | 97                | \$8,977            | \$9,742,000          | 6                            | \$612,023.12                |
| Non-Residential              | 12                | \$18,875           | \$3,462,000          | 11                           | \$269,476.62                |
| <b>Total</b>                 | <b>253</b>        | <b>\$142,466</b>   | <b>\$56,333,000</b>  | <b>135</b>                   | <b>\$2,814,514.63</b>       |
| <b>Town of Emerald Isle</b>  |                   |                    |                      |                              |                             |
| Single Family                | 1,191             | \$989,352          | \$371,464,000        | 1,320                        | \$9,052,281.78              |
| 2-4 Family                   | 261               | \$209,248          | \$63,710,000         | 434                          | \$3,090,378.25              |
| All Other Residential        | 651               | \$79,104           | \$100,814,000        | 14                           | \$283,870.09                |
| Non-Residential              | 18                | \$26,074           | \$7,745,000          | 28                           | \$518,349.07                |
| <b>Total</b>                 | <b>2,121</b>      | <b>\$1,303,778</b> | <b>\$543,733,000</b> | <b>1,796</b>                 | <b>\$12,944,879.19</b>      |
| <b>Town of Indian Beach</b>  |                   |                    |                      |                              |                             |
| Single Family                | 73                | \$48,927           | \$19,800,000         | 39                           | \$222,903.52                |
| 2-4 Family                   | 1                 | \$726              | \$350,000            | 0                            | \$0.00                      |
| All Other Residential        | 615               | \$41,467           | \$139,365,000        | 3                            | \$0.00                      |
| Non-Residential              | 5                 | \$2,632            | \$1,841,000          | 2                            | \$0.00                      |
| <b>Total</b>                 | <b>694</b>        | <b>\$93,752</b>    | <b>\$161,356,000</b> | <b>44</b>                    | <b>\$222,903.52</b>         |
| <b>Town of Morehead City</b> |                   |                    |                      |                              |                             |
| Single Family                | 947               | \$709,303          | \$287,206,000        | 443                          | \$4,453,405.84              |
| 2-4 Family                   | 52                | \$29,796           | \$13,138,000         | 5                            | \$71,373.45                 |
| All Other Residential        | 241               | \$61,894           | \$64,263,000         | 9                            | \$541,178.01                |
| Non-Residential              | 61                | \$145,887          | \$26,329,000         | 57                           | \$3,654,034.85              |
| <b>Total</b>                 | <b>1,301</b>      | <b>\$946,880</b>   | <b>\$390,936,000</b> | <b>514</b>                   | <b>\$8,719,992.15</b>       |
| <b>Town of Newport</b>       |                   |                    |                      |                              |                             |
| Single Family                | 126               | \$75,012           | \$35,777,000         | 90                           | \$4,708,558.29              |
| 2-4 Family                   | 2                 | \$1,030            | \$332,000            | 2                            | \$66,659.20                 |
| All Other Residential        | 2                 | \$530              | \$172,000            | 0                            | \$0.00                      |
| Non-Residential              | 1                 | \$387              | \$70,000             | 4                            | \$759,667.48                |
| <b>Total</b>                 | <b>131</b>        | <b>\$76,959</b>    | <b>\$36,351,000</b>  | <b>96</b>                    | <b>\$5,534,884.97</b>       |

**ANNEX B: CARTERET COUNTY**

| Structure Type                   | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|----------------------------------|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Town of Peletier</b>          |                   |                  |                      |                              |                             |
| Single Family                    | 17                | \$8,484          | \$4,902,000          | 4                            | \$20,783.64                 |
| 2-4 Family                       | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| All Other Residential            | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| Non-Residential                  | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                     | <b>17</b>         | <b>\$8,484</b>   | <b>\$4,902,000</b>   | <b>4</b>                     | <b>\$20,783.64</b>          |
| <b>Town of Pine Knoll Shores</b> |                   |                  |                      |                              |                             |
| Single Family                    | 352               | \$302,713        | \$110,726,000        | 236                          | \$1,162,491.36              |
| 2-4 Family                       | 47                | \$33,168         | \$10,586,000         | 7                            | \$107,192.06                |
| All Other Residential            | 468               | \$102,919        | \$97,179,000         | 58                           | \$848,496.40                |
| Non-Residential                  | 30                | \$51,405         | \$8,886,000          | 21                           | \$156,470.83                |
| <b>Total</b>                     | <b>897</b>        | <b>\$490,205</b> | <b>\$227,377,000</b> | <b>322</b>                   | <b>\$2,274,650.65</b>       |

Source: FEMA Community Information System, accessed January 2025

**Table B.18 - NFIP Policy and Claims Data by Flood Zone**

| Flood Zone                                 | Policies in Force | Total Premium      | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--|-------------------|--------------------|----------------------|------------------------------|-----------------------------|
| <b>Carteret County Unincorporated Area</b> |                   |                    |                      |                              |                             |
| A01-30 & AE Zones                          | 2,175             | \$1,902,441        | \$548,145,000        | 3,765                        | \$68,093,326.36             |
| A Zones                                    | 1                 | \$978              | \$206,000            | 83                           | \$955,531.74                |
| V01-30 & VE Zones                          | 14                | \$15,043           | \$3,480,000          | 160                          | \$1,813,202.94              |
| D Zones                                    | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| B, C & X Zone                              |                   |                    |                      |                              |                             |
| Standard                                   | 634               | \$339,352          | \$161,298,000        | 292                          | \$3,387,452.65              |
| Preferred                                  | 0                 | \$0                | \$0                  | 163                          | \$1,700,466.60              |
| <b>Total</b>                               | <b>2,824</b>      | <b>\$2,257,814</b> | <b>\$713,129,000</b> | <b>4,469</b>                 | <b>\$76,000,246.42</b>      |
| <b>Town of Atlantic Beach</b>              |                   |                    |                      |                              |                             |
| A01-30 & AE Zones                          | 872               | \$856,130          | \$177,100,000        | 767                          | \$10,875,165.34             |
| A Zones                                    | 1                 | \$2,236            | \$250,000            | 8                            | \$20,066.08                 |
| AO Zones                                   | 1                 | \$2,334            | \$325,000            | 15                           | \$157,505.76                |
| V01-30 & VE Zones                          | 88                | \$95,424           | \$24,517,000         | 82                           | \$348,087.35                |
| B, C & X Zone                              |                   |                    |                      |                              |                             |
| Standard                                   | 1,573             | \$476,476          | \$245,817,000        | 208                          | \$1,385,742.18              |
| Preferred                                  | 0                 | \$0                | \$0                  | 80                           | \$403,486.78                |
| <b>Total</b>                               | <b>2,535</b>      | <b>\$1,432,600</b> | <b>\$448,009,000</b> | <b>1,160</b>                 | <b>\$13,190,053.49</b>      |
| <b>Town of Beaufort</b>                    |                   |                    |                      |                              |                             |
| A01-30 & AE Zones                          | 456               | \$483,187          | \$125,497,000        | 231                          | \$3,848,503.64              |
| B, C & X Zone                              |                   |                    |                      |                              |                             |
| Standard                                   | 262               | \$190,604          | \$85,475,000         | 10                           | \$298,796.45                |
| Preferred                                  | 0                 | \$0                | \$0                  | 32                           | \$321,616.63                |
| <b>Total</b>                               | <b>718</b>        | <b>\$673,791</b>   | <b>\$210,972,000</b> | <b>273</b>                   | <b>\$4,468,916.72</b>       |

**ANNEX B: CARTERET COUNTY**

| <b>Flood Zone</b>            | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|------------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Bogue</b>         |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 19                       | \$24,896             | \$5,772,000               | 12                                  | \$531,396.33                       |
| B, C & X Zone                |                          |                      |                           |                                     |                                    |
| <b>Standard</b>              | 13                       | \$10,642             | \$4,393,000               | 5                                   | \$117,475.47                       |
| <b>Preferred</b>             | 0                        | \$0                  | \$0                       | 2                                   | \$7,928.63                         |
| <b>Total</b>                 | <b>32</b>                | <b>\$35,538</b>      | <b>\$10,165,000</b>       | <b>19</b>                           | <b>\$656,800.43</b>                |
| <b>Town of Cape Carteret</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 101                      | \$111,036            | \$29,851,000              | 140                                 | \$2,295,769.83                     |
| V01-30 & VE Zones            | 1                        | \$2,468              | \$282,000                 | 5                                   | \$75,267.29                        |
| B, C & X Zone                |                          |                      |                           |                                     |                                    |
| Standard                     | 51                       | \$42,593             | \$16,759,000              | 15                                  | \$166,042.64                       |
| Preferred                    | 0                        | \$0                  | \$0                       | 26                                  | \$246,421.83                       |
| <b>Total</b>                 | <b>153</b>               | <b>\$156,097</b>     | <b>\$46,892,000</b>       | <b>186</b>                          | <b>\$2,783,501.59</b>              |
| <b>Town of Cedar Point</b>   |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 142                      | \$102,084            | \$31,440,000              | 107                                 | \$2,465,384.72                     |
| A Zones                      | 1                        | \$1,516              | \$87,000                  | 0                                   | \$0.00                             |
| V01-30 & VE Zones            | 0                        | \$0                  | \$0                       | 15                                  | \$176,228.95                       |
| B, C & X Zone                |                          |                      |                           |                                     |                                    |
| Standard                     | 110                      | \$38,866             | \$24,806,000              | 2                                   | \$60,322.10                        |
| Preferred                    | 0                        | \$0                  | \$0                       | 11                                  | \$112,578.86                       |
| <b>Total</b>                 | <b>253</b>               | <b>\$142,466</b>     | <b>\$56,333,000</b>       | <b>135</b>                          | <b>\$2,814,514.63</b>              |
| <b>Town of Emerald Isle</b>  |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 473                      | \$323,967            | \$133,835,000             | 400                                 | \$3,606,572.18                     |
| V01-30 & VE Zones            | 115                      | \$106,700            | \$33,091,000              | 246                                 | \$1,668,299.23                     |
| B, C & X Zone                |                          |                      |                           |                                     |                                    |
| Standard                     | 1,533                    | \$873,111            | \$376,807,000             | 748                                 | \$5,706,290.88                     |
| Preferred                    | 0                        | \$0                  | \$0                       | 401                                 | \$1,969,939.84                     |
| <b>Total</b>                 | <b>2,121</b>             | <b>\$1,303,778</b>   | <b>\$543,733,000</b>      | <b>1,795</b>                        | <b>\$12,951,102.13</b>             |
| <b>Town of Indian Beach</b>  |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 144                      | \$35,326             | \$28,948,000              | 30                                  | \$195,336.49                       |
| V01-30 & VE Zones            | 11                       | \$5,492              | \$3,259,000               | 3                                   | \$0.00                             |
| B, C & X Zone                |                          |                      |                           |                                     |                                    |
| <b>Standard</b>              | 539                      | \$52,934             | \$129,149,000             | 6                                   | \$16,303.98                        |
| <b>Preferred</b>             | 0                        | \$0                  | \$0                       | 5                                   | \$11,263.05                        |
| <b>Total</b>                 | <b>694</b>               | <b>\$93,752</b>      | <b>\$161,356,000</b>      | <b>44</b>                           | <b>\$222,903.52</b>                |
| <b>Town of Morehead City</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 828                      | \$609,643            | \$229,794,000             | 381                                 | \$7,235,131.09                     |
| V01-30 & VE Zones            | 6                        | \$6,431              | \$1,356,000               | 6                                   | \$24,645.47                        |
| B, C & X Zone                |                          |                      |                           |                                     |                                    |
| Standard                     | 467                      | \$330,806            | \$159,786,000             | 43                                  | \$444,410.29                       |
| Preferred                    | 0                        | \$0                  | \$0                       | 84                                  | \$1,015,805.30                     |
| <b>Total</b>                 | <b>1,301</b>             | <b>\$946,880</b>     | <b>\$390,936,000</b>      | <b>514</b>                          | <b>\$8,719,992.15</b>              |



**ANNEX B: CARTERET COUNTY**

| Flood Zone                       | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|----------------------------------|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Town of Newport</b>           |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                | 53                | \$34,504         | \$12,224,000         | 69                           | \$4,922,438.11              |
| A Zones                          | 0                 | \$0              | \$0                  | 5                            | \$91,848.47                 |
| B, C & X Zone                    |                   |                  |                      |                              |                             |
| Standard                         | 78                | \$42,455         | \$24,127,000         | 5                            | \$313,291.23                |
| Preferred                        | 0                 | \$0              | \$0                  | 17                           | \$207,307.16                |
| <b>Total</b>                     | <b>131</b>        | <b>\$76,959</b>  | <b>\$36,351,000</b>  | <b>96</b>                    | <b>\$5,534,884.97</b>       |
| <b>Town of Peletier</b>          |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                | 8                 | \$4,815          | \$1,835,000          | 3                            | \$7,420.16                  |
| B, C & X Zone                    |                   |                  |                      |                              |                             |
| Standard                         | 9                 | \$3,669          | \$3,067,000          | 0                            | \$0.00                      |
| Preferred                        | 0                 | \$0              | \$0                  | 1                            | \$13,363.48                 |
| <b>Total</b>                     | <b>17</b>         | <b>\$8,484</b>   | <b>\$4,902,000</b>   | <b>4</b>                     | <b>\$20,783.64</b>          |
| <b>Town of Pine Knoll Shores</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                | 200               | \$163,786        | \$56,668,000         | 77                           | \$539,676.04                |
| V01-30 & VE Zones                | 66                | \$29,850         | \$12,869,000         | 23                           | \$301,843.51                |
| B, C & X Zone                    |                   |                  |                      |                              |                             |
| Standard                         | 631               | \$296,569        | \$157,840,000        | 163                          | \$694,347.59                |
| Preferred                        | 0                 | \$0              | \$0                  | 59                           | \$738,783.51                |
| <b>Total</b>                     | <b>897</b>        | <b>\$490,205</b> | <b>\$227,377,000</b> | <b>322</b>                   | <b>\$2,274,650.65</b>       |

Source: FEMA Community Information System, accessed January 2025

**Table B.19 – NFIP Policy and Claims Data Pre-FIRM**

| Flood Zone                                 | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Carteret County Unincorporated Area</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                          | 540               | \$608,800        | \$115,088,000        | 1,971                        | \$45,375,793.68             |
| A Zones                                    | 1                 | \$978            | \$206,000            | 71                           | \$810,834.50                |
| V01-30 & VE Zones                          | 4                 | \$1,571          | \$870,000            | 126                          | \$1,772,759.08              |
| D Zones                                    | 0                 | \$0              | \$0                  | 6                            | \$50,266.13                 |
| B, C & X Zone                              |                   |                  |                      |                              |                             |
| Standard                                   | 115               | \$87,311         | \$34,851,000         | 277                          | \$3,367,490.16              |
| Preferred                                  | 0                 | \$0              | \$0                  | 82                           | \$1,052,911.85              |
| <b>Total</b>                               | <b>660</b>        | <b>\$698,660</b> | <b>\$151,015,000</b> | <b>2,451</b>                 | <b>\$51,377,143.55</b>      |
| <b>Town of Atlantic Beach</b>              |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                          | 315               | \$339,125        | \$35,931,000         | 527                          | \$9,376,558.29              |
| A Zones                                    | 1                 | \$2,236          | \$250,000            | 8                            | \$20,066.08                 |
| AO Zones                                   | 1                 | \$2,334          | \$325,000            | 12                           | \$40,004.79                 |
| V01-30 & VE Zones                          | 28                | \$43,258         | \$7,780,000          | 67                           | \$320,192.02                |
| B, C & X Zone                              |                   |                  |                      |                              |                             |
| Standard                                   | 321               | \$159,121        | \$59,809,000         | 152                          | \$740,761.55                |
| Preferred                                  | 0                 | \$0              | \$0                  | 31                           | \$95,744.75                 |
| <b>Total</b>                               | <b>666</b>        | <b>\$546,074</b> | <b>\$104,095,000</b> | <b>766</b>                   | <b>\$10,497,582.73</b>      |

**ANNEX B: CARTERET COUNTY**

| <b>Flood Zone</b>            | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|------------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Beaufort</b>      |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 141                      | \$196,770            | \$34,312,000              | 106                                 | \$1,970,443.29                     |
| B, C & X Zone                | 101                      | \$74,807             | \$33,612,000              | 23                                  | \$392,074.82                       |
| Standard                     | 101                      | \$74,807             | \$33,612,000              | 7                                   | \$244,336.84                       |
| Preferred                    | 0                        | \$0                  | \$0                       | 16                                  | \$147,737.98                       |
| <b>Total</b>                 | <b>242</b>               | <b>\$271,577</b>     | <b>\$67,924,000</b>       | <b>129</b>                          | <b>\$2,362,518.11</b>              |
| <b>Town of Bogue</b>         |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 1                        | \$2,385              | \$195,000                 | 5                                   | \$368,228.42                       |
| B, C & X Zone                | 1                        | \$2,922              | \$294,000                 | 6                                   | \$120,080.83                       |
| Standard                     | 1                        | \$2,922              | \$294,000                 | 5                                   | \$117,475.47                       |
| Preferred                    | 0                        | \$0                  | \$0                       | 1                                   | \$2,605.36                         |
| <b>Total</b>                 | <b>2</b>                 | <b>\$5,307</b>       | <b>\$489,000</b>          | <b>11</b>                           | <b>\$488,309.25</b>                |
| <b>Town of Cape Carteret</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 21                       | \$31,923             | \$5,517,000               | 55                                  | \$1,482,242.86                     |
| V01-30 & VE Zones            | 1                        | \$2,468              | \$282,000                 | 4                                   | \$18,905.25                        |
| B, C & X Zone                | 17                       | \$10,300             | \$5,538,000               | 15                                  | \$88,438.81                        |
| Standard                     | 17                       | \$10,300             | \$5,538,000               | 4                                   | \$18,053.53                        |
| Preferred                    | 0                        | \$0                  | \$0                       | 11                                  | \$70,385.28                        |
| <b>Total</b>                 | <b>39</b>                | <b>\$44,691</b>      | <b>\$11,337,000</b>       | <b>74</b>                           | <b>\$1,589,586.92</b>              |
| <b>Town of Cedar Point</b>   |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 72                       | \$42,743             | \$10,498,000              | 78                                  | \$2,229,763.72                     |
| A Zones                      | 1                        | \$1,516              | \$87,000                  | 0                                   | \$0.00                             |
| V01-30 & VE Zones            | 0                        | \$0                  | \$0                       | 15                                  | \$176,228.95                       |
| B, C & X Zone                | 61                       | \$12,865             | \$8,276,000               | 4                                   | \$118,148.46                       |
| Standard                     | 61                       | \$12,865             | \$8,276,000               | 2                                   | \$60,322.10                        |
| Preferred                    | 0                        | \$0                  | \$0                       | 2                                   | \$57,826.36                        |
| <b>Total</b>                 | <b>134</b>               | <b>\$57,124</b>      | <b>\$18,861,000</b>       | <b>97</b>                           | <b>\$2,524,141.13</b>              |
| <b>Town of Emerald Isle</b>  |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 24                       | \$27,107             | \$6,370,000               | 67                                  | \$859,116.91                       |
| V01-30 & VE Zones            | 16                       | \$16,559             | \$4,153,000               | 81                                  | \$457,887.05                       |
| B, C & X Zone                | 114                      | \$119,168            | \$31,810,000              | 266                                 | \$1,485,142.29                     |
| Standard                     | 114                      | \$119,168            | \$31,810,000              | 194                                 | \$1,025,618.04                     |
| Preferred                    | 0                        | \$0                  | \$0                       | 73                                  | \$471,398.62                       |
| <b>Total</b>                 | <b>154</b>               | <b>\$162,834</b>     | <b>\$42,333,000</b>       | <b>414</b>                          | <b>\$2,802,146.25</b>              |
| <b>Town of Indian Beach</b>  |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones            | 6                        | \$1,831              | \$177,000                 | 9                                   | \$100,141.38                       |
| V01-30 & VE Zones            | 2                        | \$878                | \$309,000                 | 0                                   | \$0.00                             |
| B, C & X Zone                | 97                       | \$9,986              | \$17,894,000              | 5                                   | \$5,574.69                         |
| Standard                     | 97                       | \$9,986              | \$17,894,000              | 3                                   | \$1,509.10                         |
| Preferred                    | 0                        | \$0                  | \$0                       | 2                                   | \$4,065.59                         |
| <b>Total</b>                 | <b>105</b>               | <b>\$12,695</b>      | <b>\$18,380,000</b>       | <b>14</b>                           | <b>\$105,716.07</b>                |

**ANNEX B: CARTERET COUNTY**

| Flood Zone                       | Policies in Force | Total Premium    | Insurance in Force  | Number of Closed Paid Losses | Total of Closed Paid Losses |
|----------------------------------|-------------------|------------------|---------------------|------------------------------|-----------------------------|
| <b>Town of Morehead City</b>     |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                | 144               | \$197,242        | \$35,985,000        | 233                          | \$5,114,651.94              |
| V01-30 & VE Zones                | 1                 | \$1,335          | \$50,000            | 6                            | \$24,645.47                 |
| B, C & X Zone                    | 126               | \$106,852        | \$43,352,000        | 57                           | \$668,210.57                |
| Standard                         | 126               | \$106,852        | \$43,352,000        | 25                           | \$385,957.69                |
| Preferred                        | 0                 | \$0              | \$0                 | 32                           | \$282,252.88                |
| <b>Total</b>                     | <b>271</b>        | <b>\$305,429</b> | <b>\$79,387,000</b> | <b>296</b>                   | <b>\$5,807,507.98</b>       |
| <b>Town of Newport</b>           |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                | 4                 | \$3,322          | \$876,000           | 9                            | \$279,371.25                |
| A Zones                          | 0                 | \$0              | \$0                 | 5                            | \$91,848.47                 |
| B, C & X Zone                    | 16                | \$8,683          | \$5,085,000         | 8                            | \$94,029.13                 |
| Standard                         | 16                | \$8,683          | \$5,085,000         | 0                            | \$0.00                      |
| Preferred                        | 0                 | \$0              | \$0                 | 8                            | \$94,029.13                 |
| <b>Total</b>                     | <b>20</b>         | <b>\$12,005</b>  | <b>\$5,961,000</b>  | <b>22</b>                    | <b>\$465,248.85</b>         |
| <b>Town of Peletier</b>          |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                | 5                 | \$2,907          | \$963,000           | 0                            | \$0.00                      |
| B, C & X Zone                    | 1                 | \$697            | \$321,000           | 1                            | \$13,363.48                 |
| Standard                         | 1                 | \$697            | \$321,000           | 0                            | \$0.00                      |
| Preferred                        | 0                 | \$0              | \$0                 | 1                            | \$13,363.48                 |
| <b>Total</b>                     | <b>6</b>          | <b>\$3,604</b>   | <b>\$1,284,000</b>  | <b>1</b>                     | <b>\$13,363.48</b>          |
| <b>Town of Pine Knoll Shores</b> |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                | 10                | \$15,860         | \$3,178,000         | 3                            | \$30,557.06                 |
| V01-30 & VE Zones                | 43                | \$13,728         | \$6,446,000         | 13                           | \$300,226.59                |
| B, C & X Zone                    | 138               | \$98,586         | \$37,715,000        | 83                           | \$480,439.53                |
| Standard                         | 138               | \$98,586         | \$37,715,000        | 59                           | \$297,853.24                |
| Preferred                        | 0                 | \$0              | \$0                 | 24                           | \$182,586.29                |
| <b>Total</b>                     | <b>191</b>        | <b>\$128,174</b> | <b>\$47,339,000</b> | <b>99</b>                    | <b>\$811,223.18</b>         |

Source: FEMA Community Information System, accessed January 2025

**Table B.20 - NFIP Policy and Claims Data Post-FIRM**

| Flood Zone                                 | Policies in Force | Total Premium      | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--|-------------------|--------------------|----------------------|------------------------------|-----------------------------|
| <b>Carteret County Unincorporated Area</b> |                   |                    |                      |                              |                             |
| A01-30 & AE Zones                          | 1,635             | \$1,293,641        | \$433,057,000        | 1,794                        | \$22,717,532.68             |
| A Zones                                    | 0                 | \$0                | \$0                  | 12                           | \$144,697.24                |
| V01-30 & VE Zones                          | 10                | \$13,472           | \$2,610,000          | 34                           | \$40,443.86                 |
| B, C & X Zone                              | 519               | \$252,041          | \$126,447,000        | 173                          | \$1,675,152.17              |
| Standard                                   | 519               | \$252,041          | \$126,447,000        | 94                           | \$1,068,364.66              |
| Preferred                                  | 0                 | \$0                | \$0                  | 81                           | \$647,554.75                |
| <b>Total</b>                               | <b>2,164</b>      | <b>\$1,559,154</b> | <b>\$562,114,000</b> | <b>2,013</b>                 | <b>\$24,577,825.95</b>      |

**ANNEX B: CARTERET COUNTY**

| <b>Flood Zone</b>             | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|-------------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Atlantic Beach</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones             | 557                      | \$517,005            | \$141,169,000             | 240                                 | \$1,498,607.05                     |
| AO Zones                      | 0                        | \$0                  | \$0                       | 3                                   | \$117,500.97                       |
| V01-30 & VE Zones             | 60                       | \$52,166             | \$16,737,000              | 15                                  | \$27,895.33                        |
| B, C & X Zone                 | 1,252                    | \$317,355            | \$186,008,000             | 135                                 | \$1,048,467.41                     |
| Standard                      | 1,252                    | \$317,355            | \$186,008,000             | 87                                  | \$740,725.38                       |
| Preferred                     | 0                        | \$0                  | \$0                       | 49                                  | \$307,742.03                       |
| <b>Total</b>                  | <b>1,869</b>             | <b>\$886,526</b>     | <b>\$343,914,000</b>      | <b>393</b>                          | <b>\$2,692,470.76</b>              |
| <b>Town of Beaufort</b>       |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones             | 315                      | \$286,417            | \$91,185,000              | 125                                 | \$1,878,060.35                     |
| <b>B, C &amp; X Zone</b>      | 161                      | \$115,797            | \$51,863,000              | 18                                  | \$211,948.03                       |
| <b>Standard</b>               | 161                      | \$115,797            | \$51,863,000              | 3                                   | \$54,459.61                        |
| <b>Preferred</b>              | 0                        | \$0                  | \$0                       | 16                                  | \$173,878.65                       |
| <b>Total</b>                  | <b>476</b>               | <b>\$402,214</b>     | <b>\$143,048,000</b>      | <b>143</b>                          | <b>\$2,090,008.38</b>              |
| <b>Town of Bogue</b>          |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones             | 18                       | \$22,511             | \$5,577,000               | 7                                   | \$163,167.91                       |
| B, C & X Zone                 | 12                       | \$7,720              | \$4,099,000               | 1                                   | \$5,323.27                         |
| Standard                      | 12                       | \$7,720              | \$4,099,000               | 0                                   | \$0.00                             |
| Preferred                     | 0                        | \$0                  | \$0                       | 1                                   | \$5,323.27                         |
| <b>Total</b>                  | <b>30</b>                | <b>\$30,231</b>      | <b>\$9,676,000</b>        | <b>8</b>                            | <b>\$168,491.18</b>                |
| <b>Town of Cape Carteret</b>  |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones             | 80                       | \$79,113             | \$24,334,000              | 85                                  | \$813,526.97                       |
| V01-30 & VE Zones             | 0                        | \$0                  | \$0                       | 1                                   | \$56,362.04                        |
| B, C & X Zone                 | 34                       | \$32,293             | \$11,221,000              | 25                                  | \$323,258.09                       |
| Standard                      | 34                       | \$32,293             | \$11,221,000              | 11                                  | \$147,989.11                       |
| Preferred                     | 0                        | \$0                  | \$0                       | 15                                  | \$176,036.55                       |
| <b>Total</b>                  | <b>114</b>               | <b>\$111,406</b>     | <b>\$35,555,000</b>       | <b>111</b>                          | <b>\$1,193,147.10</b>              |
| <b>Town of Cedar Point</b>    |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones             | 70                       | \$59,341             | \$20,942,000              | 29                                  | \$235,621.00                       |
| B, C & X Zone                 | 49                       | \$26,001             | \$16,530,000              | 9                                   | \$54,752.50                        |
| Standard                      | 49                       | \$26,001             | \$16,530,000              | 0                                   | \$0.00                             |
| Preferred                     | 0                        | \$0                  | \$0                       | 9                                   | \$54,752.50                        |
| <b>Total</b>                  | <b>119</b>               | <b>\$85,342</b>      | <b>\$37,472,000</b>       | <b>38</b>                           | <b>\$290,373.50</b>                |
| <b>Town of Emerald Isle</b>   |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones             | 449                      | \$296,860            | \$127,465,000             | 333                                 | \$2,747,455.27                     |
| V01-30 & VE Zones             | 99                       | \$90,141             | \$28,938,000              | 165                                 | \$1,210,412.18                     |
| B, C & X Zone                 | 1,419                    | \$753,943            | \$344,997,000             | 882                                 | \$6,179,214.06                     |
| Standard                      | 1,419                    | \$753,943            | \$344,997,000             | 554                                 | \$4,680,672.84                     |
| Preferred                     | 0                        | \$0                  | \$0                       | 328                                 | \$1,498,541.22                     |
| <b>Total</b>                  | <b>1,967</b>             | <b>\$1,140,944</b>   | <b>\$501,400,000</b>      | <b>1,380</b>                        | <b>\$10,137,081.51</b>             |

**ANNEX B: CARTERET COUNTY**

| <b>Flood Zone</b>                | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|----------------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Indian Beach</b>      |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                | 138                      | \$33,495             | \$28,771,000              | 21                                  | \$95,195.11                        |
| V01-30 & VE Zones                | 9                        | \$4,614              | \$2,950,000               | 3                                   | \$0.00                             |
| B, C & X Zone                    | 442                      | \$42,948             | \$111,255,000             | 6                                   | \$21,992.34                        |
| Standard                         | 442                      | \$42,948             | \$111,255,000             | 3                                   | \$14,794.88                        |
| Preferred                        | 0                        | \$0                  | \$0                       | 3                                   | \$7,197.46                         |
| <b>Total</b>                     | <b>589</b>               | <b>\$81,057</b>      | <b>\$142,976,000</b>      | <b>30</b>                           | <b>\$117,187.45</b>                |
| <b>Town of Morehead City</b>     |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                | 684                      | \$412,401            | \$193,809,000             | 148                                 | \$2,120,479.15                     |
| V01-30 & VE Zones                | 5                        | \$5,096              | \$1,306,000               | 0                                   | \$0.00                             |
| B, C & X Zone                    | 341                      | \$223,954            | \$116,434,000             | 70                                  | \$792,005.02                       |
| Standard                         | 341                      | \$223,954            | \$116,434,000             | 18                                  | \$58,452.60                        |
| Preferred                        | 0                        | \$0                  | \$0                       | 52                                  | \$733,552.42                       |
| <b>Total</b>                     | <b>1,030</b>             | <b>\$641,451</b>     | <b>\$311,549,000</b>      | <b>218</b>                          | <b>\$2,912,484.17</b>              |
| <b>Town of Newport</b>           |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                | 49                       | \$31,182             | \$11,348,000              | 60                                  | \$4,643,066.86                     |
| B, C & X Zone                    | 62                       | \$33,772             | \$19,042,000              | 14                                  | \$426,569.26                       |
| Standard                         | 62                       | \$33,772             | \$19,042,000              | 5                                   | \$313,291.23                       |
| Preferred                        | 0                        | \$0                  | \$0                       | 9                                   | \$113,278.03                       |
| <b>Total</b>                     | <b>111</b>               | <b>\$64,954</b>      | <b>\$30,390,000</b>       | <b>74</b>                           | <b>\$5,069,636.12</b>              |
| <b>Town of Peletier</b>          |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                | 3                        | \$1,908              | \$872,000                 | 3                                   | \$7,420.16                         |
| B, C & X Zone                    | 8                        | \$2,972              | \$2,746,000               | 0                                   | \$0.00                             |
| Standard                         | 8                        | \$2,972              | \$2,746,000               | 0                                   | \$0.00                             |
| Preferred                        | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>                     | <b>11</b>                | <b>\$4,880</b>       | <b>\$3,618,000</b>        | <b>3</b>                            | <b>\$7,420.16</b>                  |
| <b>Town of Pine Knoll Shores</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones                | 190                      | \$147,926            | \$53,490,000              | 74                                  | \$509,118.98                       |
| V01-30 & VE Zones                | 23                       | \$16,122             | \$6,423,000               | 10                                  | \$1,616.92                         |
| B, C & X Zone                    | 493                      | \$197,983            | \$120,125,000             | 139                                 | \$952,691.57                       |
| Standard                         | 493                      | \$197,983            | \$120,125,000             | 104                                 | \$396,494.35                       |
| Preferred                        | 0                        | \$0                  | \$0                       | 35                                  | \$556,197.22                       |
| <b>Total</b>                     | <b>706</b>               | <b>\$362,031</b>     | <b>\$180,038,000</b>      | <b>223</b>                          | <b>\$1,463,427.47</b>              |

Source: FEMA Community Information System, accessed January 2025

**B.2.2 WILDFIRE**

Table B.21 summarizes the acreage in Carteret County that falls within the Wildland Urban Interface (WUI), categorized by housing density. Areas in the WUI are those where development may intermix with flammable vegetation. Over 89 percent of Carteret County is not included in the WUI.

**Table B.21 - Wildland Urban Interface Acreage, Carteret County**

|  | Housing Density      | Total Acreage  | Percent of Total Acreage |
|--|----------------------|----------------|--------------------------|
|  | Not in WUI           | 767,084        | 89.38%                   |
|  | LT 1hs/40ac          | 19,691         | 2.29%                    |
|  | 1hs/40ac to 1hs/20ac | 8,873          | 1.03%                    |
|  | 1hs/20ac to 1hs/10ac | 9,493          | 1.11%                    |
|  | 1hs/10ac to 1hs/5ac  | 10,136         | 1.18%                    |
|  | 1hs/5ac to 1hs/2ac   | 14,867         | 1.73%                    |
|  | 1hs/2ac to 3hs/1ac   | 26,793         | 3.12%                    |
|  | GT 3hs/1ac           | 1,303          | 0.15%                    |
|  | <b>Total</b>         | <b>858,240</b> | <b>100%</b>              |

Source: Southern Wildfire Risk Assessment

Figure B.37 depicts the WUI for Carteret County’s participating jurisdictions. Figure B.38 details the Fire Intensity Scale, which indicates the potential severity of fire based on fuel loads, topography, and other factors. Figure B.39 depicts Burn Probability based on landscape conditions, percentile weather, historical ignition patterns, and historical prevention and suppression efforts.

Potential fire intensity is highest in the unincorporated areas of Carteret County, particularly along the northwest border with Craven County and the eastern barrier islands. Burn probability is highest on the northwest border with Craven County but is low along the barrier islands and inlets. Although the area around the northwestern border with Craven County has high burn probability and fire intensity it is outside the WUI, therefore impacts to buildings and people would be minimal.

Table B.22 through Table B.33 provide the count and estimated value of all structures that intersect with areas of unincorporated Carteret County and participating jurisdictions that are rated moderate to high on the WUI Risk Index. Table B.34 through Table B.45 provide building counts and values for critical facilities by FEMA lifeline that are located in areas rated moderate to high on the WUI Risk Index.

**Table B.22 - Structures at Risk to Moderate-High WUI Risk Index, Unincorporated Carteret County**

| Occupancy    | Structures at Risk | Structure Value           | Estimated Content Value   | Total Value               |
|--------------|--------------------|---------------------------|---------------------------|---------------------------|
| Agriculture  | 238                | \$6,656,725.01            | \$6,656,725.01            | \$13,313,450.02           |
| Commercial   | 669                | \$106,588,844.14          | \$106,588,844.14          | \$213,177,688.29          |
| Education    | 28                 | \$33,389,769.00           | \$33,389,769.00           | \$66,779,538.00           |
| Government   | 77                 | \$267,124,048.00          | \$267,124,048.00          | \$534,248,096.00          |
| Industrial   | 227                | \$23,509,762.40           | \$35,264,643.61           | \$58,774,406.01           |
| Religious    | 146                | \$40,849,545.00           | \$40,849,545.00           | 81,699,090.00             |
| Residential  | 17,930             | \$1,539,970,754.55        | \$769,985,377.27          | \$2,309,956,131.82        |
| <b>Total</b> | <b>19,315</b>      | <b>\$2,018,089,448.11</b> | <b>\$1,009,044,724.05</b> | <b>\$3,027,134,172.16</b> |

Source: Southern Wildfire Risk Assessment

**Table B.23 – Structures at Risk to Moderate-High WUI Risk Index, Town of Atlantic Beach**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value               |
|--------------|--------------------|-------------------------|-------------------------|---------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                       |
| Commercial   | 126                | \$25,501,996.93         | \$25,501,996.93         | \$51,003,993.86           |
| Education    | 0                  | \$0                     | \$0                     | \$0                       |
| Government   | 11                 | \$361,381,450.00        | \$361,381,450.00        | \$722,762,900.00          |
| Industrial   | 1                  | \$204,022.00            | \$306,033.00            | \$510,055.00              |
| Religious    | 3                  | \$1,620,914.00          | \$1,620,914.00          | \$3,241,828.00            |
| Residential  | 3,339              | \$602,321,505.00        | \$301,160,752.50        | \$903,482,257.50          |
| <b>Total</b> | <b>3,480</b>       | <b>\$991,029,887.93</b> | <b>\$495,514,943.97</b> | <b>\$1,486,544,831.90</b> |

Source: Southern Wildfire Risk Assessment

**Table B.24 – Structures at Risk to Moderate-High WUI Risk Index, Town of Beaufort**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                     |
| Commercial   | 136                | \$27,981,612.00         | \$27,981,612.00         | \$55,963,224.00         |
| Education    | 16                 | \$13,402,702.00         | \$13,402,702.00         | \$26,805,404.00         |
| Government   | 20                 | \$76,304,830.00         | \$76,304,830.00         | \$152,609,660.00        |
| Industrial   | 11                 | \$1,161,150.00          | \$1,741,725.00          | \$2,902,875.00          |
| Religious    | 12                 | \$3,153,725.00          | \$3,153,725.00          | \$6,307,450.00          |
| Residential  | 1,938              | \$229,631,710.00        | \$114,815,855.00        | \$344,447,565.00        |
| <b>Total</b> | <b>2,133</b>       | <b>\$351,635,729.00</b> | <b>\$175,817,864.50</b> | <b>\$527,453,593.50</b> |

Source: Southern Wildfire Risk Assessment

**Table B.25 – Structures at Risk to Moderate-High WUI Risk Index, Town of Bogue**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 5                  | \$107,358.00           | \$107,358.00            | \$214,716.00           |
| Commercial   | 14                 | \$2,784,769.00         | \$2,784,769.00          | \$5,569,538.00         |
| Education    | 1                  | \$167,881.00           | \$167,881.00            | \$335,762.00           |
| Government   | 1                  | \$96,014.00            | \$96,014.00             | \$192,028.00           |
| Industrial   | 3                  | \$351,267.00           | \$526,900.50            | \$878,167.50           |
| Religious    | 5                  | \$2,555,377.00         | \$2,555,377.00          | \$5,110,754.00         |
| Residential  | 307                | \$27,176,103.00        | \$13,588,051.50         | \$40,764,154.50        |
| <b>Total</b> | <b>336</b>         | <b>\$33,238,769.00</b> | <b>\$16,619,384.50</b>  | <b>\$49,858,153.50</b> |

Source: Southern Wildfire Risk Assessment

**Table B.26 – Structures at Risk to Moderate-High WUI Risk Index, Town of Cape Carteret**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                     |
| Commercial   | 69                 | \$17,945,698.00         | \$17,945,698.00         | \$35,891,396.00         |
| Education    | 11                 | \$4,776,973.00          | \$4,776,973.00          | \$9,553,946.00          |
| Government   | 6                  | \$978,254.00            | \$978,254.00            | \$1,956,508.00          |
| Industrial   | 10                 | \$1,234,588.00          | \$1,851,882.00          | \$3,086,470.00          |
| Religious    | 3                  | \$1,163,395.00          | \$1,163,395.00          | \$2,326,790.00          |
| Residential  | 857                | \$100,243,107.00        | \$50,121,553.50         | \$150,364,660.50        |
| <b>Total</b> | <b>956</b>         | <b>\$126,342,015.00</b> | <b>\$63,171,007.50</b>  | <b>\$189,513,022.50</b> |

Source: Southern Wildfire Risk Assessment

**Table B.27 – Structures at Risk to Moderate-High WUI Risk Index, Town of Cedar Point**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 18                 | \$594,192.00            | \$594,192.00            | \$1,188,384.00          |
| Commercial   | 44                 | \$5,557,968.00          | \$5,557,968.00          | \$11,115,936.00         |
| Education    | 0                  | \$0                     | \$0                     | \$0                     |
| Government   | 2                  | \$661,411.00            | \$661,411.00            | \$1,322,822.00          |
| Industrial   | 15                 | \$1,654,967.00          | \$2,482,450.50          | \$4,137,417.50          |
| Religious    | 5                  | \$3,125,068.00          | \$3,125,068.00          | \$6,250,136.00          |
| Residential  | 936                | \$108,288,546.00        | \$54,144,273.00         | \$162,432,819.00        |
| <b>Total</b> | <b>1,020</b>       | <b>\$119,882,152.00</b> | <b>\$59,941,076.00</b>  | <b>\$179,823,228.00</b> |

Source: Southern Wildfire Risk Assessment

**Table B.28 – Structures at Risk to Moderate-High WUI Risk Index, Town of Emerald Isle**

| Occupancy    | Structures at Risk | Structure Value           | Estimated Content Value | Total Value               |
|--------------|--------------------|---------------------------|-------------------------|---------------------------|
| Agriculture  | 0                  | \$0                       | \$0                     | \$0                       |
| Commercial   | 91                 | \$20,662,584.00           | \$20,662,584.00         | \$41,325,168.00           |
| Education    | 0                  | \$0                       | \$0                     | \$0                       |
| Government   | 22                 | \$203,661,892.00          | \$203,661,892.00        | \$407,323,784.00          |
| Industrial   | 20                 | \$3,019,488.00            | \$4,529,232.00          | \$7,548,720.00            |
| Religious    | 9                  | \$3,634,681.00            | \$3,634,681.00          | \$7,269,362.00            |
| Residential  | 4,099              | \$894,266,419.00          | \$447,133,209.50        | \$1,341,399,628.50        |
| <b>Total</b> | <b>4,241</b>       | <b>\$1,125,245,064.00</b> | <b>\$562,622,532.00</b> | <b>\$1,687,867,596.00</b> |

Source: Southern Wildfire Risk Assessment



**Table B.29 – Structures at Risk to Moderate-High WUI Risk Index, Town of Indian Beach**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                     |
| Commercial   | 9                  | \$2,734,064.00          | \$2,734,064.00          | \$5,468,128.00          |
| Education    | 0                  | \$0                     | \$0                     | \$0                     |
| Government   | 5                  | \$61,262,229.00         | \$61,262,229.00         | \$122,524,458.00        |
| Industrial   | 0                  | \$0                     | \$0                     | \$0                     |
| Religious    | 0                  | \$0                     | \$0                     | \$0                     |
| Residential  | 471                | \$112,002,680.00        | \$56,001,340.00         | \$168,004,020.00        |
| <b>Total</b> | <b>485</b>         | <b>\$175,998,973.00</b> | <b>\$87,999,486.50</b>  | <b>\$263,998,459.50</b> |

Source: Southern Wildfire Risk Assessment

**Table B.30 – Structures at Risk to Moderate-High WUI Risk Index, Town of Morehead City**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                     |
| Commercial   | 392                | \$122,185,916.67        | \$122,185,916.67        | \$244,371,833.33        |
| Education    | 41                 | \$31,583,465.00         | \$31,583,465.00         | \$63,166,930.00         |
| Government   | 32                 | \$27,680,517.85         | \$27,680,517.85         | \$55,361,035.71         |
| Industrial   | 41                 | \$7,215,082.00          | \$10,822,623.00         | \$18,037,705.00         |
| Religious    | 41                 | \$21,623,627.00         | \$21,623,627.00         | \$43,247,254.00         |
| Residential  | 2,976              | \$413,576,208.00        | \$206,788,104.00        | \$620,364,312.01        |
| <b>Total</b> | <b>3,523</b>       | <b>\$623,864,816.52</b> | <b>\$311,932,408.26</b> | <b>\$935,797,224.78</b> |

Source: Southern Wildfire Risk Assessment

**Table B.31 – Structures at Risk to Moderate-High WUI Risk Index, Town of Newport**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 1                  | \$17,161.00             | \$17,161.00             | \$34,322.00             |
| Commercial   | 63                 | \$15,189,337.00         | \$15,189,337.00         | \$30,378,674.00         |
| Education    | 10                 | \$10,989,303.00         | \$10,989,303.00         | \$21,978,606.00         |
| Government   | 31                 | \$192,870,080.00        | \$192,870,080.00        | \$385,740,160.00        |
| Industrial   | 23                 | \$2,206,252.00          | \$3,309,378.00          | \$5,515,630.00          |
| Religious    | 25                 | \$10,022,497.00         | \$10,022,497.00         | \$20,044,994.00         |
| Residential  | 1,351              | \$118,288,022.00        | \$59,144,011.00         | \$177,432,033.00        |
| <b>Total</b> | <b>1,504</b>       | <b>\$349,582,652.00</b> | <b>\$174,791,326.00</b> | <b>\$524,373,978.00</b> |

Source: Southern Wildfire Risk Assessment

**Table B.32 – Structures at Risk to Moderate-High WUI Risk Index, Town of Peletier**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 15                 | \$159,621.63           | \$159,621.63            | \$319,243.26           |
| Commercial   | 17                 | \$1,279,559.00         | \$1,279,559.00          | \$2,559,118.00         |
| Education    | 0                  | \$0                    | \$0                     | \$0                    |
| Government   | 0                  | \$0                    | \$0                     | \$0                    |
| Industrial   | 6                  | \$168,613.00           | \$252,919.50            | \$421,532.50           |
| Religious    | 8                  | \$2,494,885.00         | \$2,494,885.00          | \$4,989,770.00         |
| Residential  | 361                | \$20,682,810.00        | \$10,341,405.00         | \$31,024,215.00        |
| <b>Total</b> | <b>407</b>         | <b>\$24,785,488.63</b> | <b>\$12,392,744.32</b>  | <b>\$37,178,232.95</b> |

Source: Southern Wildfire Risk Assessment

**Table B.33 – Structures at Risk to Moderate-High WUI Risk Index, Town of Pine Knoll Shores**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                     |
| Commercial   | 31                 | \$8,592,720.56          | \$8,592,720.56          | \$17,185,441.11         |
| Education    | 0                  | \$0                     | \$0                     | \$0                     |
| Government   | 11                 | \$72,304,456.00         | \$72,304,456.00         | \$144,608,912.00        |
| Industrial   | 4                  | \$541,795.00            | \$812,692.50            | \$1,354,487.50          |
| Religious    | 24                 | \$7,096,285.00          | \$7,096,285.00          | \$14,192,570.00         |
| Residential  | 1,476              | \$474,323,730.00        | \$237,161,865.00        | \$711,485,595.00        |
| <b>Total</b> | <b>1,546</b>       | <b>\$562,858,986.56</b> | <b>\$281,429,493.28</b> | <b>\$844,288,479.84</b> |

Source: Southern Wildfire Risk Assessment

**Table B.34 – Critical Facilities Exposed to Wildfire, Unincorporated Carteret County**

| Type                     | Critical Facility Count | Structure Value      |
|--------------------------|-------------------------|----------------------|
| Communications           | 6                       | \$211,202            |
| Energy                   | 0                       | \$0                  |
| Food, Hydration, Shelter | 9                       | \$43,203,157         |
| Hazardous Materials      | 0                       | \$0                  |
| Health and Medical       | 10                      | \$2,902,270          |
| Safety and Security      | 26                      | \$9,825,065          |
| Transportation           | 13                      | \$30,056,908         |
| Water Systems            | 76                      | \$21,822,662         |
| <b>Total</b>             | <b>140</b>              | <b>\$108,021,264</b> |

Source: Southern Wildfire Risk Assessment

**Table B.35 - Critical Facilities Exposed to Wildfire, Town of Atlantic Beach**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 1                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 4                       | \$0             |
| <b>Total</b>             | <b>5</b>                | <b>\$0</b>      |

Source: Southern Wildfire Risk Assessment

**Table B.36 - Critical Facilities Exposed to Wildfire, Town of Beaufort**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 4                       | \$62,214,570        |
| Energy                   | 1                       | \$309,205           |
| Food, Hydration, Shelter | 12                      | \$19,608,230        |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 0                       | \$0                 |
| Safety and Security      | 8                       | \$5,546,875         |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 14                      | \$1,960,511         |
| <b>Total</b>             | <b>39</b>               | <b>\$89,639,391</b> |

Source: Southern Wildfire Risk Assessment

**Table B.37 - Critical Facilities Exposed to Wildfire, Town of Bogue**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 0                       | \$0             |
| <b>Total</b>             | <b>0</b>                | <b>\$0</b>      |

Source: Southern Wildfire Risk Assessment

**Table B.38 - Critical Facilities Exposed to Wildfire, Town of Cape Carteret**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 1                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 1                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | \$0              |
| Safety and Security      | 1                       | \$586,555        |
| Transportation           | 0                       | \$0              |
| Water Systems            | 0                       | \$0              |
| <b>Total</b>             | <b>3</b>                | <b>\$586,555</b> |

Source: Southern Wildfire Risk Assessment

**Table B.39 - Critical Facilities Exposed to Wildfire, Town of Cedar Point**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 1                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | \$0              |
| Safety and Security      | 2                       | \$758,148        |
| Transportation           | 0                       | \$0              |
| Water Systems            | 0                       | \$0              |
| <b>Total</b>             | <b>3</b>                | <b>\$758,148</b> |

Source: Southern Wildfire Risk Assessment

**Table B.40 - Critical Facilities Exposed to Wildfire, Town of Emerald Isle**

| Type                     | Critical Facility Count | Structure Value    |
|--------------------------|-------------------------|--------------------|
| Communications           | 0                       | \$0                |
| Energy                   | 0                       | \$0                |
| Food, Hydration, Shelter | 0                       | \$0                |
| Hazardous Materials      | 0                       | \$0                |
| Health and Medical       | 0                       | \$0                |
| Safety and Security      | 4                       | \$3,436,936        |
| Transportation           | 0                       | \$0                |
| Water Systems            | 15                      | \$3,226,995        |
| <b>Total</b>             | <b>19</b>               | <b>\$6,663,931</b> |

Source: Southern Wildfire Risk Assessment

**Table B.41 - Critical Facilities Exposed to Wildfire, Town of Indian Beach**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 0                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | \$0              |
| Safety and Security      | 0                       | \$0              |
| Transportation           | 0                       | \$0              |
| Water Systems            | 2                       | \$738,672        |
| <b>Total</b>             | <b>2</b>                | <b>\$738,672</b> |

Source: Southern Wildfire Risk Assessment

**Table B.42 - Critical Facilities Exposed to Wildfire, Town of Morehead City**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 3                       | \$15,581,055        |
| Energy                   | 0                       | \$0                 |
| Food, Hydration, Shelter | 6                       | \$24,832,467        |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 15                      | \$1,244,860         |
| Safety and Security      | 12                      | \$31,850,009        |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 8                       | \$841,893           |
| <b>Total</b>             | <b>44</b>               | <b>\$74,350,284</b> |

Source: Southern Wildfire Risk Assessment

**Table B.43 - Critical Facilities Exposed to Wildfire, Newport**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 0                       | \$0                 |
| Energy                   | 0                       | \$0                 |
| Food, Hydration, Shelter | 3                       | \$11,509,807        |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 4                       | \$0                 |
| Safety and Security      | 3                       | \$470,228           |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 4                       | \$33,560            |
| <b>Total</b>             | <b>14</b>               | <b>\$12,013,595</b> |

Source: Southern Wildfire Risk Assessment

**Table B.44 - Critical Facilities Exposed to Wildfire, Town of Peletier**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 1                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 0                       | \$0             |
| <b>Total</b>             | <b>1</b>                | <b>\$0</b>      |

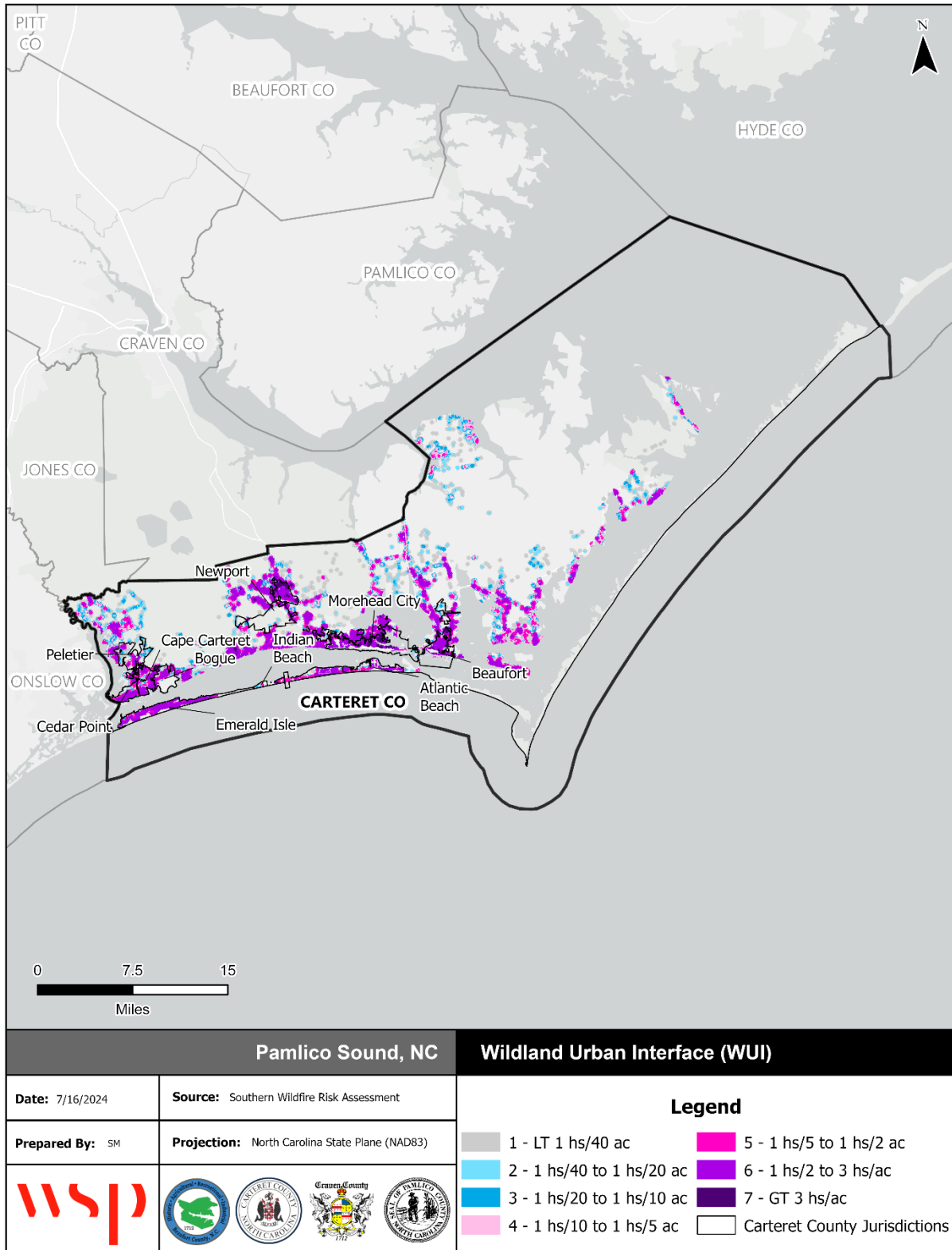
Source: Southern Wildfire Risk Assessment

**Table B.45 - Critical Facilities Exposed to Wildfire, Pine Knoll Shores**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 0                       | \$0                 |
| Energy                   | 0                       | \$0                 |
| Food, Hydration, Shelter | 0                       | \$0                 |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 0                       | \$0                 |
| Safety and Security      | 3                       | \$3,427,179         |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 5                       | \$7,207,230         |
| <b>Total</b>             | <b>8</b>                | <b>\$10,634,409</b> |

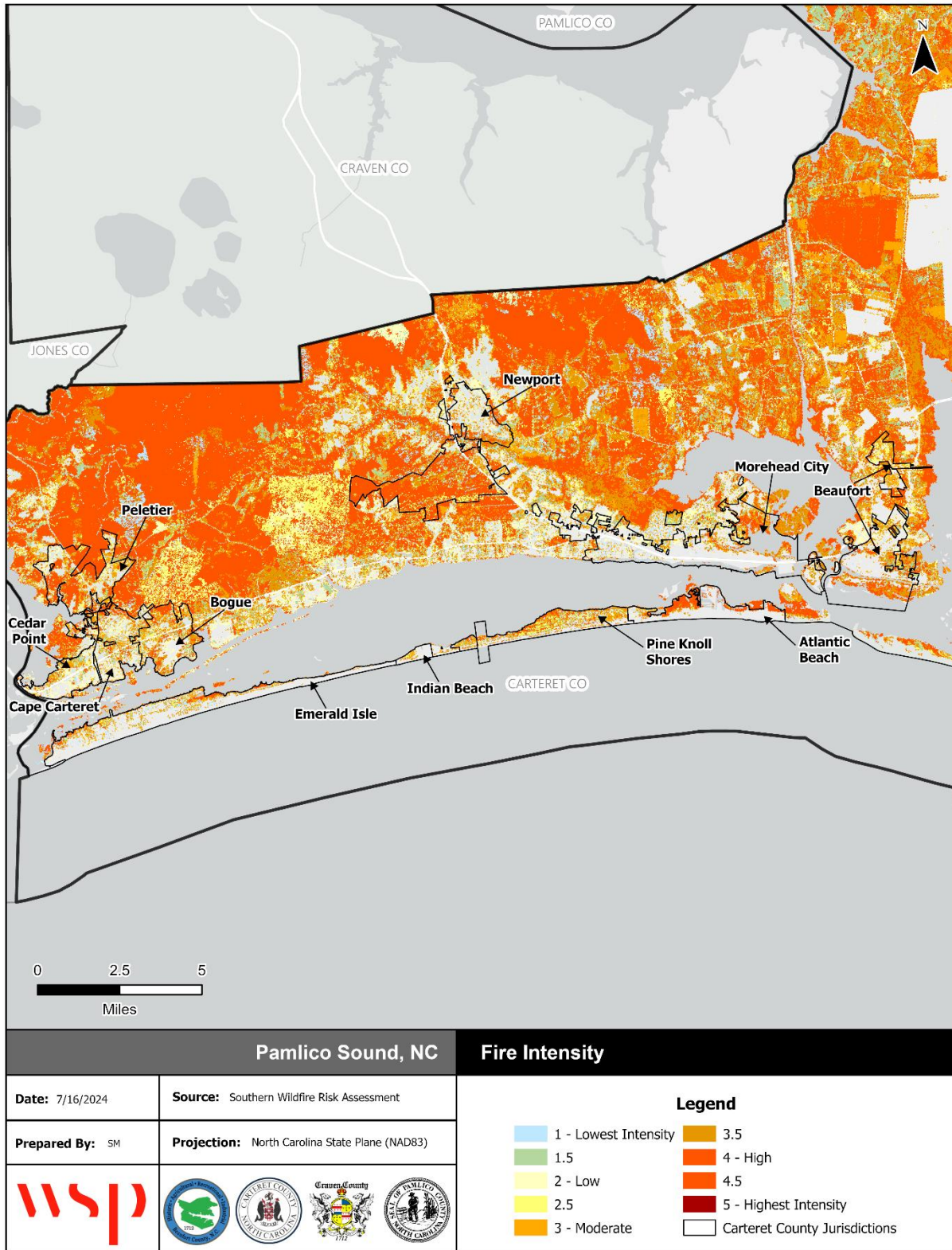
Source: Southern Wildfire Risk Assessment

Figure B.37 - Wildland Urban Interface, Carteret County



Source: Southern Wildfire Risk Assessment

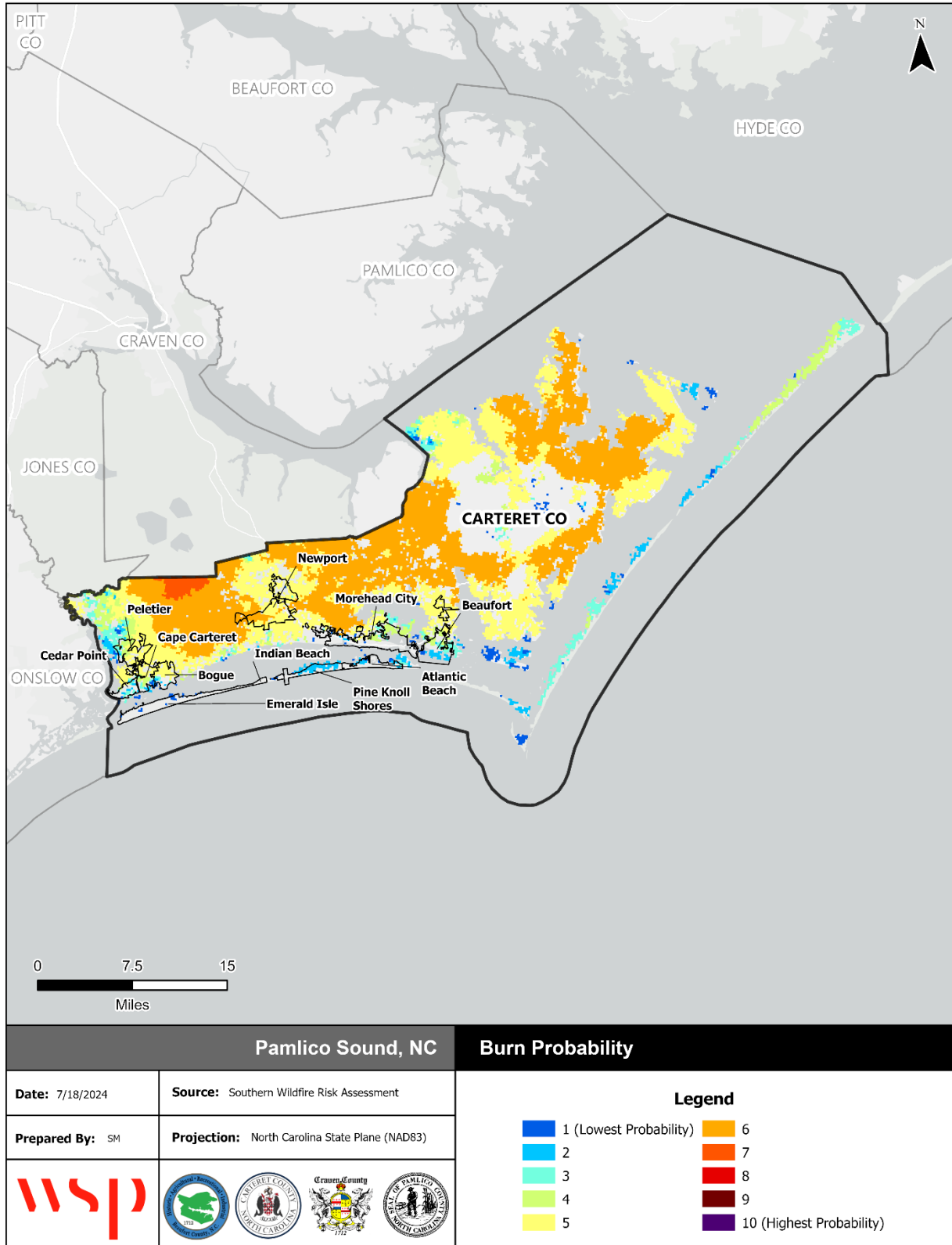
Figure B.38 - Fire Intensity Scale, Carteret County



Source: Southern Wildfire Risk Assessment



Figure B.39 - Burn Probability, Carteret County



Source: Southern Wildfire Risk Assessment

### B.3 MITIGATION STRATEGY

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|---|-------------------|----------|------------------|---------------------|---|------------------|---------------------------|-------------------------|---------------|---|
| CA3      | Annually review and maintain the County's Continuity of Operations Plan (COOP) to ensure ongoing government operations following a disaster event. The County, in conjunction with all participating municipal jurisdictions, will review this plan annually and update as deemed necessary.   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards       | Med      | 3.2              | ES                  | <b>Carteret County Emergency Services,</b><br>Municipal Administrations                               | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | County Risk Management is working with County Departments to complete COOP update. County will review and update this plan annually. Beaufort, Cedar Point, and Pine Knoll Shores cooperate with the County's Continuity of Operations Plan.  |
| CA4      | Annually review and update the County's Emergency Operations Plan (EOP) to ensure compliance with all NCEM and NCOEMS procedures and policies. Through these updates, the County will work closely with all participating municipalities to ensure that all jurisdictions continue to be educated and prepared for activation of the EOP in the event of a disaster event. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards       | Med      | 3.2              | ES                  | <b>Carteret County Emergency Services</b>   | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Carteret County Emergency Services works closely with all participating municipalities to review and update the Emergency Operations Plan (EOP) annually. Beaufort and Pine Knoll Shores cooperate with the County's Emergency Operations Plan.   |
| CA5      | Maintain, and where necessary, install backup generators at all identified critical facilities. Additionally, County Emergency Services will evaluate the equipment on a regular basis to ensure it continues to meet operational demands at county facilities.  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards       | High     | 1.2              | PP                  | <b>Carteret County Emergency Services,</b><br>Independent Facility Operators<br>Town Public Utilities | To Be Determined | GF, NCDPS, NCDOT, HMGP    | Ongoing - next 5 years  | Carry Forward | Carteret County Emergency Services evaluates all emergency generators on a regular basis to ensure operability. A new County radio system project is in progress. In Beaufort, permanent backup generators have been installed at the Town's Police Department, Fire Department, Public Works, Public Utilities, and Town Hall buildings, as well on most utility lift stations. Pine Knoll Shores evaluates all emergency generators on a regular basis to ensure operability. |

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed  | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule   | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|---|---|--|----------|------------------|---------------------|---|------------------|---------------------------|---------------------------|---------------|--|
| CA6      | Maintain a contract with a qualified post-disaster recovery service provider. This contract will include the provision of essential services and equipment, including generators, and will include documentation required for reimbursement from FEMA/NCEM. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Severe Winter Weather, Earthquake, Wildfire, Dam & Levee Failure                 | Med      | 3.1              | PP                  | <b>Carteret County Governing Board,</b><br>Municipal Governing Boards                             | To Be Determined | GF, HMGP                  | Other - Reviewed Annually | Carry Forward | Carteret County and Pine Knoll Shores maintain contractors for generators and storm cleanup. Beaufort maintains a contractor for storm debris removal. Cedar Point maintains contracts with two separate post-disaster recovery service providers. The current contracts were entered into in June 2024.   |
| CA7      | Hold a public information meeting (once annually) aimed at educating the public and elected officials about the jurisdictions' overall vulnerability to natural and man-made hazards, and the jurisdictions' hazard mitigation efforts.                     | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards  | High     | 2.2              | PIO                 | <b>Carteret County Emergency Services,</b><br>Carteret County Planning, Municipal Administrations | Staff Time       | GF                        | 1 Year                    | Carry Forward | Carteret County Emergency Services holds an annual hurricane expo prior to hurricane season. Beaufort hosts <a href="#">annual information meetings</a> , most recently alongside the National Weather Service. Cedar Point held a public information meeting in August 2024 during a Board of Commissioners Work Session. Pine Knoll Shore Emergency Management holds a hazard mitigation conference at least annually. The Strategic Planning Committee routinely brings in subject matter experts to learn how to be more resilient against man-made and natural hazards. |
| CA8      | Continue to maintain the County's Crisis Management System to efficiently deal with emergency situations. These efforts will involve training for officials and relevant staff regarding use of the program.  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 4.2              | ES                  | <b>Carteret County Emergency Services,</b><br>Carteret County Planning                            | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years    | Carry Forward | Carteret County Emergency Services provides annual training to officials and all relevant staff on the County's Crisis Management system. Carteret County conducts an annual EOC activation exercise.  |

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed  | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources             | Implementation Schedule        | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|--|----------|------------------|---------------------|---|------------------|---------------------------------------|--------------------------------|---------------|--|
| CA9      | Meet annually with all electric service providers operating within the County prior to hurricane season, in preparation for the effects of severe weather, and will provide the preliminary planning steps required for effective post-disaster recovery.              | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Earthquake, Dam & Levee Failure | Med      | 4.2              | ES                  | <b>Carteret County Emergency Services,</b> Municipal Administrations                                      | Staff Time       | GF, NCDPS, Electric Service Providers | Other - meet annually          | Carry Forward | Carteret County Emergency Services meets annually with electric service providers. Pine Knoll Shores continues to meet annually with Carteret Craven Electric Co-Op to address utility concerns and post-disaster recovery. Cedar Point held a telephone conference with electric service providers.   |
| CA10     | Maintain all property acquired within the Special Flood Hazard Area (SFHA) as undisturbed open space in perpetuity. Continue to proactively establish open space within the floodplain and floodway as HMGP grant funds become available to carry out this initiative. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricane & Coastal Hazards, Dam & Levee Failure   | High     | 1.2              | NRP                 | <b>Carteret County Planning,</b> Municipal Administrations  | Staff Time       | GF, NCDPS                             | Ongoing - next 5 years         | Carry Forward | Carteret County and Pine Knoll Shores will maintain property within the SFHA acquired with FMA or HMGP funding as undisturbed open space. Carteret County will continue to seek FMA/HMGP funding for open space preservation. Beaufort has not acquired any property within the SFHA with FMA or HMGP funding. Cedar Point actively protects its 56-acre park and is looking for other parcels to acquire with grant funds.  |
| CA11     | Integrate, when feasible, new greenway and public park improvements into comprehensive planning and capital improvement efforts (including coordination with the County's certified CAMA Land Use Plans).  | Carteret County, Beaufort, Morehead City  | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure  | High     | 1.2              | P, SP               | <b>Carteret County Parks and Recreation,</b> Carteret County Planning, Morehead City Parks and Recreation | To Be Determined | GF, NCDEQ                             | Other - as opportunities arise | Carry Forward | The County updated and adopted its CAMA LUP in 2021/22 and these items have been incorporated into the updated CAMA LUP. Beaufort's new Parks & Recreation Comprehensive Plan (2024), CAMA and Comprehensive Land Use Plan (2023), the Resilient Beaufort plan (2018) emphasize greenway and park establishment, expansion, and improvement. Pine Knoll Shores is currently updating its certified CAMA Land Use plan and pedestrian master plan this year and will incorporate these items into the updated plan. |

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)                 | Estimated Cost       | Potential Funding Sources   | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|---|---|---|----------|------------------|---------------------|--|----------------------|-----------------------------|-------------------------|---------------|--|
| CA13     | Review and update respective Flood Damage Prevention Ordinances as deemed necessary. Once annually, all jurisdictions will conduct a review to ensure that the current FDPO is compliant with all FEMA and NCEM mandates. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | Med      | 1.2              | PP                  | <b>Carteret County Planning, Municipal Administrations</b> | Staff Time           | GF, NCDPS                   | Ongoing - next 5 years  | Carry Forward | Carteret County amended and updated its FDPO in 2020 and again in 2023 to align with the State's most recent edition of the Coastal Model Ordinance and to incorporate new Coastal A flood zone construction standards. The current adopted FDPO is in compliance with all State and Federal floodplain management requirements. Beaufort is beginning a comprehensive update to land development ordinances to create a new Unified Development Ordinance, which will include the integration and modernization of the Town's Flood Damage Prevention Ordinance in accordance with current best practices and guidance from FEMA and NCEM. Pine Knoll Shores has recently updated its flood protection ordinance. Cedar Point updated its Flood Damage Prevention Ordinance in preparation of new FEMA maps that took effect June 19, 2020. A subsequent review was made to determine compliance with NCGS 160-D. |
| CA14     | Strive to maintain respective CRS ratings through implementation of a comprehensive floodplain management program.  | Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores                                | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 3.2              | P, PP               | <b>Carteret County Planning, Municipal Administrations</b> | \$15,000/ Staff Time | GF, NCDPS, HMGP, BRIC, UHMA | Ongoing - next 5 years  | Carry Forward | Carteret County is now a CRS Class 9. County staff will continue to provide CRS recertification documentation on an annual basis and conduct credited activities to maintain this rating. Staff will continually look for ways to improve the CRS rating. Beaufort's Class 7 CRS rating is maintained through annual outreach and reporting efforts. Staff will work towards a class reduction at the next cycle visit. Pine Knoll Shores continues to participate in the CRS program will provide documentation to maintain class 6 CRS rating. Cedar Point actively seeks to maintain and improve its CRS rating.  |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)                    | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|--|--|---|----------|------------------|---------------------|---|------------------|---------------------------|-------------------------|---------------|---|
| CA15     | Maintain a map information service involving the following:<br>(1) Provide information relating to Flood Insurance Rate Maps (FIRMs) to all inquirers, including a provision of information on whether a given property is located with a flood hazard area;<br>(2) Provide information regarding the flood insurance purchase requirement;<br>(3) Maintain historical and current FIRMs;<br>(4) Advertise once annually in the local newspaper the availability of FIRMs; and<br>(5) Provide information to inquirers about local floodplain management requirements. | Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 2.2              | PIO                 | <b>Carteret County Planning,</b><br>Municipal Administrations | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Carteret County and Pine Knoll Shores continue to provide a map information service to residents/visitors/ property owners/real estate agents and anyone else inquiring about FIRM information.<br>Beaufort maintains paper FIRMs in Town Hall in the Planning & Inspections Department. The town tracks map changes, annexations, new subdivisions, LOMR/LOMAs, and other FIRM changes in digital and paper format. Digital versions are stored on the server, which is backed up to a cloud system. The town further maintains all paper FIRMs dating prior to 1999. Beaufort conferences with contractors, property owners, real estate agents, developers, and other interested parties regarding the FIRMs, flood insurance purchase requirement, and applicable floodplain management requirements.<br>Cedar Point maintains both paper and digital (GIS and PDF) maps of the most recent FIRM. |
| CA16     | Mail a notice annually to all property owners in an effort to educate citizens about dangers associated with flooding in low-lying coastal areas.  | Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 2.2              | PIO                 | <b>Carteret County Planning,</b><br>Municipal Administrations | To Be Determined | GF, NCDPS                 | Other - Once Annually   | Carry Forward | Carteret County mails all property owners a flood tips brochure each year with their tax bill regardless of flood zone. 100% of property owners receive this flood tips brochure. Additionally, property owners in Repetitive Loss Areas (RLAs) receive annual notification on their susceptibility to flooding and grant opportunities.<br>Beaufort also provides information throughout the year in the Town's newsletter with the monthly water/sewer bill mailings.   |

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)                    | Estimated Cost | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|---|---|---|----------|------------------|---------------------|---|----------------|---------------------------|-------------------------|---------------|---|
| CA17     | Make information regarding hazards and development regulations within floodplains available through:<br>(1) Ensure that the local library maintains information relating to flooding and flood protection;<br>(2) Provide a link on the county website to FEMA resources addressing flooding and flood protection;<br>(3) Provide a link on all participating municipalities' websites to FEMA resources addressing flooding and flood protection, evacuation procedures, disaster preparedness, and post-disaster recovery; and<br>(4) Provide website links to relevant hazard mitigation websites.<br>(5) Provide information to local real estate agents. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | Med      | 2.2              | PIO                 | <b>Carteret County Planning,</b><br>Municipal Administrations | Staff Time     | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Carteret County maintains links to numerous FEMA and NFIP resources on its Carteret County Flood Information website and emergency preparedness website. Beaufort staff annually confirms that flood information is maintained at the Beaufort Branch Carteret County Public Library; several links to relevant resources are found in the <a href="#">Hurricane Preparedness/Flood Information website</a> and throughout the Town website; and information is provided to local real estate agents as part of Community Rating System outreach. Cedar Point and Pine Knoll Shores maintain links to FEMA resources on their websites. |
| CA18     | Support the efforts of the Carteret County Local Emergency Planning Committee (LEPC) in their effort to address hazards associated with the storage of chemicals, noxious waste material and bulk fuel.   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Hurricanes & Coastal Hazards, Flooding                      | Low      | 4.2              | ES                  | <b>Carteret County LEPC</b>                                   | Staff Time     | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Carteret County is working on getting a more active LEPC. Staff from Pine Knoll Shores will continue to participate in the LEPC.  |
| CA19     | Continue to monitor water resources to mitigate the impacts of drought conditions. These efforts will include maintaining a local water shortage ordinance. This ordinance will be activated in coordination with all utility providers as the need arises.   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Drought   | Med      | 1.5              | P, NRP              | <b>Carteret County Planning,</b><br>Municipal Administrations | Staff Time     | GF, NCDEQ                 | Other - As necessary    | Carry Forward | Carteret County continually monitors water resources and maintains a water shortage ordinance. Beaufort's Public Utilities Department monitors water availability and has a <a href="#">water shortage ordinance</a> for emergencies. Pine Knoll Shores continually monitors water resources. The town does not currently have a water shortage ordinance but will investigate this moving forward. Cedar Point Public Works Department tracks/reviews rainfall data.   |

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources   | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|---|---|---|----------|------------------|---------------------|--|----------------|-----------------------------|-------------------------|---------------|--|
| CA20     | Collaborate to provide education and training to local government officials to broaden understanding of public policy relating to hazard mitigation.  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | All Hazards   | Low      | 4.2              | PIO                 | <b>Carteret County Emergency Services,</b><br>Carteret County Administration, Municipal Administration           | Staff Time     | GF                          | Other - Annually        | Carry Forward | County staff attend meetings of the Carteret County Floodplain Administrators group and support efforts to provide training to local government officials. The County employs two CFMs. Beaufort and Pine Knoll Shores staff participate in meetings of Carteret County's Floodplain Administrators group. Beaufort employs one CFM with another staff member training to become CFM by the end of 2025. Pine Knoll Shores employs two CFMs. Cedar Point seeks opportunities for education of officials.   |
| CA21     | Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLPs) and other high risk properties from future flooding events. The County will maintain a list of RLPs, and on an annual basis, will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Carteret County will assist all municipal jurisdictions in working through the structural mitigation grant funding process. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 3.1              | PP                  | <b>Carteret County Planning Department,</b><br>Carteret County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS, HMGP, BRIC, UHMA | Ongoing - next 5 years  | Carry Forward | Carteret County continues to aggressively seek out grant funding for elevating RLPs and SRLPs and is currently administering a grant program to rehabilitate and mitigate properties during recent hurricanes. The County also maintains an up-to-date list of all RLPs and SRLPs in the County. Beaufort provides information on available funding to property owners and provides assistance with the application process as possible. Pine Knoll Shores continues to aggressively seek grant funding for elevating RLPs. This is a particular challenge because Pine Knoll Shores generally is not favorable for grant opportunities. Cedar Point will be seeking participants from the Repetitive Loss List to assist with mitigation through the FMA program. |



| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources    | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|---|----------|------------------|---------------------|--|----------------|------------------------------|-------------------------|---------------|--|
| CA22     | <p>Increase the availability of skilled contractors to perform needed work post hazard by:</p> <ul style="list-style-type: none"> <li>Developing a partnership with major local contractors in selected areas (roofing, tree trimming, etc.), such that they will deploy resources and skilled contractors to affected areas as needed.</li> <li>Creating local contractor retention plan (perhaps with incentives related to permits, commitments for County/City projects, a reduction in community college tuition, etc.) to reduce the flight of local skilled labor.</li> </ul>   | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorms, Severe Winter Weather, Earthquake, Dam & Levee Failure | Med      | 2.2              | PP                  | <b>Carteret County Planning Department,</b><br>Carteret County Board of Commissioners, Municipal Administrations | Staff Time     | GF                           | 2 to 3 years            | Carry Forward | Carteret County has a team of licensed building inspectors that continually work with local contractors to streamline the building and debris removal process immediately after an emergency or disaster situation. Beaufort works with local and traveling contractors to ensure proper permitting and inspections are provided for post-hazard work.       |
| CA23     | <p>Improve awareness regarding the intensity of natural hazard events as they materialize and subside by:</p> <ul style="list-style-type: none"> <li>Establishing an emergency radio broadcast frequency that runs a recorded message pre- and post-hazard to communicate critical-time sensitive information. It could include things like routes/ bridges that are open or closed, weather/hazard forecasts, location of emergency shelters.</li> <li>More fully utilizing County/Town websites to provide pre-hazard and post-hazard recovery information (debris pick up schedule, critical dates, forms, phone numbers, housing availability, etc.).</li> </ul> | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Earthquake, Dam & Levee Failure  | High     | 2.2              | ES                  | <b>Carteret County Emergency Services,</b><br>Carteret County Board of Commissioners, Municipal Administrations  | Staff Time     | GF                           | 2 to 3 years            | Carry Forward | Beaufort provides access to a mass notification platform called Regroup to broadcast emergency messaging via email, text message/SMS, and voice call, with <a href="#">online signup</a> . Beaufort utilizes social media platforms, "sunshine list" emails, and website posting for emergency messaging in addition to emergency alerts and press releases. |
| CA24     | <p>Continue to coordinate annually with the NC Forest Service to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards.</p>  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Wildfire  | High     | 4.1              | PP                  | <b>Carteret County Emergency Services,</b><br>Carteret County Board of Commissioners, Municipal Administrations  | Staff Time     | GF, NC Forest Service, NCDPS | Other - Annually        | Carry Forward | In Progress. Carteret County coordinates with NC Forest Service on wildfire mitigation and preparedness.   |

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed                     | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost            | Potential Funding Sources                | Implementation Schedule | 2025 Status | 2025 Status Comments/Explanation |
|----------|---|---|---------------------------------------|----------|------------------|---------------------|---|---------------------------|--|-------------------------|-------------|----------------------------------|
| CA25     | Conduct wildfire risk assessments in all participating communities, engage residents, and co-create individual mitigation action plans to protect people, property, and natural resources from wildland fire. | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Wildfire                              | Med      | 4.1              | P, PP               | <b>Carteret County Emergency Services,</b><br>Municipal Administrations                 | Staff Time                | GF, NC Forest Service, NCDPS             | 3-5 years               | New         |                                  |
| CA26     | Improve stormwater management planning and implement stormwater improvement projects.   | Emerald Isle  | Flooding, Hurricane & Coastal Hazards | High     | 1.3              | SP                  | <b>Emerald Isle Planning Department</b>   | TBD; will vary by project | GF, BRIC, HMGP, State grant funds, NCDEQ | 3-5 years               | New         |                                  |
| CA27     | Support beach preservation efforts through the Carteret County Shoreline Protection Office, including stabilizing erosion hazard areas.   | Carteret County, Emerald Isle   | Flooding, Hurricane & Coastal Hazards | Med      | 1.3              | SP                  | <b>Carteret County Shoreline Protection Office,</b><br>Emerald Isle Planning Department | TBD                       | Local funds                              | 3-5 years               | New         |                                  |
| CA28     | Create or Update Community Wildfire Protection Plans in each fire district  | Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores | Wildfire                              | Med      | 4.1              | P, PIO              | <b>Carteret County Staff,</b><br>NC Forest Service                                      | To Be Determined          | Grant Funds                              | 3-5 years               | New         |                                  |

# ANNEX C CRAVEN COUNTY

## C.1 ASSET INVENTORY

Craven County and the HMPC provided a local inventory of critical facilities and community lifelines, which are a priority for mitigation planning and emergency management. Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. Table C.1 through Table C.9 provides a count of critical facilities by FEMA lifeline category by jurisdiction in Craven County. Figure C.1 through Figure C.9 show the locations of all critical facilities in Craven County and participating jurisdictions.

Table C.10 provides a detailed inventory of the critical facilities in Craven County, indicating each facility's FEMA lifeline category, flood zone, 1% annual chance flood depth, and vulnerability to storm surge, sea level rise, and wildfire. More information on hazard vulnerability is provided in the hazard profiles.

**Table C.1 – Critical Facilities by Type, Unincorporated Craven County**

| Facility Type            | Count of Facility Type | Structure Value     |
|--------------------------|------------------------|---------------------|
| Communications           | 0                      | \$0                 |
| Energy                   | 0                      | \$0                 |
| Food, Hydration, Shelter | 74                     | \$21,930,220        |
| Hazardous Materials      | 0                      | \$0                 |
| Health and Medical       | 4                      | \$0                 |
| Safety and Security      | 33                     | \$3,072,220         |
| Transportation           | 0                      | \$0                 |
| Water Systems            | 58                     | \$29,551,810        |
| <b>Total</b>             | <b>169</b>             | <b>\$54,554,250</b> |

**Table C.2 – Critical Facilities by Type, City of Havelock**

| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 11                     | \$0                |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 1                      | \$0                |
| Safety and Security      | 4                      | \$2,029,100        |
| Transportation           | 0                      | \$0                |
| Water Systems            | 5                      | \$2,055,600        |
| <b>Total</b>             | <b>21</b>              | <b>\$4,084,700</b> |

**Table C.3 – Critical Facilities by Type, City of New Bern**

| Facility Type            | Count of Facility Type | Structure Value      |
|--------------------------|------------------------|----------------------|
| Communications           | 0                      | \$0                  |
| Energy                   | 0                      | \$0                  |
| Food, Hydration, Shelter | 14                     | \$56,726,600         |
| Hazardous Materials      | 0                      | \$0                  |
| Health and Medical       | 27                     | \$257,056,000        |
| Safety and Security      | 11                     | \$1,425,300          |
| Transportation           | 0                      | \$0                  |
| Water Systems            | 4                      | \$0                  |
| <b>Total</b>             | <b>56</b>              | <b>\$315,207,900</b> |

**Table C.4 – Critical Facilities by Type, Town of Bridgeton**

| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 0                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 0                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 2                      | \$0             |
| Transportation           | 0                      | \$0             |
| Water Systems            | 4                      | \$0             |
| <b>Total</b>             | <b>6</b>               | <b>\$0</b>      |

**Table C.5 – Critical Facilities by Type, Town of Cove City**

| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 0                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 0                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 2                      | \$7,180         |
| Transportation           | 0                      | \$0             |
| Water Systems            | 2                      | \$0             |
| <b>Total</b>             | <b>4</b>               | <b>\$7,180</b>  |

**Table C.6 – Critical Facilities by Type, Town of Dover**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 0                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 0                      | \$0              |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 0                      | \$0              |
| Safety and Security      | 1                      | \$416,300        |
| Transportation           | 0                      | \$0              |
| Water Systems            | 4                      | \$405,730        |
| <b>Total</b>             | <b>5</b>               | <b>\$822,030</b> |

**Table C.7 – Critical Facilities by Type, Town of River Bend**

| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 0                      | \$0                |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 1                      | \$5,643,300        |
| Safety and Security      | 3                      | \$244,010          |
| Transportation           | 0                      | \$0                |
| Water Systems            | 13                     | \$347,150          |
| <b>Total</b>             | <b>17</b>              | <b>\$6,234,460</b> |

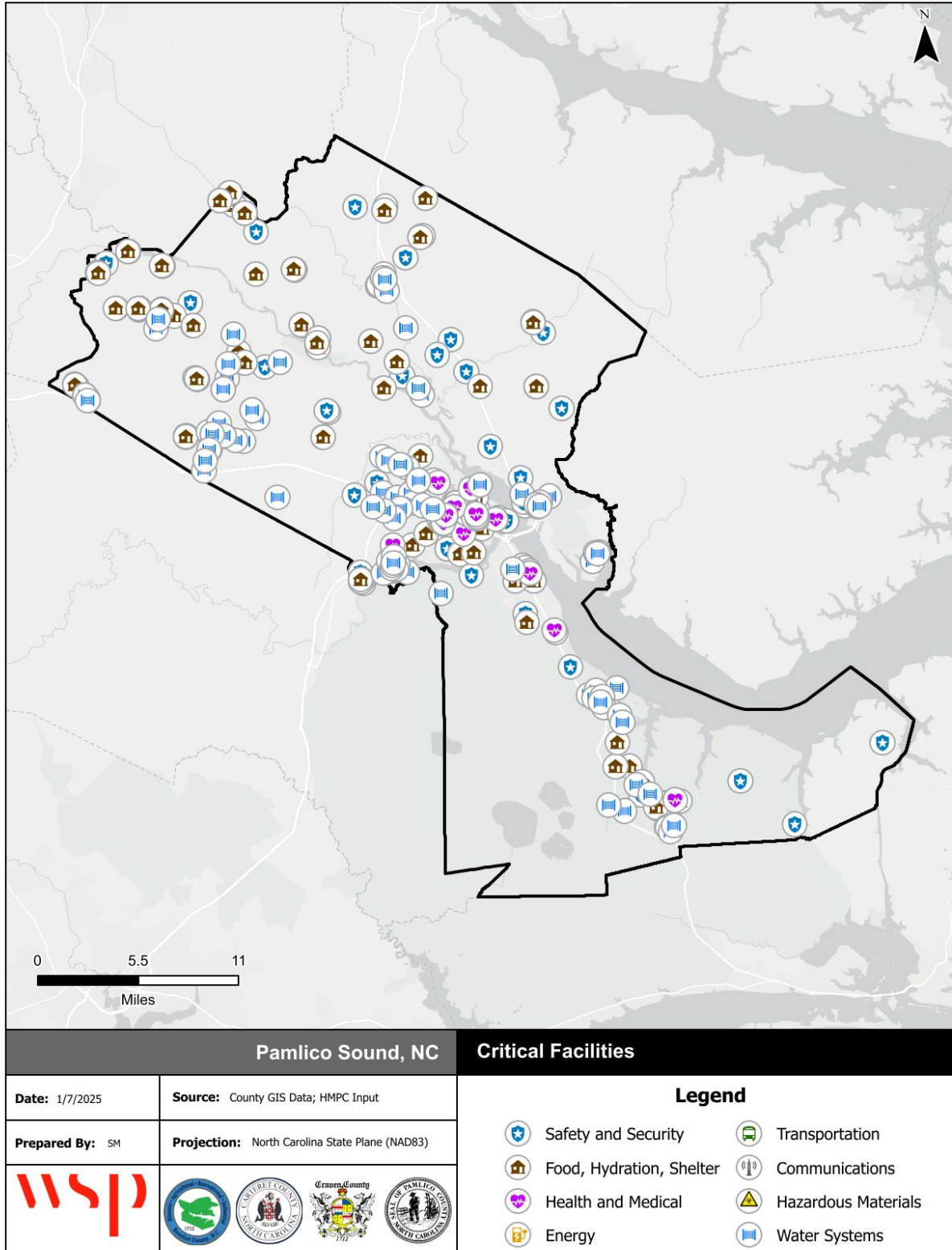
**Table C.8 – Critical Facilities by Type, Town of Trent Woods**

| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 0                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 1                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 2                      | \$0             |
| Transportation           | 0                      | \$0             |
| Water Systems            | 0                      | \$0             |
| <b>Total</b>             | <b>3</b>               | <b>\$0</b>      |

**Table C.9 – Critical Facilities by Type, Town of Vanceboro**

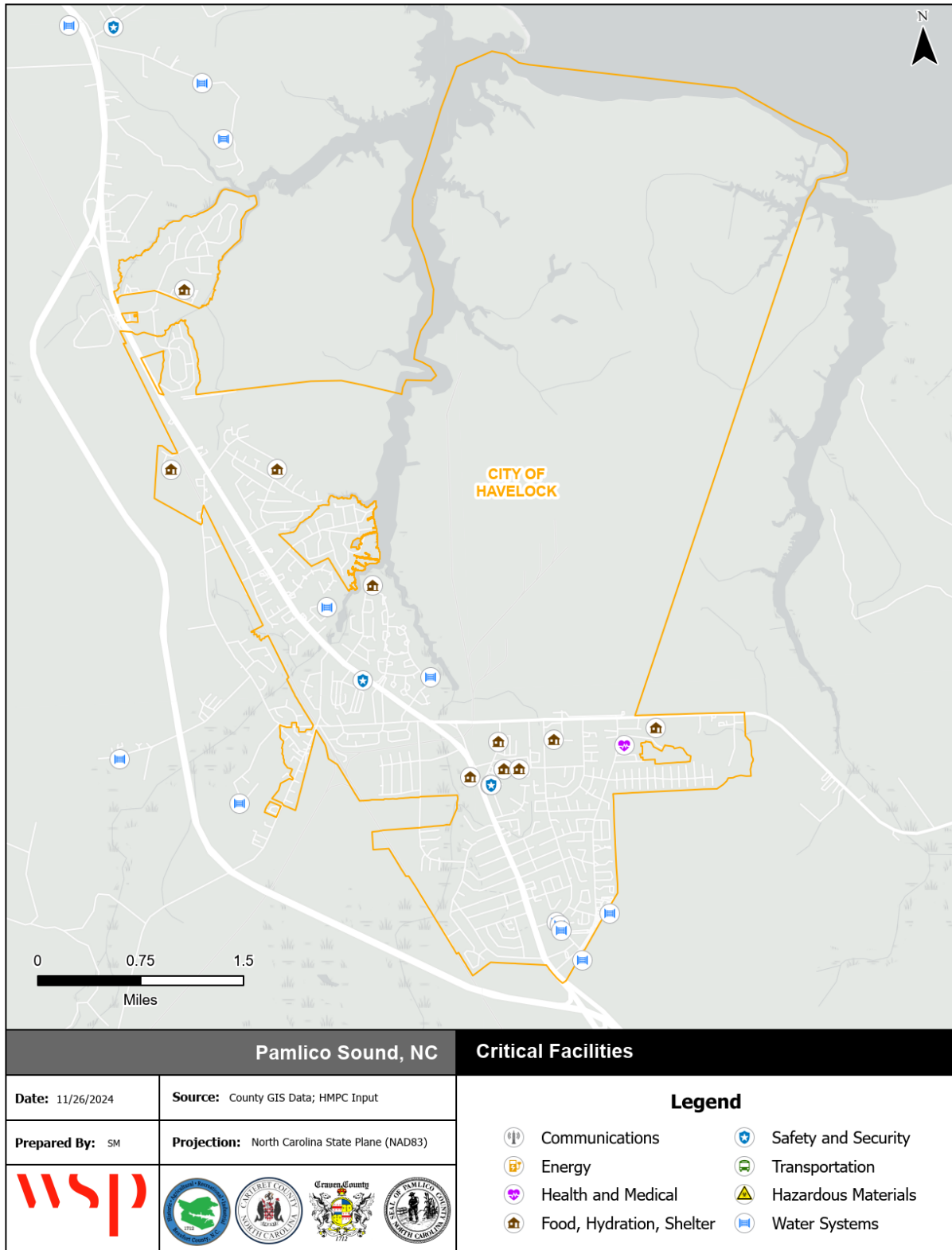
| <b>Facility Type</b>     | <b>Count of Facility Type</b> | <b>Structure Value</b> |
|--------------------------|-------------------------------|------------------------|
| Communications           | 0                             | \$0                    |
| Energy                   | 0                             | \$0                    |
| Food, Hydration, Shelter | 1                             | \$0                    |
| Hazardous Materials      | 0                             | \$0                    |
| Health and Medical       | 1                             | \$0                    |
| Safety and Security      | 2                             | \$0                    |
| Transportation           | 0                             | \$0                    |
| Water Systems            | 3                             | \$0                    |
| <b>Total</b>             | <b>7</b>                      | <b>\$0</b>             |

Figure C.1 – Critical Facilities, Craven County



Source: NCEM IRISK Database, HMPC input, GIS Analysis

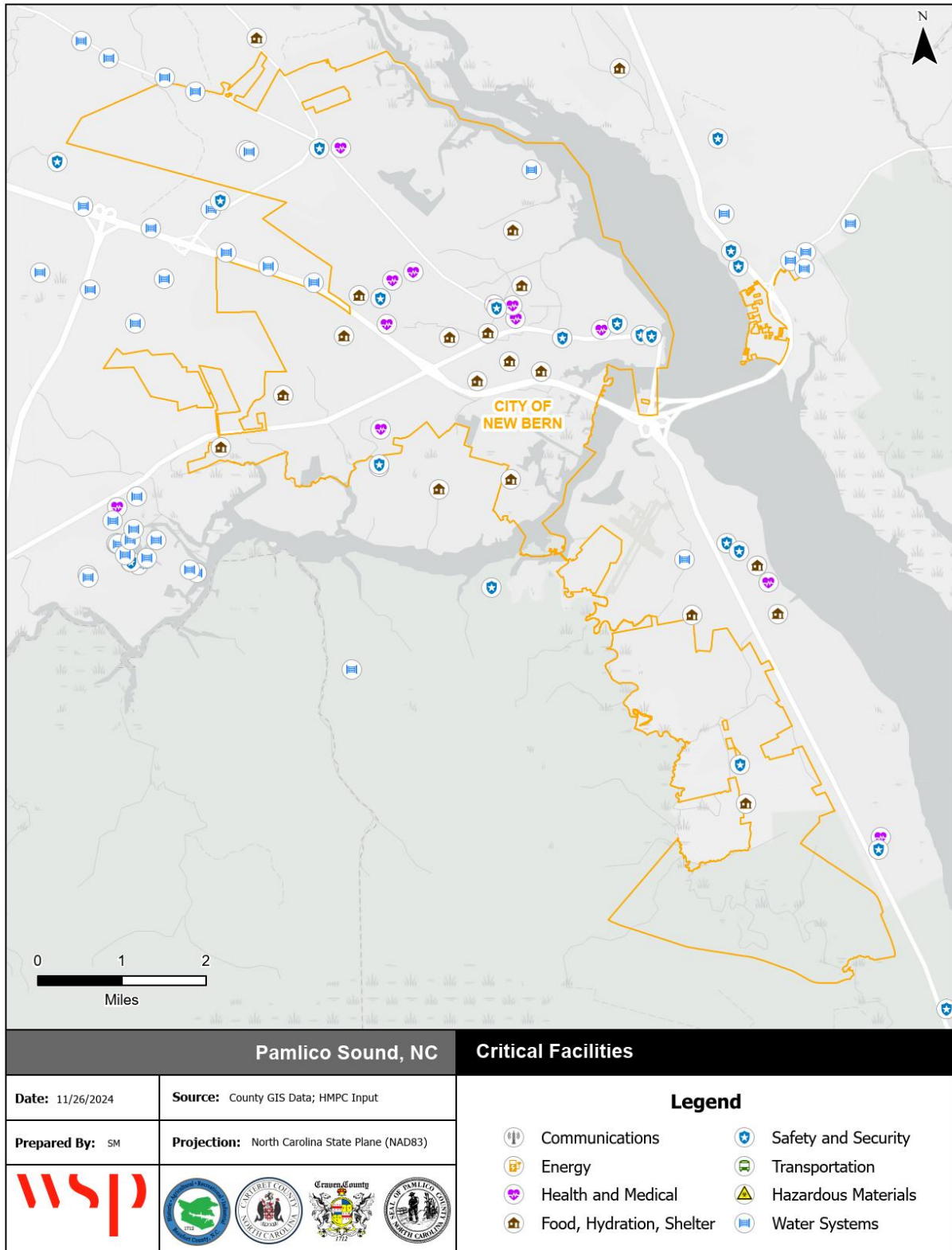
Figure C.2 - Critical Facilities, City of Havelock



Source: NCEM IRISK Database, HMPC input, GIS Analysis

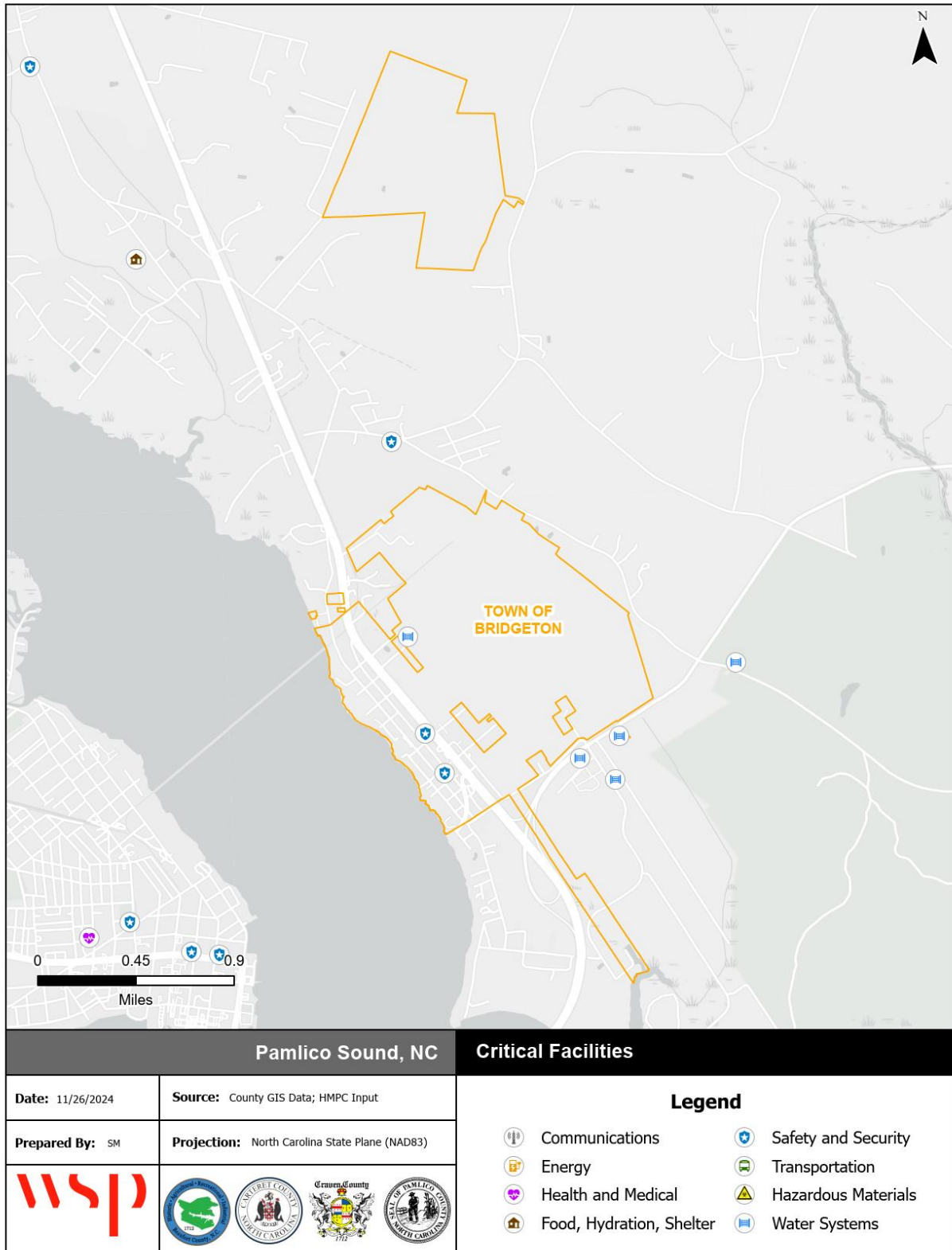


Figure C.3 - Critical Facilities, City of New Bern



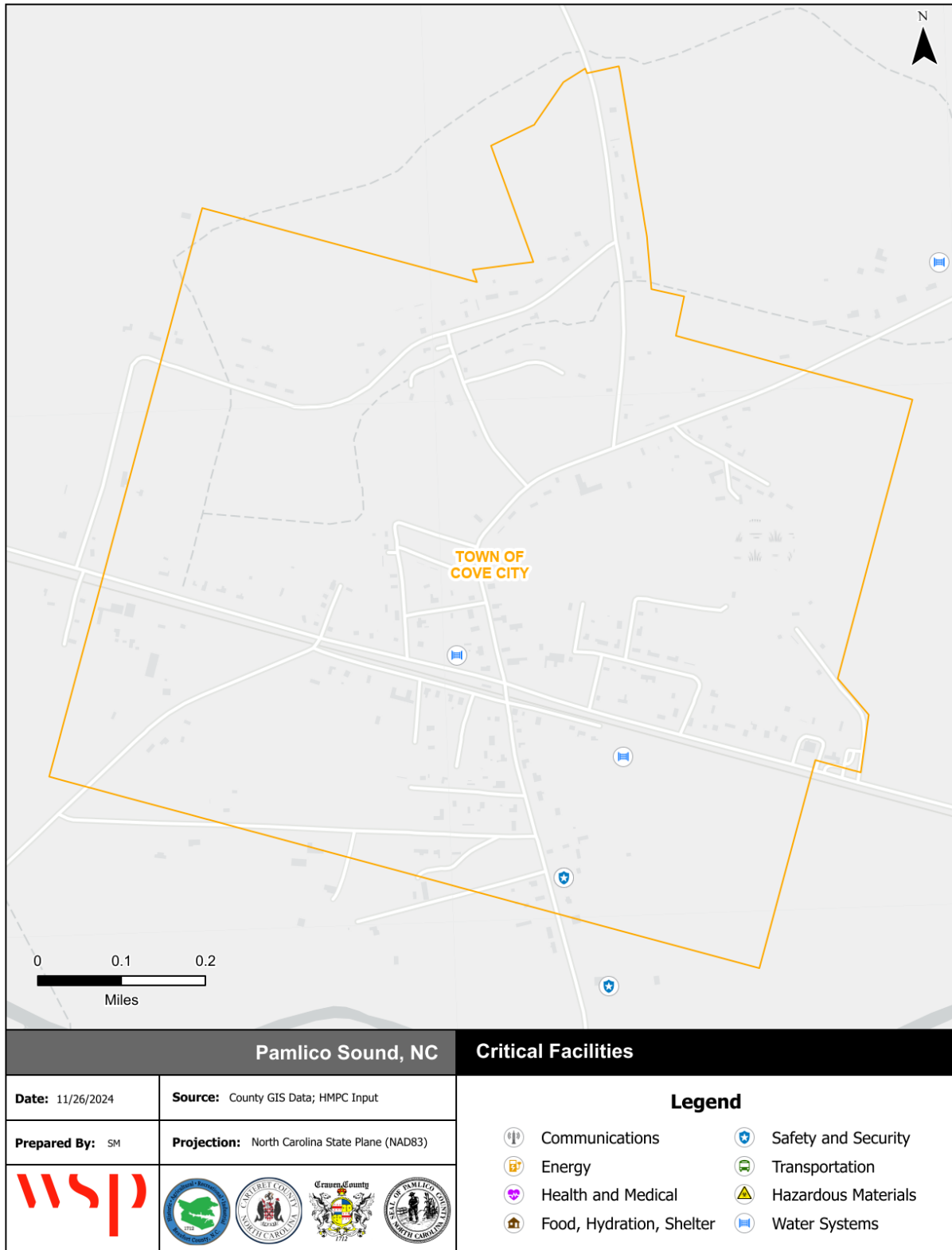
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure C.4 - Critical Facilities, Town of Bridgeton



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure C.5 - Critical Facilities, Town of Cove City



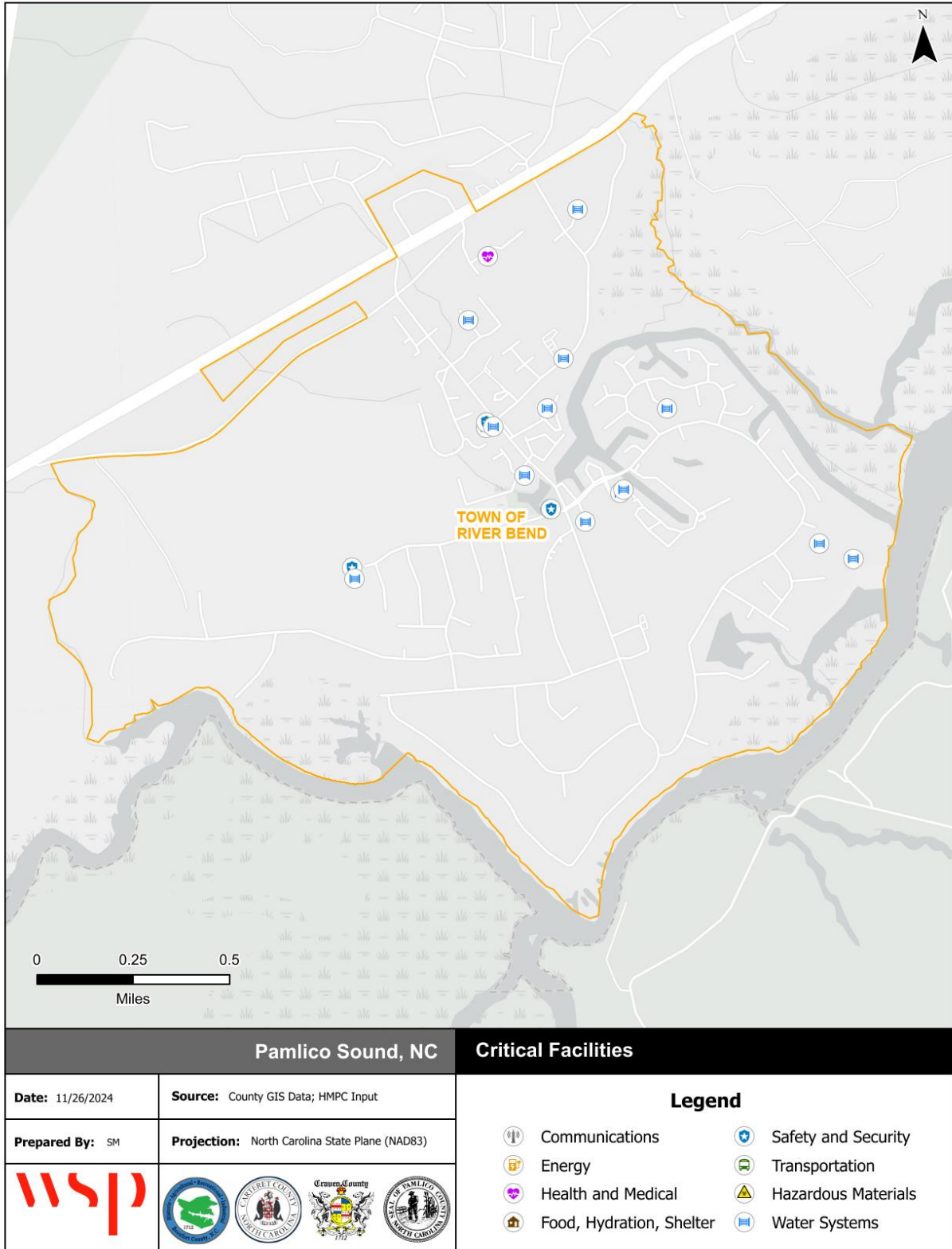
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure C.6 - Critical Facilities, Town of Dover



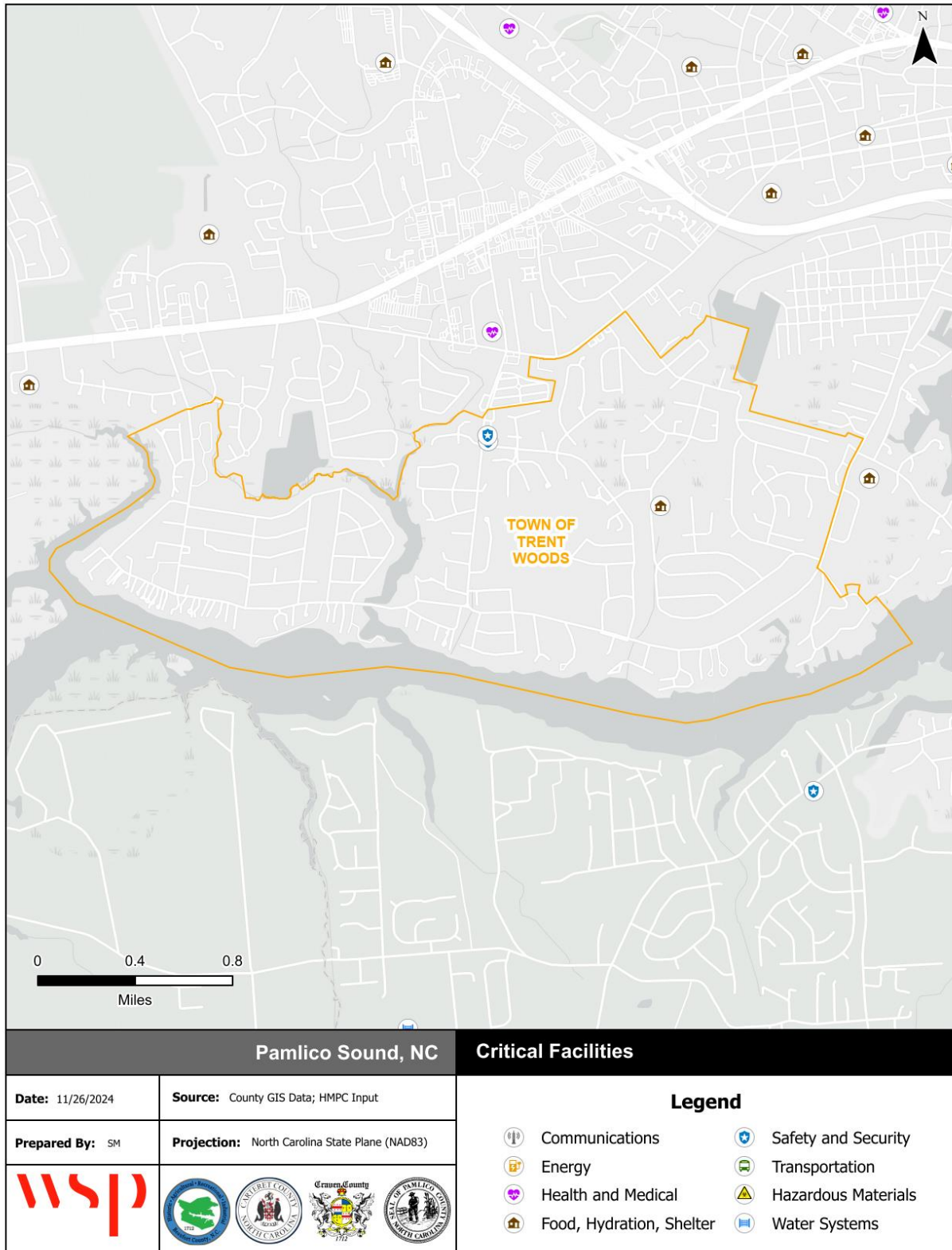
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure C.7 - Critical Facilities, Town of River Bend



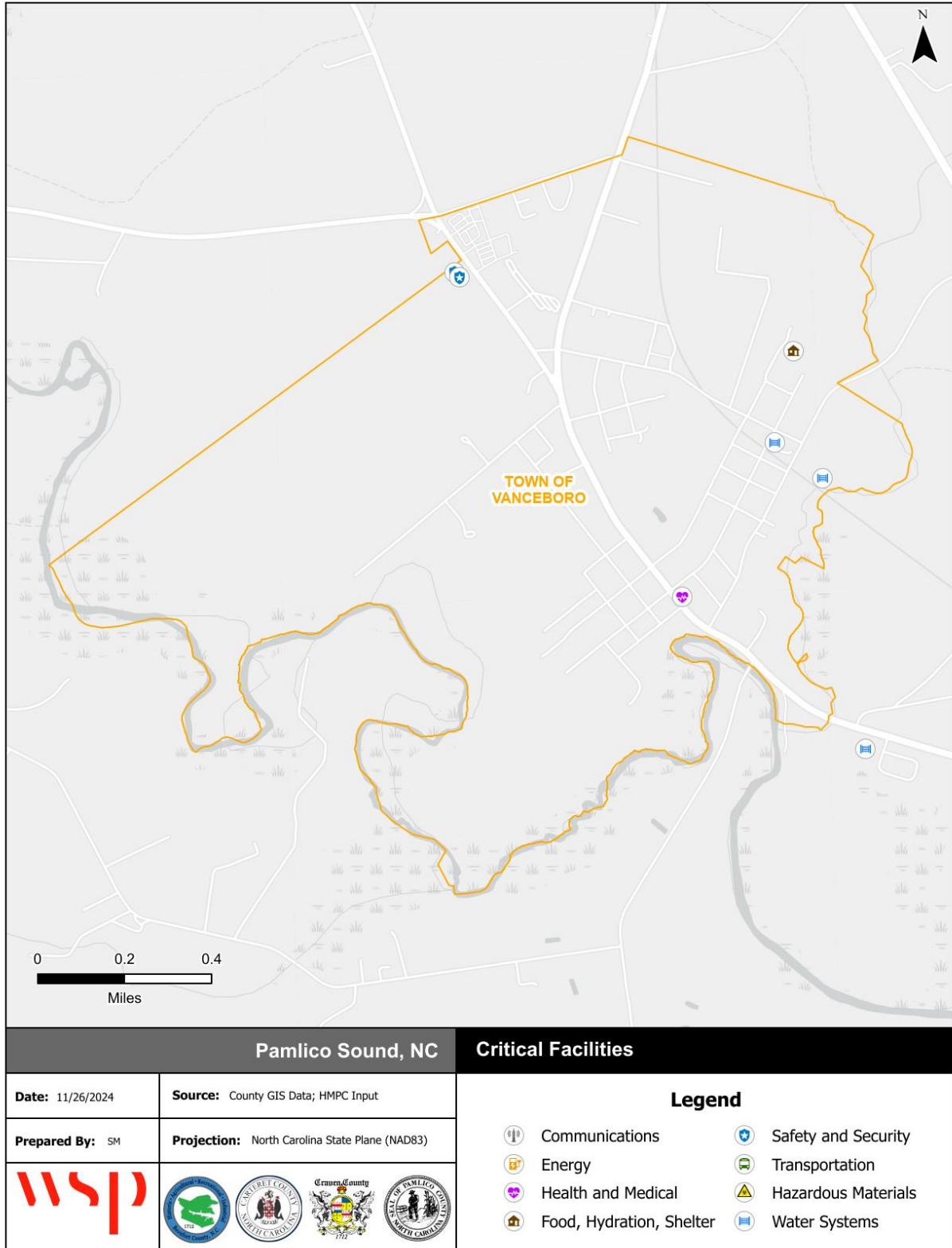
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure C.8 - Critical Facilities, Town of Trent Woods



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure C.9 - Critical Facilities, Town of Vanceboro



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Table C.10 – Craven County Critical Facilities Inventory

| FEMA Lifeline                       | Facility Type                | Address                                | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR?! | Burn Probability | Fire Intensity |
|-------------------------------------|------------------------------|--|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| <b>Unincorporated Craven County</b> |                              |  |                 |            |             |                     |                       |             |                  |                |
| Water Systems                       | Water Treatment Distribution | -                                      | \$138,210       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 1                | 6              |
| Water Systems                       | Water Treatment Distribution | -                                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 0              |
| Water Systems                       | Water Treatment Distribution | -                                      | \$108,310       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Water Systems                       | Water Treatment Distribution | -                                      | \$87,060        | AE         | 7.0         | NA                  | NA                    | Y           | 0                | 5              |
| Water Systems                       | Water Treatment Distribution | -                                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Water Systems                       | Water Treatment Distribution | -                                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 0              |
| Water Systems                       | Water Treatment Distribution | -                                      | \$159,420       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 4              |
| Water Systems                       | Water Treatment Distribution | -                                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Water Systems                       | Water Treatment Distribution | -                                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 8              |
| Water Systems                       | Sewer Treatment              | 1610 Old Airport Road                  | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 4                | 3              |
| Water Systems                       | Sewer Treatment              | Vanceboro WWTP                         | \$5,540         | AE         | 3.1         | 10                  | 3                     | -           | 3                | 5              |
| Water Systems                       | Sewer Treatment              | Neuse River                            | \$1,103,500     | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 4              |
| Water Systems                       | Sewer Treatment              | Stately Pines WWTP                     | \$253,520       | AE         | 6.7         | 3                   | 4                     | Y           | 5                | 7              |
| Water Systems                       | Public Water Supply          | 9479 Old US 70/<br>1.4mi. E. Cove City | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Water Systems                       | Public Water Supply          | 9830 Old US 70<br>8mi. E Cove City     | \$0             | AE         | 0.1         | NA                  | NA                    | Y           | 0                | 6              |
| Water Systems                       | Public Water Supply          | 290-Trenton Rd.<br>1mi. S Cove City    | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 7              |
| Water Systems                       | Public Water Supply          | 400 Trenton Rd                         | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Water Systems                       | Public Water Supply          | 1555 NC 55 Hwy<br>West                 | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Water Systems                       | Public Water Supply          | 1815 NC 55 Hwy<br>West                 | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 3              |
| Water Systems                       | Public Water Supply          | 100 S. Warren<br>Road                  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Water Systems                       | Public Water Supply          | 200 N. Duffy Road                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 7              |
| Water Systems                       | Public Water Supply          | 400 N. Duffy Road                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 5              |
| Water Systems                       | Public Water Supply          | 520 N. Duffy Road                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 6              |
| Water Systems                       | Public Water Supply          | 500 N. Duffy Road                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 2              |
| Water Systems                       | Public Water Supply          | 600 N. Duffy Road                      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 8              |
| Water Systems                       | Public Water Supply          | 460 N. Warren<br>Road                  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 7              |
| Water Systems                       | Public Water Supply          | 400 N. Warren<br>Road                  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 8              |



**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline | Facility Type       | Address  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR!? | Burn Probability | Fire Intensity |
|---------------|---------------------|--|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems | Public Water Supply | 200 N. Warren Road   | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 7              |
| Water Systems | Public Water Supply | 100 Mansfield Road   | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 7              |
| Water Systems | Public Water Supply | 81 Beaman Road   | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 3              |
| Water Systems | Public Water Supply | Brown Blvd on east side of McCotter Canal                              | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 7              |
| Water Systems | Public Water Supply | Access Rd 500 Ft SE of McCotter Blvd and US-70, 2500 Ft down access Rd | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 7              |
| Water Systems | Public Water Supply | 2770 Wintergreen Road  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Water Systems | Public Water Supply | 750 Dover Road   | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Water Systems | Public Water Supply | 3270 Dover Ft Barnwell Rd (SR 1262)                                    | \$7,910         | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 4              |
| Water Systems | Public Water Supply | 7610 NC Hwy 55 W   | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 4              |
| Water Systems | Public Water Supply | 2035 Wintergreen Road  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 4              |
| Water Systems | Public Water Supply | 3270 Dover Ft Barnwell Rd  | \$7,910         | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 4              |
| Water Systems | Public Water Supply |  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 4              |
| Water Systems | Public Water Supply | 2770 Wintergreen Road  | \$205,130       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Water Systems | Public Water Supply | 750 Dover Road   | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Water Systems | Public Water Supply | 7610 NC Hwy 55 W   | \$0             | AE         | 7.5         | 5                   | 1                     | -           | 0                | 6              |
| Water Systems | Public Water Supply | South end of MHP   | \$259,500       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 5              |
| Water Systems | Public Water Supply | South End of the Park on Left  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 7              |
| Water Systems | Public Water Supply | Sales Office across from Fairfield Harbor Front Gate                   | \$0             | AE         | 0.3         | 8                   | 2                     | Y           | 2                | 5              |
| Water Systems | Public Water Supply | Caracara Dr next to Golf   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 3              |
| Water Systems | Public Water Supply | Storage & Pump Station; 575 Broadcreek Rd.                             | \$239,600       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 5              |
| Water Systems | Public Water Supply | South Side of Filter Plant   | \$13,488,100    | X Shaded   | 0.1         | NA                  | 3                     | -           | 0                | 0              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline     | Facility Type  | Address                                 | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------|--|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems     | Public Water Supply  | West Side of Property Front of the cafe | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 7              |
| Water Systems     | Public Water Supply  | Behind Region Office Bldg               | \$13,488,100    | AE         | 0.1         | NA                  | 3                     | Y           | 1                | 5              |
| Water Systems     | Water - Flanner's Beach #3   | 6440 E US Hwy 70                        | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 7              |
| Water Systems     | Water - Flanner's Beach #2   | 304 Flanner's Beach Rd                  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 4              |
| Water Systems     | Water - Well Flanner's Beach #4  | 6620 E US Hwy 70                        | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 7              |
| Water Systems     | Water - Well Flanner's Beach #5  | 105 Robertson Ln                        | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 7              |
| Water Systems     | Water - Well Stately Pines Road #2   | 6940 E US Hwy 70                        | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Water Systems     | Water - Well Stately Pines Road #3   | 6730 E US Hwy 70                        | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 7              |
| Water Systems     | Water - Well Lewis Farm Road #1  | 460 Lewis Farm Rd                       | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 0              |
| Water Systems     | Water - Potable Water Treatment Plant  | 280 Mill Dam Rd                         | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Safety & Security | Law Enforcement - Craven County Sheriffs Department / Craven County Jail                         | 1100 Clarks Rd                          | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Safety & Security | Law Enforcement - Craven County Detention Center Work Release                                    | Alligator Road                          | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 3              |
| Safety & Security | Law Enforcement - United States Forest Service - Croatan National Forest Croatan Ranger District | 141 East Fisher Avenue                  | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 6              |
| Safety & Security | Law Enforcement - North Carolina State Highway Patrol Troop A District VI                        | 1001 Downey Dr                          | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 7              |
| Safety & Security | Fire Stations - Tri-Community Volunteer Fire District  | 589 Broad Creek Road                    | \$313,400       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 3                | 0              |
| Safety & Security | Fire Stations - Fort Barnwell Volunteer Fire Department  | 102 William Pearce Road                 | \$157,200       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 2                | 5              |
| Safety & Security | Fire Stations - Little Swift Creek Volunteer Fire Department                                     | 320 Macedonia Church Road               | \$100           | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |
| Safety & Security | Fire Stations - Fort Barnwell Volunteer Fire Department  | 9327 State Highway 55 West              | \$777,100       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline     | Facility Type  | Address                      | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|-------------------|--|------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security | Fire Stations - Vanceboro Rural Volunteer Fire Department                              | 3425 River Road              | \$95,000        | AE         | 1.5         | 10                  | 2                     | Y           | 0                | 6              |
| Safety & Security | Fire Stations - Harlow Volunteer Fire Department                                       | 801 Ferry Road               | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 6                | 5              |
| Safety & Security | Fire Stations - Number 9 Township Volunteer Fire Department                            | 2431 Asbury Road             | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |
| Safety & Security | Fire Stations - Harlow Volunteer Fire Department                                       | 5161 Adams Creek Road        | \$37,100        | X Unshaded | 0.1         | 10                  | 2                     | Y           | 5                | 0              |
| Safety & Security | Fire Stations - Number 7 Township Volunteer Fire Department                            | 1705 Old Cherry Point Rd     | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Vanceboro Rural Volunteer Fire Department                              | 201 Oak Grove Road           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 8              |
| Safety & Security | Fire Stations - Little Swift Creek Volunteer Fire Department                           | 761 Antioch Road             | \$0             | AE         | 0.8         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Number 7 Township Volunteer Fire Department                            | 4530 Old Cherry Point Road   | \$63,220        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 3              |
| Safety & Security | Fire Stations - Number 7 Township Volunteer Fire Department                            | 1815 Brices Creek Road       | \$296,900       | AE         | 1.5         | 8                   | 2                     | Y           | 5                | 0              |
| Safety & Security | Fire Stations - Number 9 Township Volunteer Fire Department                            | 3783 State Highway 55 West   | \$159,600       | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 5              |
| Safety & Security | Fire Stations - Vanceboro Rural Volunteer Fire Department                              | 4080 Nc 118                  | \$732,410       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 6              |
| Safety & Security | Fire Stations - Tri-Community Volunteer Fire District                                  | 651 Truitt Road              | \$55,500        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 3              |
| Safety & Security | Fire Stations - North Carolina Division Of Forest Resources District 4 - Craven County | 690 Weyerhaeuser Road        | \$104,600       | X Unshaded | 0.1         | NA                  | 4                     | -           | 1                | 5              |
| Safety & Security | Fire Stations - Little Swift Creek Volunteer Fire Department - Main Station            | 4580 US Highway 17 North     | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security | Fire Stations - Township Six Fire Department   | 109 Carolina Pines Boulevard | \$2,020         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 3              |
| Safety & Security | Fire Stations - Little Swift Creek Volunteer Fire Department                           | 2580 Aurora Road             | \$41,470        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline            | Facility Type  | Address                       | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR!? | Burn Probability | Fire Intensity |
|--------------------------|--|-------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Safety & Security        | Fire Stations - Tri-Community Volunteer Fire District - Main Station | 200 Saint Delights Church Roa | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 2                | 0              |
| Safety & Security        | Fire Stations - Harlowe Volunteer Fire Department                    | 3930 State Highway 101        | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 6                | 6              |
| Safety & Security        | Fire Stations - Cove City Fire and Rescue Incorporated               | 425 South Main Street         | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 1                | 5              |
| Safety & Security        | Fire Stations - West of New Bern Volunteer Fire Department           | 102 Industrial Drive          | \$120,100       | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 3              |
| Safety & Security        | Fire Stations - Rhems Volunteer Fire Department                      | 5860 US Highway 17 South      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 3              |
| Safety & Security        | EMS - New Bern Craven County Rescue Squad                            | 3835 State Highway 55 West    | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 0              |
| Safety & Security        | EMS - Fort Barnwell Rescue Squad                                     | 9334 State Highway 55 West    | \$82,500        | X Shaded   | 0.1         | NA                  | NA                    | Y           | 1                | 0              |
| Safety & Security        | EMS - Number 7 Township Rescue Squad Incorporated                    | 1906 Old Cherry Point Road    | \$34,000        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Safety & Security        | EMS - Rhems Volunteer Fire Department                                | 5860 US Highway 17 South      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 3              |
| Health & Medical         | Medical Facilities - Continuum Home Care of New Bern                 | 2600 Old Cherry Point Road    | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Health & Medical         | Medical Facilities - JW Home Care                                    | 244 Staten Road               | -               | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical         | Medical Facilities - Barbara Bolling Flynn Assisted Living Facility  | 4522 Old Cherry Point Road    | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Health & Medical         | Medical Facilities - Britthaven of New Bern                          | 2600 Old Cherry Point Road    | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Food, Hydration, Shelter | Swine Lagoons  | -                             | \$380,010       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 7              |
| Food, Hydration, Shelter | Swine Lagoons  | -                             | \$54,550        | X Unshaded | 0.1         | NA                  | 4                     | -           | 4                | 0              |
| Food, Hydration, Shelter | Swine Lagoons  | -                             | \$239,400       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 3              |
| Food, Hydration, Shelter | Swine Lagoons  | -                             | \$415,900       | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 5              |
| Food, Hydration, Shelter | Swine Lagoons  | -                             | \$379,810       | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 0              |
| Food, Hydration, Shelter | Swine Lagoons  | -                             | \$203,830       | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 6              |
| Food, Hydration, Shelter | Swine Lagoons  | -                             | \$103,980       | AE         | 0.5         | NA                  | 3                     | -           | 1                | 4              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline            | Facility Type                               | Address | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR!? | Burn Probability | Fire Intensity |
|--------------------------|---|---------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Swine Lagoons - Carson Jones (Neuse 2 Farm) | -       | \$103,980       | X Shaded   | 0.1         | NA                  | 3                     | -           | 1                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$407,400       | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 3              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$183,100       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$157,260       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$402,900       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 3              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$469,870       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$2,121,000     | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$17,250        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 8              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$242,640       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 3              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$172,930       | AE         | 1.7         | NA                  | 4                     | -           | 1                | 6              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 6              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$319,160       | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$182,660       | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 6              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$1,070,670     | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$14,370        | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 2              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$206,840       | AE         | 0.1         | NA                  | NA                    | -           | 0                | 6              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$14,400        | AE         | 4.4         | NA                  | 3                     | -           | 1                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$380,010       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$415,900       | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                               | -       | \$379,810       | AE         | 1.1         | NA                  | NA                    | -           | 1                | 3              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline            | Facility Type                                     | Address                     | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR?! | Burn Probability | Fire Intensity |
|--------------------------|---|-----------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$157,260       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$157,260       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$157,260       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$469,870       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 3                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 3                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 3                | 4              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$242,640       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 7              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$14,370        | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 2              |
| Food, Hydration, Shelter | Swine Lagoons                                     | -                           | \$475,230       | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 7              |
| Food, Hydration, Shelter | Public Schools - West Craven High                 | 2600 Streets Ferry Road     | \$0             | X Shaded   | 0.1         | NA                  | 3                     | -           | 1                | 0              |
| Food, Hydration, Shelter | Public Schools - Brinson Memorial Elementary      | 319 Neuse Forest Avenue     | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - James W Smith Elementary         | 150 Koonce Town Road        | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - West Craven Middle               | 515 NW Craven Mid School Rd | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - New Bern Christian Academy   | 2911 Old Cherry Point Rd.   | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - Strait Path Academy          | 4111 Dover Fort Barnwell Rd | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - Swift Creek Mennonite School | 1283 Honolulu Road          | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Animal Farms                                      | -                           | \$402,900       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Food, Hydration, Shelter | Animal Farms                                      | -                           | \$172,930       | AE         | 2.9         | NA                  | 4                     | -           | 1                | 0              |
| Food, Hydration, Shelter | Animal Farms                                      | -                           | \$415,900       | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 0              |
| Food, Hydration, Shelter | Animal Farms                                      | -                           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 7              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline            | Facility Type                                   | Address | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR!? | Burn Probability | Fire Intensity |
|--------------------------|---|---------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Animal Farms                                    | -       | \$406,420       | X Unshaded | 0.1         | NA                  | 4                     | -           | 1                | 0              |
| Food, Hydration, Shelter | Animal Farms                                    | -       | \$407,400       | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 0              |
| Food, Hydration, Shelter | Animal Farms                                    | -       | \$183,100       | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Animal Farms                                    | -       | \$203,830       | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 6              |
| Food, Hydration, Shelter | Animal Farms                                    | -       | \$17,250        | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 7              |
| Food, Hydration, Shelter | Animal Farms - Pig Paradise                     | -       | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 3                | 4              |
| Food, Hydration, Shelter | Animal Farms - Wood Brothers Farming            | -       | \$242,640       | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 4              |
| Food, Hydration, Shelter | Animal Farms - Neuse #1 & Neuse #2              | -       | \$103,980       | AE         | 2.7         | NA                  | 3                     | Y           | 1                | 0              |
| Food, Hydration, Shelter | Animal Farms - Moss Hill Farm                   | -       | \$103,980       | AE         | 5.5         | 10                  | 2                     | -           | 1                | 6              |
| Food, Hydration, Shelter | Animal Farms - Alum Springs L.L.C.              | -       | \$1,070,670     | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 6              |
| Food, Hydration, Shelter | Animal Farms - Countryside Farm                 | -       | \$182,660       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 3              |
| Food, Hydration, Shelter | Animal Farms - Cedar Springs Farm               | -       | \$14,370        | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Food, Hydration, Shelter | Animal Farms - Allen Unruh Farm                 | -       | \$546,860       | X Shaded   | 0.1         | NA                  | 4                     | -           | 0                | 5              |
| Food, Hydration, Shelter | Animal Farms - Faison Smith Farms, Inc. #2      | -       | \$475,230       | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 3              |
| Food, Hydration, Shelter | Animal Farms - Creekside Farms                  | -       | \$206,840       | AE         | 0.1         | NA                  | NA                    | -           | 0                | 6              |
| Food, Hydration, Shelter | Animal Farms - TRC Farms, Inc.                  | -       | \$319,160       | X Unshaded | 0.1         | NA                  | NA                    | -           | 1                | 0              |
| Food, Hydration, Shelter | Animal Farms - Askin Boar Stud                  | -       | \$469,870       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Food, Hydration, Shelter | Animal Farms - Oakwood Sow Farm                 | -       | \$2,121,000     | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 0              |
| Food, Hydration, Shelter | Animal Farms - McLawhorn Livestock Farm Inc     | -       | \$157,260       | X Unshaded | 0.1         | NA                  | NA                    | -           | 4                | 0              |
| Food, Hydration, Shelter | Animal Farms - Sand Ridge Farms, Inc            | -       | \$1,603,530     | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 0              |
| Food, Hydration, Shelter | Animal Farms - Shady Branch Farms, LLC Palmetto | -       | \$379,810       | X Unshaded | 0.1         | NA                  | NA                    | -           | 2                | 4              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline            | Facility Type   | Address                         | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR!? | Burn Probability | Fire Intensity |
|--------------------------|---|---------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Animal Farms - Shady Branch Farms, LLC Maul Swamp                     | -                               | \$380,010       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 6              |
| Food, Hydration, Shelter | Animal Farms - David Stocks Farm LLC                                  | -                               | \$239,400       | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 5              |
| Food, Hydration, Shelter | Non-Public Schools - Calvary Baptist Church School High School Campus | 950 Washington Post Rd          | \$389,700       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - Riverside Leadership Academy                     | 1955 Old Airport Road           | -               | X Unshaded | 0.1         | NA                  | 5                     | -           | 5                | 3              |
| <b>City of Havelock</b>  |   |                                 |                 |            |             |                     |                       |             |                  |                |
| Water Systems            | Water Treatment Distribution  | -                               | \$685,200       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 0              |
| Water Systems            | Water Treatment Distribution  | -                               | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 0              |
| Water Systems            | Sewer Treatment   | City Of Havelock WWT            | \$0             | X Unshaded | 0.1         | NA                  | 2                     | Y           | 5                | 0              |
| Water Systems            | Public Water Supply   | Brown Blvd @ WTP                | \$685,200       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 0              |
| Water Systems            | Public Water Supply   | Brown Blvd @ WTP Near Elev Tank | \$685,200       | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 0              |
| Safety & Security        | Law Enforcement - City of Havelock Police Department                  | 2 Governmental Avenue           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Safety & Security        | Fire Stations - Township Six Fire Department                          | 313 US Hwy 70 West              | \$2,029,100     | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Safety & Security        | Fire Stations - Havelock Fire and Rescue                              | 2 Governmental Avenue           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Safety & Security        | EMS - Havelock Fire And Rescue  | 2 Governmental Avenue           | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Health & Medical         | Medical Facilities - Britthaven of Havelock                           | 110 McCotter Blvd.              | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Arthur W Edwards Elementary                          | 200 Education Lane              | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Food, Hydration, Shelter | Public Schools - W Jesse Gurganus Elementary                          | 535 Hwy 70 W                    | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 6                | 0              |
| Food, Hydration, Shelter | Public Schools - Roger R Bell Elementary                              | 804 Fontana Boulevard           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Food, Hydration, Shelter | Public Schools - Tucker Creek Middle                                  | 200 Sermons Boulevard           | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Food, Hydration, Shelter | Public Schools - Graham A Barden Elementary                           | 200 Cedar Drive                 | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 5                | 0              |
| Food, Hydration, Shelter | Public Schools - Havelock Middle School                               | 201 Cunningham Boulevard        | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Havelock High  | 101 Webb Boulevard              | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |



**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline            | Facility Type   | Address                | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR?! | Burn Probability | Fire Intensity |
|--------------------------|---|------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter | Public Schools - Havelock Elementary School                     | 102 Middle School Lane | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Early College EAST High                        | 305 Cunningham Blvd    | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - Annunciation Catholic School               | 246 E. Main Street     | -               | X Unshaded | 0.1         | NA                  | 5                     | -           | 0                | 1              |
| Food, Hydration, Shelter | Non-Public Schools - Newport Christian Academy                  | 8125 Highway 70 E.     | -               | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| <b>City of New Bern</b>  |   |                        |                 |            |             |                     |                       |             |                  |                |
| Water Systems            | Sewer Treatment   | 307 Glenburnie Drive   | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Water Systems            | Public Water Supply   | 1131 NC 55 Hwy West    | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Water Systems            | Public Water Supply   | 521 NC 55 Hwy West     | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 5              |
| Water Systems            | Water - Water Treatment Plant New Bern WTP                      | 521 NC 55 Hwy West     | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 5              |
| Safety & Security        | Law Enforcement - United States Marshals Service - New Bern     | 413-415 Middle Street  | \$844,100       | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Safety & Security        | Law Enforcement - City of New Bern Police Department            | 601 George Street      | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Safety & Security        | Fire Stations - New Bern Fire Rescue Department Station 2       | 800 West Thurman Road  | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 5              |
| Safety & Security        | Fire Stations - New Bern Fire Rescue Department Station 4       | 3101 Elizabeth Avenue  | \$290,600       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 1              |
| Safety & Security        | Fire Stations - West of New Bern Volunteer Fire Department      | 108 Wanda Avenue       | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Safety & Security        | Fire Stations - New Bern Fire Rescue Department Station 1       | 1401 Neuse Boulevard   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security        | EMS - New Bern Fire Rescue Department Station 2                 | 800 West Thurman Road  | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 5              |
| Safety & Security        | EMS - New Bern Fire Rescue Department Station 4                 | 3101 Elizabeth Avenue  | \$290,600       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 1              |
| Safety & Security        | EMS - New Bern Fire Rescue Department Station 1                 | 1401 Neuse Boulevard   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security        | EMS - Craven Regional Emergency Medical Services                | 2000 Neuse Boulevard   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -           | 1                | 0              |
| Safety & Security        | Emergency Operation Center - Craven County Emergency Management | 406 Craven St          | \$0             | X Shaded   | 0.1         | 10                  | 2                     | Y           | 0                | 0              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline    | Facility Type  | Address                      | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR!? | Burn Probability | Fire Intensity |
|------------------|--|------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Health & Medical | Medical Facilities - Craven Cardiac Rehabilitation Program               | 1300 Helen Avenue            | -               | X Unshaded | 0.1         | NA                  | 4                     | -           | 1                | 0              |
| Health & Medical | Medical Facilities - Little Shepherd Family Care                         | 605 West Street              | -               | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Rose Gardens  | 2701 Amhurst Road            | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - CareFocus   | 2507-G Neuse Blvd.           | -               | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Carolina Home Medical, Inc.                         | 2117 South Glenburnie Road   | -               | X Unshaded | 0.1         | NA                  | 5                     | -           | 1                | 3              |
| Health & Medical | Medical Facilities - Craven County DSS                                   | 2818 Neuse Blvd.             | -               | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Craven County Health Dept. Home Health-Hospice Agen | 2818 Neuse Boulevard         | -               | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Craven Medical Supply                               | 2500 Trent Road              | -               | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Deliverance Interim Health Care Services, Inc.      | 2003 Neuse Blvd., Suite 202  | -               | X Unshaded | 0.1         | NA                  | 4                     | -           | 1                | 0              |
| Health & Medical | Medical Facilities - Johnson's Home Care                                 | 790 Cardinal Road            | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Kights Medical Corp.                                | 2117 South Glenburnie Road   | -               | X Unshaded | 0.1         | NA                  | 5                     | -           | 1                | 3              |
| Health & Medical | Medical Facilities - Long Life Home Care                                 | 1200 Simmons Street          | -               | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Our House, Home Care Services, Inc.                 | 2807 Neuse Blvd, Suite # 10  | -               | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Professional Nursing Service, Inc.                  | 1425 Glenburnie Road, Unit 5 | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Venicare of New Bern, Inc.                          | 727 Professional Drive       | -               | X Unshaded | 0.1         | NA                  | 4                     | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Village Plus 'A Catered Living Program'             | 2701 Amhurst Blvd.           | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Health & Medical | Medical Facilities - Alterra Sterling House of New Bern                  | 1336 South Glenburnie Road   | -               | X Unshaded | 0.1         | NA                  | NA                    | -           | 0                | 0              |
| Health & Medical | Medical Facilities - Carebridge Assisted Living Community                | 2915 Brunswick Avenue        | \$7,056,000     | X Unshaded | 0.1         | NA                  | NA                    | Y           | 1                | 0              |
| Health & Medical | Medical Facilities - Good Shepherd Home for the Aged                     | 603 West Street              | -               | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 0              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline            | Facility Type  | Address                    | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR? | Burn Probability | Fire Intensity |
|--------------------------|--|----------------------------|-----------------|------------|-------------|---------------------|-----------------------|------------|------------------|----------------|
| Health & Medical         | Medical Facilities - Homeplace of New Bern                           | 1309 McCarthy Blvd.        | -               | X Unshaded | 0.1         | NA                  | 5                     | -          | 0                | 0              |
| Health & Medical         | Medical Facilities - Magnolia Place of New Bern                      | 3407 Oak Road              | -               | X Shaded   | 0.1         | NA                  | 2                     | Y          | 1                | 0              |
| Health & Medical         | Medical Facilities - Rose Manor Suites at Berne Village              | 2701 Amhurst Boulevard     | -               | X Unshaded | 0.1         | NA                  | NA                    | Y          | 0                | 0              |
| Health & Medical         | Medical Facilities - The Berne Village Inn                           | 2701 Amhurst Boulevard     | -               | X Unshaded | 0.1         | NA                  | NA                    | Y          | 0                | 0              |
| Health & Medical         | Medical Facilities - Craven Regional Medical Center                  | 2000 Neuse Blvd            | -               | X Unshaded | 0.1         | NA                  | 3                     | -          | 1                | 0              |
| Health & Medical         | Medical Facilities - Bayview Nursing Center                          | 3003 Kensington Park Drive | -               | X Unshaded | 0.1         | NA                  | NA                    | Y          | 0                | 0              |
| Health & Medical         | Medical Facilities - New Bern Healthcare Center, Inc.                | 836 Hospital Drive         | \$125,000,000   | X Unshaded | 0.1         | NA                  | 3                     | -          | 1                | 0              |
| Health & Medical         | Medical Facilities - Two Rivers Healthcare Center                    | 1303 Health Drive          | \$125,000,000   | X Unshaded | 0.1         | NA                  | 3                     | Y          | 1                | 0              |
| Food, Hydration, Shelter | Public Schools - Ben D Quinn Elementary                              | 4275 M L King Jr Boulevard | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y          | 4                | 0              |
| Food, Hydration, Shelter | Public Schools - Grover C Fields Middle                              | 2000 M L King Jr Boulevard | \$3,500,000     | X Unshaded | 0.1         | NA                  | 5                     | -          | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - H J MacDonald Middle                                | 3127 Elizabeth Avenue      | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y          | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - J T Barber Elementary                               | 1700 Cobb Street           | \$0             | AE         | 2.4         | 9                   | 2                     | Y          | 1                | 0              |
| Food, Hydration, Shelter | Public Schools - New Bern High                                       | 4200 Academic Drive        | \$0             | X Unshaded | 0.1         | NA                  | NA                    | -          | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Oaks Road Academy                                   | 2811 Oaks Road             | \$0             | AE         | 0.3         | 10                  | 2                     | -          | 1                | 0              |
| Food, Hydration, Shelter | Public Schools - Trent Park Elementary                               | 2500 Educational Drive     | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y          | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Bridgeton Elementary                                | 230 Branch Canal Road      | \$2,441,500     | AE         | 2.8         | NA                  | 3                     | -          | 1                | 1              |
| Food, Hydration, Shelter | Public Schools - Craven Early College High                           | 800 College Court          | \$50,785,100    | X Unshaded | 0.1         | NA                  | NA                    | -          | 0                | 0              |
| Food, Hydration, Shelter | Public Schools - Creekside Elementary                                | 2790 Landscape Drive       | \$0             | X Unshaded | 0.1         | NA                  | 5                     | -          | 5                | 2              |
| Food, Hydration, Shelter | Non-Public Schools - Calvary Baptist Church School Elementary Campus | 1821 Rhem Ave              | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y          | 0                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - Epiphany School of Global Studies               | 2301 Trent Road            | -               | X Unshaded | 0.1         | NA                  | 4                     | Y          | 0                | 0              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline             | Facility Type   | Address                        | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|---------------------------|---|--------------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Food, Hydration, Shelter  | Non-Public Schools - St. Paul Catholic Education Ctr  | 3007 Country Club Road         | -               | X Unshaded | 0.1         | NA                  | 3                     | Y           | 1                | 1              |
| Food, Hydration, Shelter  | Non-Public Schools - Temple Christian Academy         | 1500 Kingdom Way               | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 5              |
| <b>Town of Bridgeton</b>  |   |                                |                 |            |             |                     |                       |             |                  |                |
| Water Systems             | Sewer Treatment                                       | Bridgeton WWTP                 | \$0             | AE         | 1.6         | 8                   | 2                     | Y           | 0                | 2              |
| Water Systems             | Public Water Supply                                   | WTP 560 Hwy 55 East            | \$0             | X Shaded   | 0.1         | NA                  | 2                     | -           | 1                | 6              |
| Water Systems             | Public Water Supply                                   | 1500' W Of Plant on NC 55      | \$0             | X Shaded   | 0.1         | NA                  | 2                     | Y           | 1                | 0              |
| Water Systems             | Public Water Supply                                   | 410 Galloway Rd                | \$0             | X Shaded   | 0.1         | NA                  | 2                     | -           | 1                | 4              |
| Safety & Security         | Fire Stations - Tri-Community Volunteer Fire District | 408 Bridge Street              | \$0             | X Shaded   | 0.1         | 10                  | 2                     | Y           | 0                | 0              |
| Safety & Security         | EMS - Bridgeton Rescue Squad                          | 717 North US Highway 17        | \$0             | X Shaded   | 0.1         | NA                  | 2                     | Y           | 0                | 0              |
| <b>Town of Cove City</b>  |   |                                |                 |            |             |                     |                       |             |                  |                |
| Water Systems             | Water Treatment Distribution                          | -                              | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Water Systems             | Public Water Supply                                   | 124 East Railroad St Cove City | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 3              |
| Safety & Security         | Fire Stations - Cove City Rescue Squad                | 417 South Main Street          | \$3,590         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Safety & Security         | EMS - Cove City Rescue Squad                          | 417 South Main Street          | \$3,590         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| <b>Town of Dover</b>      |   |                                |                 |            |             |                     |                       |             |                  |                |
| Water Systems             | Water Treatment Distribution                          | -                              | \$384,600       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Water Systems             | Water Treatment Distribution                          | -                              | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Water Systems             | Public Water Supply                                   | Oak Street                     | -               | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 0              |
| Water Systems             | Public Water Supply                                   | Main St                        | \$21,130        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 0              |
| Safety & Security         | Fire Stations - Dover Volunteer Fire Department       | 107 North Main Street          | \$416,300       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 4                | 3              |
| <b>Town of River Bend</b> |   |                                |                 |            |             |                     |                       |             |                  |                |
| Water Systems             | Public Water Supply                                   | 52 Shoreline Dr                | \$9,150         | X Shaded   | 0.1         | 10                  | 2                     | Y           | 0                | 1              |
| Water Systems             | Public Water Supply                                   | 30 Quarterdeck Townes          | \$0             | AE         | 0.1         | 9                   | 2                     | Y           | 0                | 0              |
| Water Systems             | Public Water Supply                                   | 27 Shoreline Drive             | \$36,700        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Water Systems             | Public Sewer Treatment - River Bend WWTP              | 102 Gull Pointe                | \$700           | AE         | 0.8         | 8                   | 1                     | Y           | 0                | 1              |
| Water Systems             | Public Water Supply - RB Water Tower                  | 29 Shoreline Dr.               | \$300,600       | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems             | Public Water Supply - RB Water Tower                  | 1411 Plantation Dr.            | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 0                | 5              |

**ANNEX C: CRAVEN COUNTY**

| FEMA Lifeline              | Facility Type  | Address                | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR!? | Burn Probability | Fire Intensity |
|----------------------------|--|------------------------|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| Water Systems              | Public Sewer - Lift Station 2                              | 112 Starboard Dr.      | -               | AE         | 4.9         | 5                   | 1                     | Y           | 3                | 2              |
| Water Systems              | Public Sewer - Lift Station 3                              | 23 Quarterdeck Townes  | \$0             | AE         | 1.6         | 8                   | 2                     | Y           | 0                | 0              |
| Water Systems              | Public Sewer - Lift Station 4                              | 26B Masters Court Dr.  | -               | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Water Systems              | Public Sewer - Lift Station 5                              | 107 Wakefield Dr.      | -               | X Unshaded | 0.1         | NA                  | 4                     | Y           | 5                | 3              |
| Water Systems              | Public Sewer - Lift Station 6                              | 200 Bayswater Court    | -               | AE         | 0.3         | 10                  | 2                     | Y           | 3                | 0              |
| Water Systems              | Public Sewer - Lift Station 7                              | 43 Pier Pointe         | \$0             | X Shaded   | 0.1         | NA                  | 2                     | Y           | 0                | 0              |
| Water Systems              | Public Sewer - Lift Station 8                              | 140 Pirates Rd.        | -               | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security          | Law Enforcement - Town of River Bend Police Department     | 45 Shoreline Dr        | \$0             | X Shaded   | 0.1         | 10                  | 2                     | Y           | 3                | 0              |
| Safety & Security          | Fire Stations - Rhems Volunteer Fire Department            | 25 Shoreline Drive     | \$36,700        | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| Safety & Security          | Public Works - RB Public Works Facility                    | 1504 Plantation Dr.    | \$207,310       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 5              |
| Health & Medical           | Medical Facilities - Christian Care of New Bern            | 104 Efirid Boulevard   | \$5,643,300     | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| <b>Town of Trent Woods</b> |  |                        |                 |            |             |                     |                       |             |                  |                |
| Safety & Security          | Law Enforcement - City of Trent Woods Police Department    | 912 Country Club Drive | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Safety & Security          | Fire Stations - West of New Bern Volunteer Fire Department | 900 Chelsea Road       | \$0             | X Unshaded | 0.1         | NA                  | 4                     | Y           | 0                | 0              |
| Food, Hydration, Shelter   | Public Schools - A.H. Bangert Elementary                   | 3712 Canterbury Road   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y           | 0                | 0              |
| <b>Town of Vanceboro</b>   |  |                        |                 |            |             |                     |                       |             |                  |                |
| Water Systems              | Water Treatment Distribution                               | -                      | -               | X Unshaded | 0.1         | NA                  | 5                     | Y           | 1                | 0              |
| Water Systems              | Public Water Supply  | Farm Life Ave          | \$0             | X Unshaded | 0.1         | NA                  | NA                    | Y           | 1                | 0              |
| Water Systems              | Public Water Supply  | Mill Road              | \$0             | X Shaded   | 0.1         | NA                  | 4                     | Y           | 1                | 3              |
| Safety & Security          | Fire Stations - Vanceboro Rural Volunteer Fire Department  | 375 NC 43 Hwy          | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 3                | 0              |
| Safety & Security          | EMS - Vanceboro Rescue Squad                               | 375 NC 43 Hwy          | \$0             | X Unshaded | 0.1         | NA                  | 5                     | Y           | 3                | 0              |
| Health & Medical           | Medical Facilities - Wilson's Home Care                    | 7914 Main Street       | -               | X Unshaded | 0.1         | NA                  | 5                     | Y           | 3                | 0              |
| Food, Hydration, Shelter   | Public Schools - Vanceboro Farm Life Elementary            | 2000 Farm Life Avenue  | \$10,000,000    | X Unshaded | 0.1         | NA                  | NA                    | Y           | 3                | 0              |

## C.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level within Craven County. The hazards included in this section are flood and wildfire.

### C.2.1 FLOODING

Table C.11 details the acreage of Craven County’s total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at over 68 percent, the Town of Bridgeton has the largest portion of its land area within the mapped 1%-annual-chance floodplain. At least 30 percent of the total land area in New Bern, River Bend, Trent Woods, and Vanceboro all fall within the Special Flood Hazard Area. Neither Cove City nor Dover have any land in the high or moderate risk flood zone. Overall, 23 percent of the county’s total land area falls within this floodplain.

**Table C.11 - Flood Zone Acreage by Jurisdiction, Craven County**

| Flood Zone               | Acreage       | Percent of Total (%) |
|--------------------------|---------------|----------------------|
| <b>Town of Bridgeton</b> |               |                      |
| Zone AE                  | 839.1         | 67.7                 |
| Zone VE                  | 8.2           | 0.7                  |
| Zone X (500-year)        | 69.2          | 5.6                  |
| Zone X Unshaded          | 322.1         | 26.0                 |
| <b>Total</b>             | <b>1,239</b>  | --                   |
| <b>Town of Cove City</b> |               |                      |
| Zone X Unshaded          | 421.8         | 100.0                |
| <b>Total</b>             | <b>421.8</b>  | --                   |
| <b>Town of Dover</b>     |               |                      |
| Zone X Unshaded          | 610.9         | 100.0                |
| <b>Total</b>             | <b>610.9</b>  | --                   |
| <b>City of Havelock</b>  |               |                      |
| Zone AE                  | 1,468.7       | 12.7                 |
| Zone AO                  | 1.1           | 0.01                 |
| Zone VE                  | 239.5         | 2.1                  |
| Zone X (500-year)        | 222.3         | 1.9                  |
| Zone X (unshaded)        | 9,602.2       | 83.3                 |
| <b>Total</b>             | <b>11,534</b> | --                   |
| <b>City of New Bern</b>  |               |                      |
| Zone AE                  | 5,739.8       | 30.8                 |
| Zone VE                  | 499.3         | 2.7                  |
| Zone X (500-year)        | 949.2         | 5.1                  |
| Zone X (unshaded)        | 11,425.2      | 61.3                 |
| Open Water               | 37.3          | 0.2                  |
| <b>Total</b>             | <b>18,651</b> | --                   |

| Flood Zone                          | Acreage        | Percent of Total (%) |
|-------------------------------------|----------------|----------------------|
| <b>Town of River Bend</b>           |                |                      |
| Zone AE                             | 581.3          | 35.6                 |
| Zone VE                             | 22.5           | 1.4                  |
| Zone X (500-year)                   | 63.2           | 3.9                  |
| Zone X (unshaded)                   | 964.4          | 59.1                 |
| <b>Total</b>                        | <b>1,631</b>   | <b>--</b>            |
| <b>Town of Trent Woods</b>          |                |                      |
| Zone AE                             | 652.8          | 30.1                 |
| Zone VE                             | 41.2           | 1.9                  |
| Zone X (500-year)                   | 222.6          | 10.2                 |
| Zone X (unshaded)                   | 1,255.9        | 57.8                 |
| <b>Total</b>                        | <b>2,173</b>   | <b>--</b>            |
| <b>Town of Vanceboro</b>            |                |                      |
| Zone AE                             | 348.9          | 31.1                 |
| Zone X (500-year)                   | 55.2           | 4.9                  |
| Zone X (unshaded)                   | 718.8          | 64.0                 |
| <b>Total</b>                        | <b>1,123</b>   | <b>--</b>            |
| <b>Unincorporated Craven County</b> |                |                      |
| Zone A                              | 19,340.1       | 4.2                  |
| Zone AE                             | 74,290.0       | 16.2                 |
| Zone AO                             | 0.3            | 0.0                  |
| Zone VE                             | 10,112.8       | 2.2                  |
| Zone X(500-year)                    | 13,117.5       | 2.9                  |
| Zone X (unshaded)                   | 320,430.8      | 70.1                 |
| Open Water                          | 19,939.2       | 4.4                  |
| <b>Total</b>                        | <b>457,231</b> | <b>--</b>            |

Source: FEMA Effective DFIRM

Figure C.10 through Figure C.18 reflect the effective mapped flood hazard zones for all jurisdictions that have land in the Special Flood Hazard Area in Craven County, and Figure C.19 through Figure C.27 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table C.12 provides building counts and values for critical facilities by flood zone in Craven County and incorporated jurisdictions.

**Table C.12 – Critical Facilities Exposed to Flooding, Craven County**

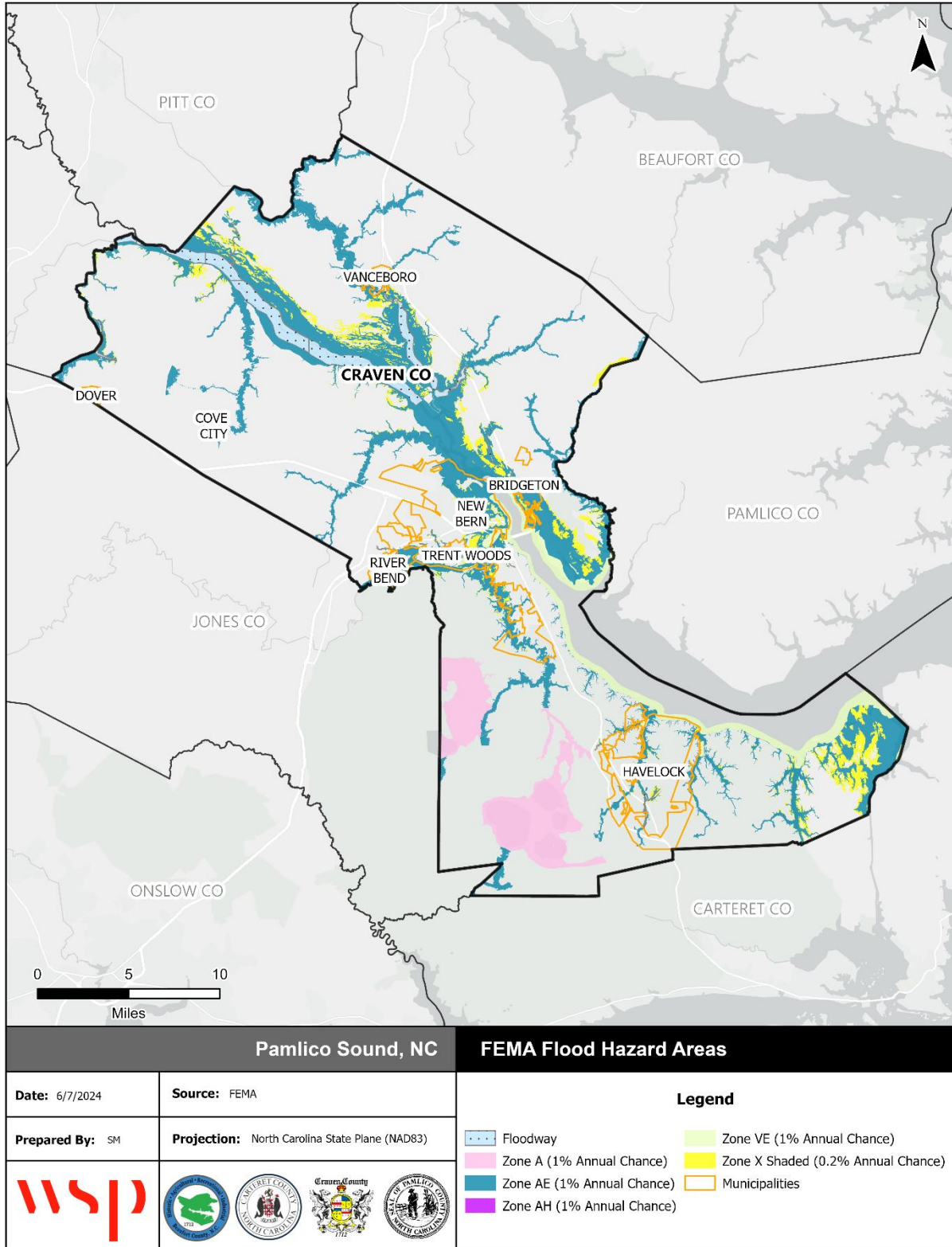
| Flood Zone               | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| <b>Town of Bridgeton</b> |                         |                  |
| Zone AE                  | 1                       | \$0              |
| Zone X (500-year)        | 5                       | \$0              |
| <b>Total</b>             | <b>6</b>                | <b>\$0</b>       |
| <b>Town of Cove City</b> |                         |                  |
| Zone X (unshaded)        | 4                       | \$7,180          |
| <b>Total</b>             | <b>4</b>                | <b>\$7,180</b>   |
| <b>Town of Dover</b>     |                         |                  |
| Zone X (unshaded)        | 5                       | \$822,030        |
| <b>Total</b>             | <b>5</b>                | <b>\$822,030</b> |

| Flood Zone                          | Critical Facility Count | Structure Value      |
|-------------------------------------|-------------------------|----------------------|
| <b>City of Havelock</b>             |                         |                      |
| Zone X (unshaded)                   | 20                      | \$4,084,700          |
| <b>Total</b>                        | <b>20</b>               | <b>\$4,084,700</b>   |
| <b>City of New Bern</b>             |                         |                      |
| Zone AE                             | 1                       | \$2,441,500          |
| Zone X (500-year)                   | 2                       | \$0                  |
| Zone X (unshaded)                   | 51                      | \$312,766,400        |
| <b>Total</b>                        | <b>56</b>               | <b>\$315,207,900</b> |
| <b>Town of River Bend</b>           |                         |                      |
| Zone AE                             | 5                       | \$700                |
| Zone X (500-year)                   | 3                       | \$9,150              |
| Zone X (unshaded)                   | 9                       | \$6,224,610          |
| <b>Total</b>                        | <b>17</b>               | <b>\$6,234,460</b>   |
| <b>Town of Trent Woods</b>          |                         |                      |
| Zone X (unshaded)                   | 3                       | \$0                  |
| <b>Total</b>                        | <b>3</b>                | <b>\$0</b>           |
| <b>Town of Vanceboro</b>            |                         |                      |
| Zone X (unshaded)                   | 7                       | \$10,000,000         |
| <b>Total</b>                        | <b>7</b>                | <b>\$10,000,000</b>  |
| <b>Unincorporated Craven County</b> |                         |                      |
| Zone AE                             | 19                      | \$15,691,810         |
| Zone X (500-year)                   | 5                       | \$14,221,440         |
| Zone X (unshaded)                   | 145                     | \$24,641,000         |
| <b>Total</b>                        | <b>169</b>              | <b>\$54,554,250</b>  |

Source: FEMA Effective FIRM

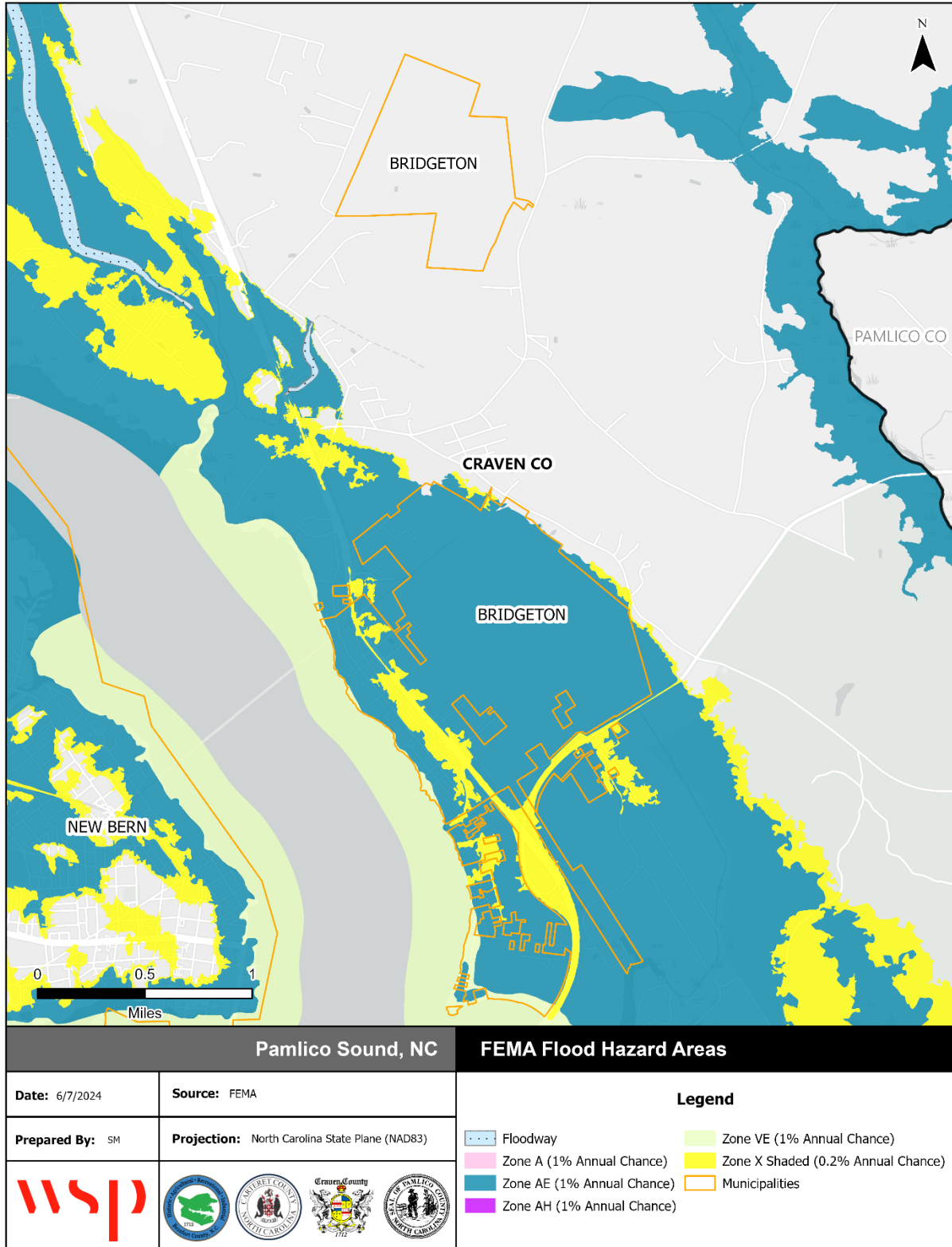


Figure C.10 – FEMA Flood Hazard Areas, Unincorporated Craven County



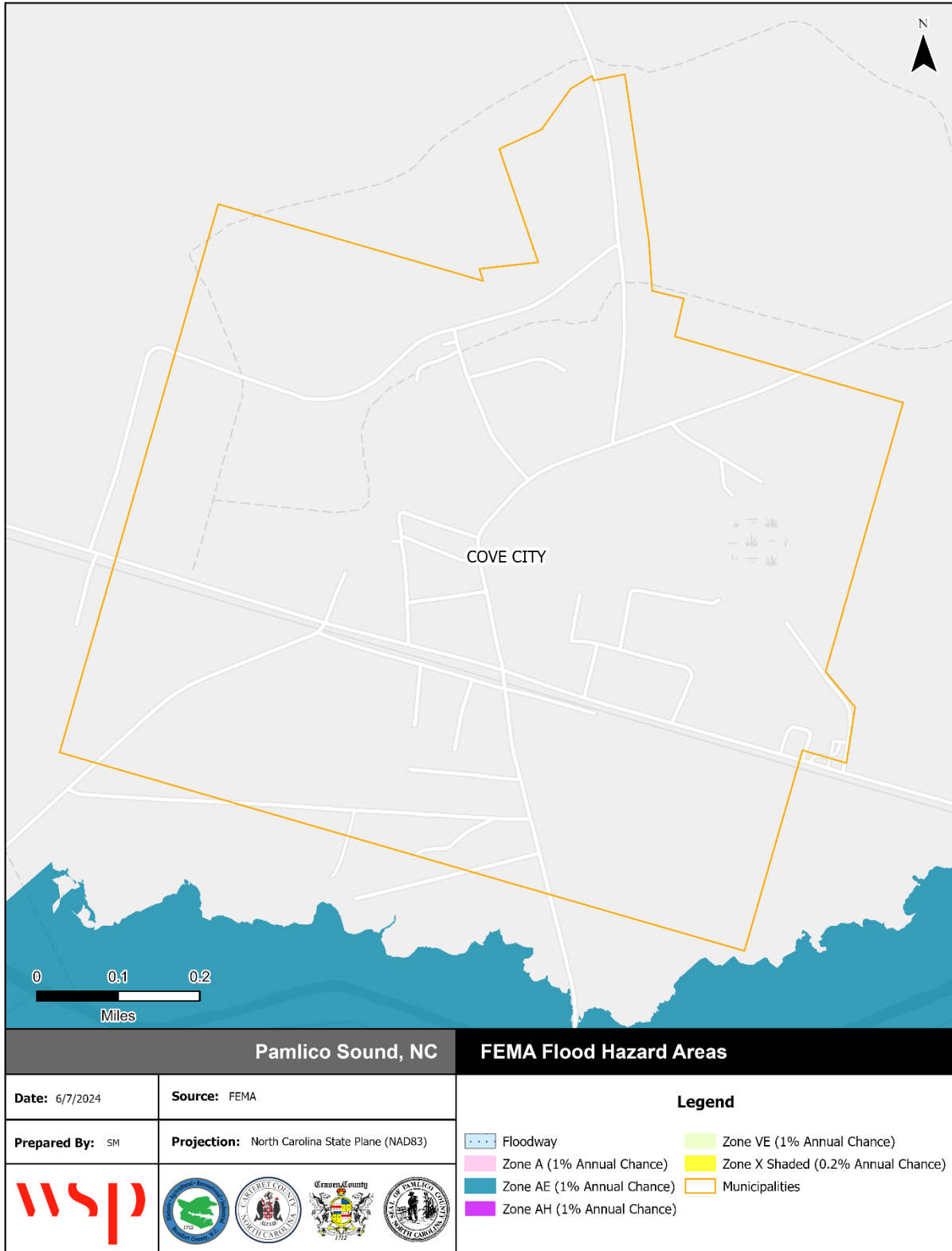
Source: FEMA Effective DFIRM

Figure C.11 - FEMA Flood Hazard Areas, Town of Bridgeton



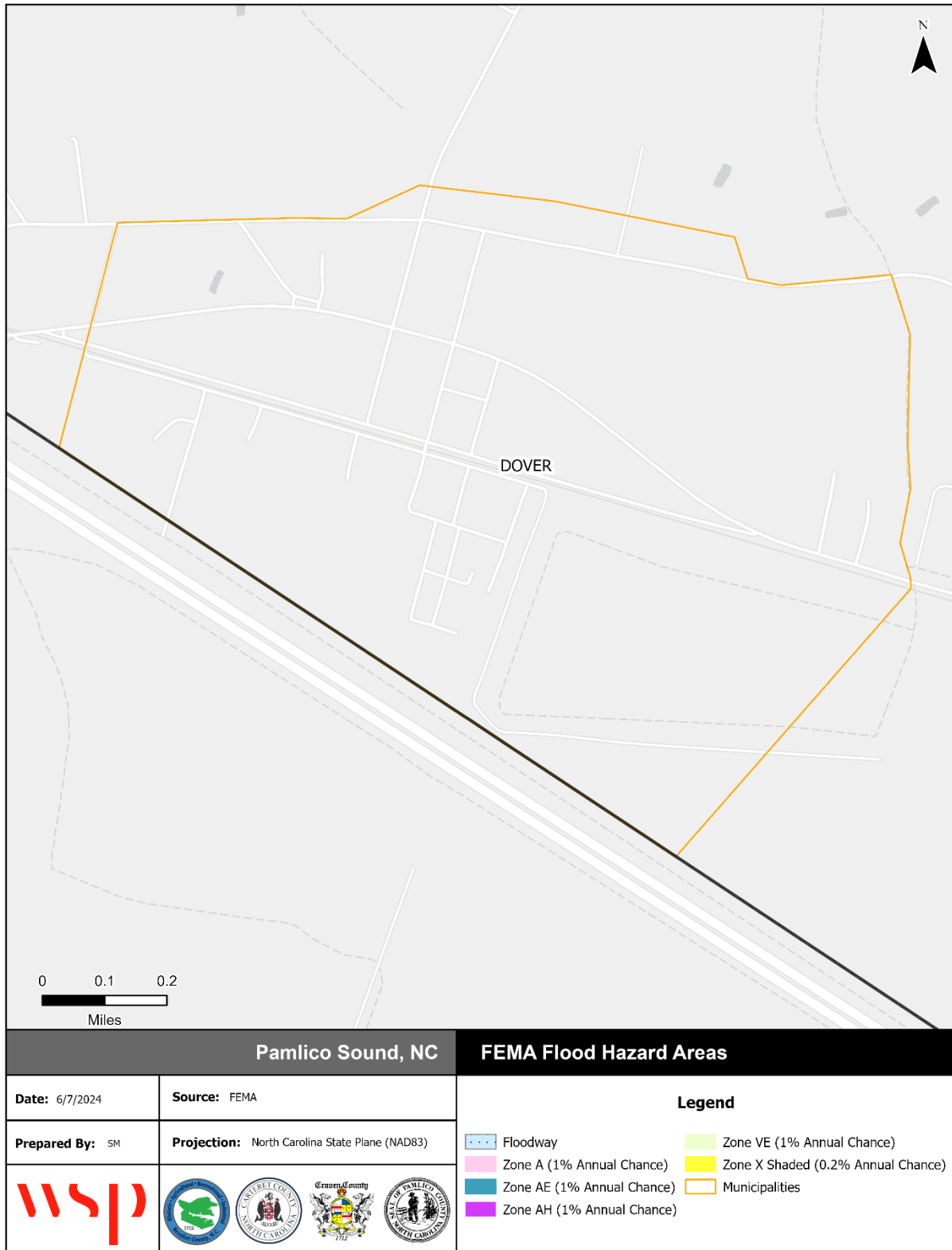
Source: FEMA Effective DFIRM

Figure C.12 - FEMA Flood Hazard Areas, Town of Cove City



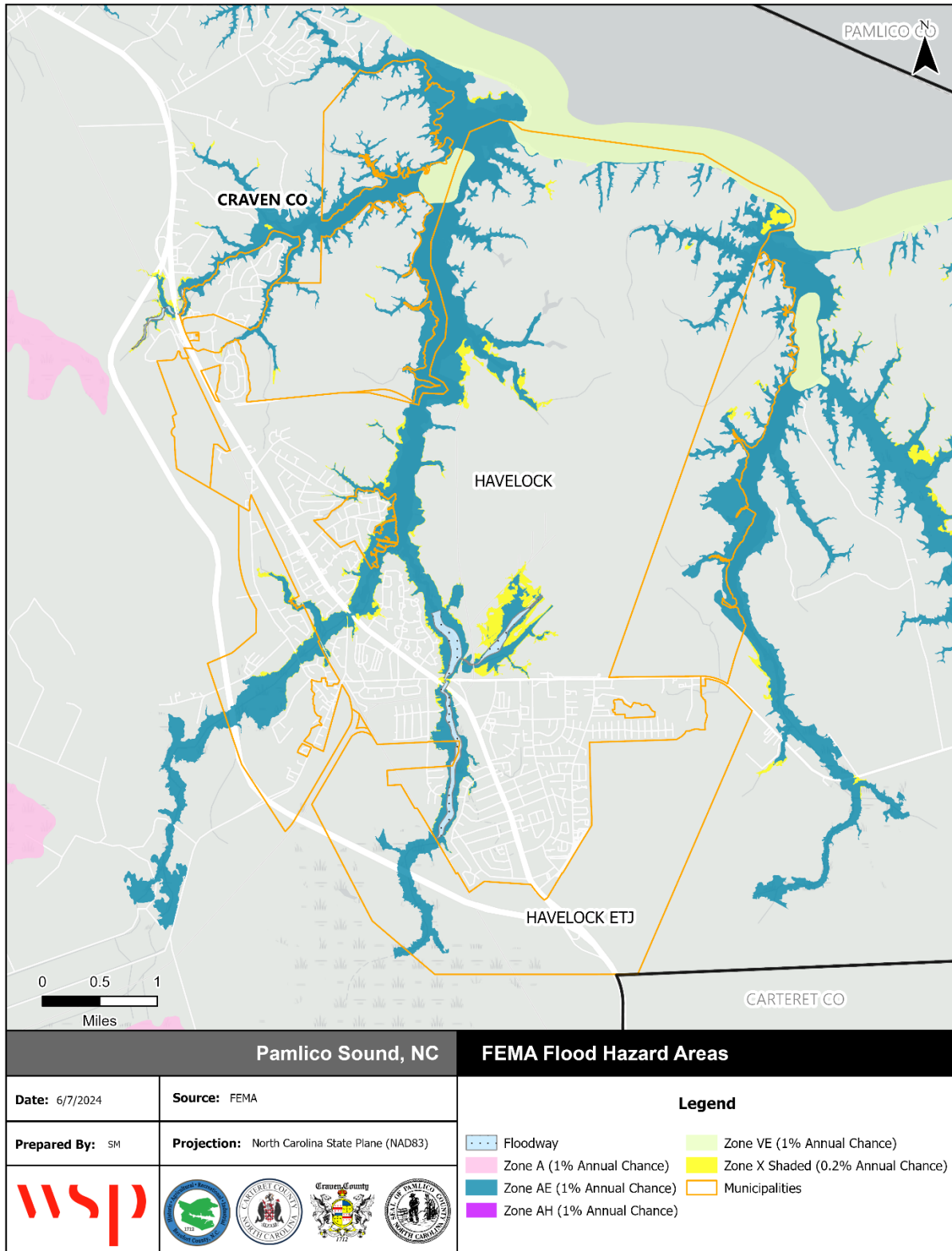
Source: FEMA Effective DFIRM

Figure C.13 - FEMA Flood Hazard Areas, Town of Dover



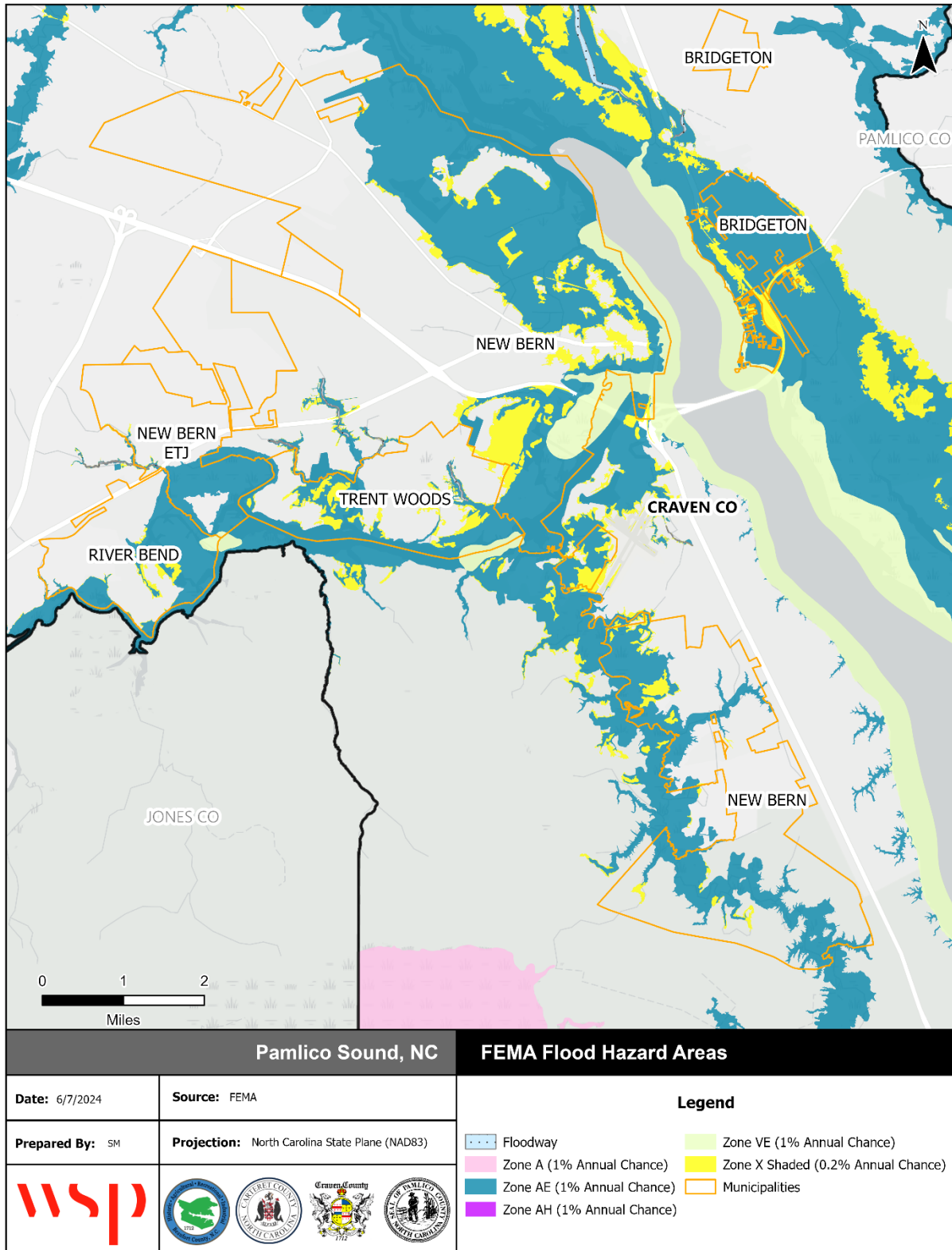
Source: FEMA Effective DFIRM

Figure C.14 - FEMA Flood Hazard Areas, City of Havelock



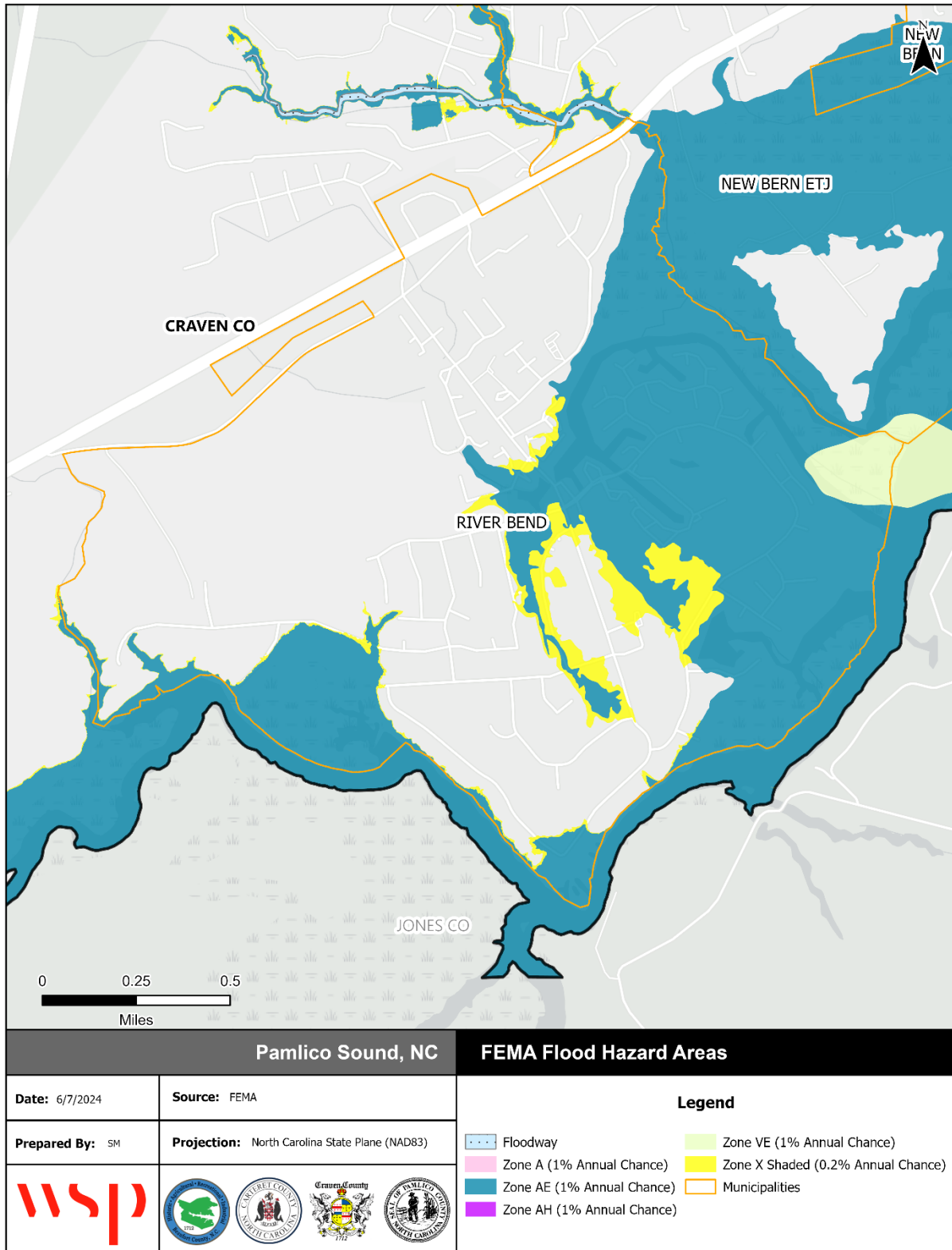
Source: FEMA Effective DFIRM

Figure C.15 - FEMA Flood Hazard Areas, City of New Bern



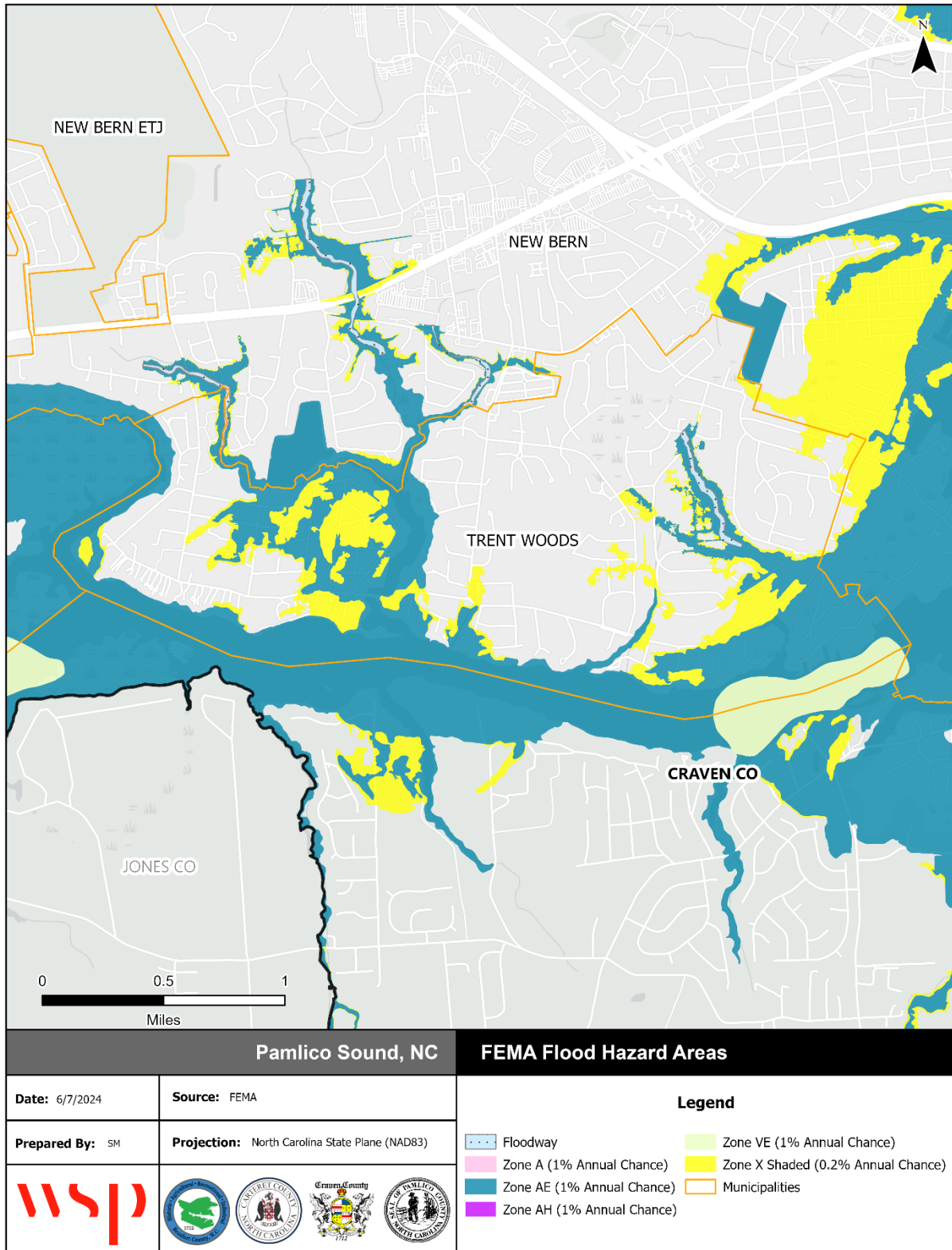
Source: FEMA Effective DFIRM

Figure C.16 – FEMA Flood Hazard Areas, Town of River Bend



Source: FEMA Effective DFIRM

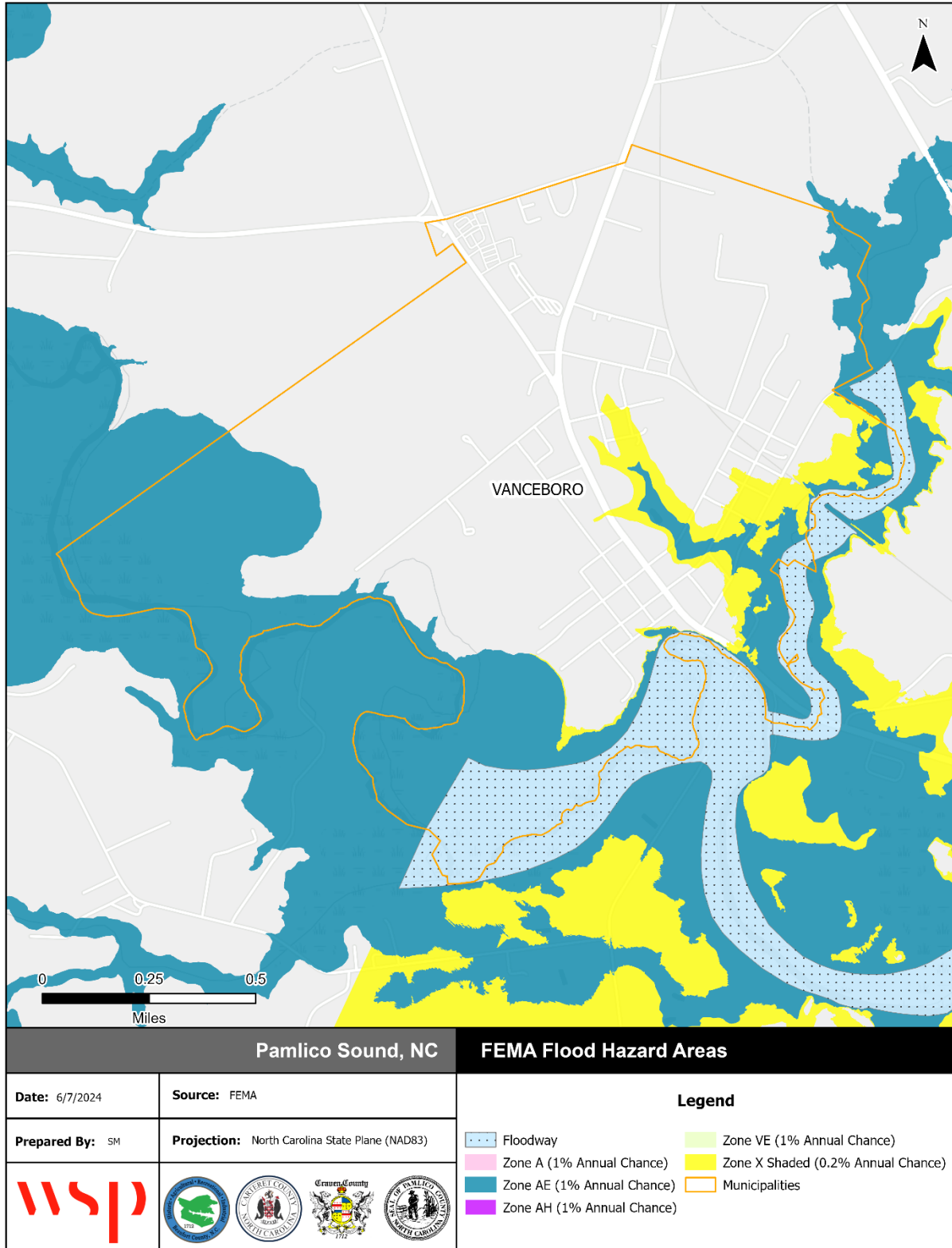
Figure C.17 - FEMA Flood Hazard Areas, Town of Trent Woods



Source: FEMA Effective DFIRM

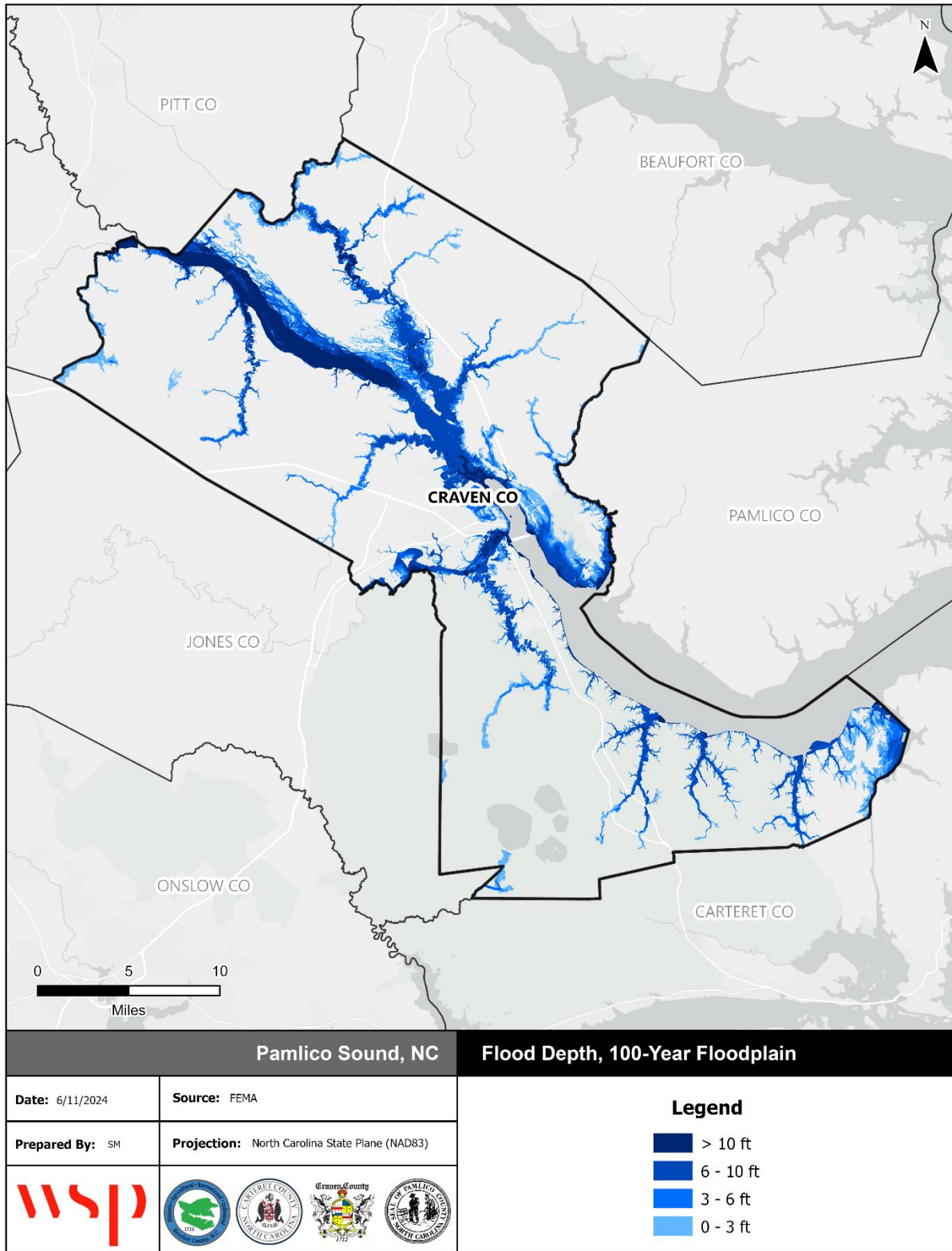


Figure C.18 - FEMA Flood Hazard Areas, Town of Vanceboro



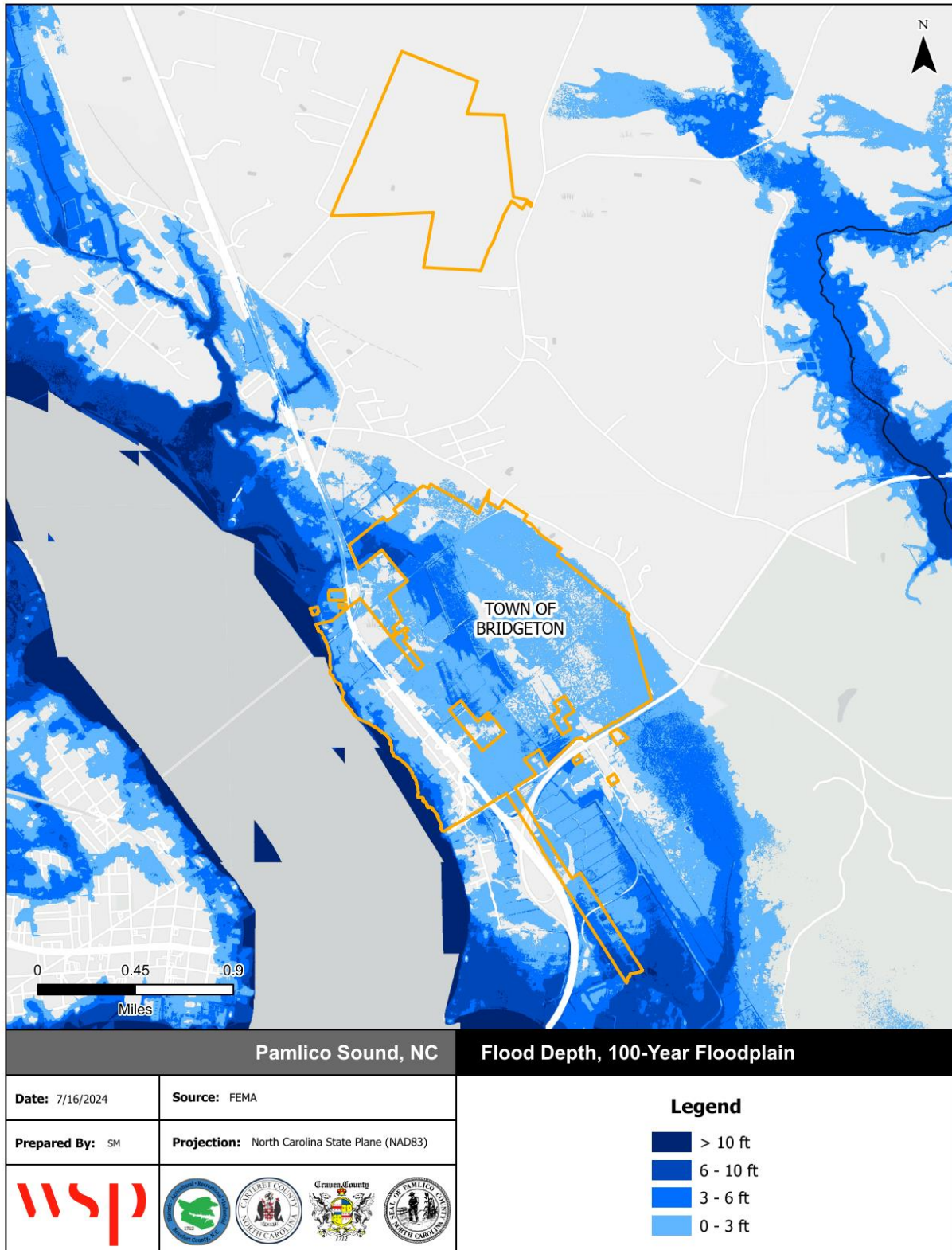
Source: FEMA Effective DFIRM

Figure C.19 – Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Craven County



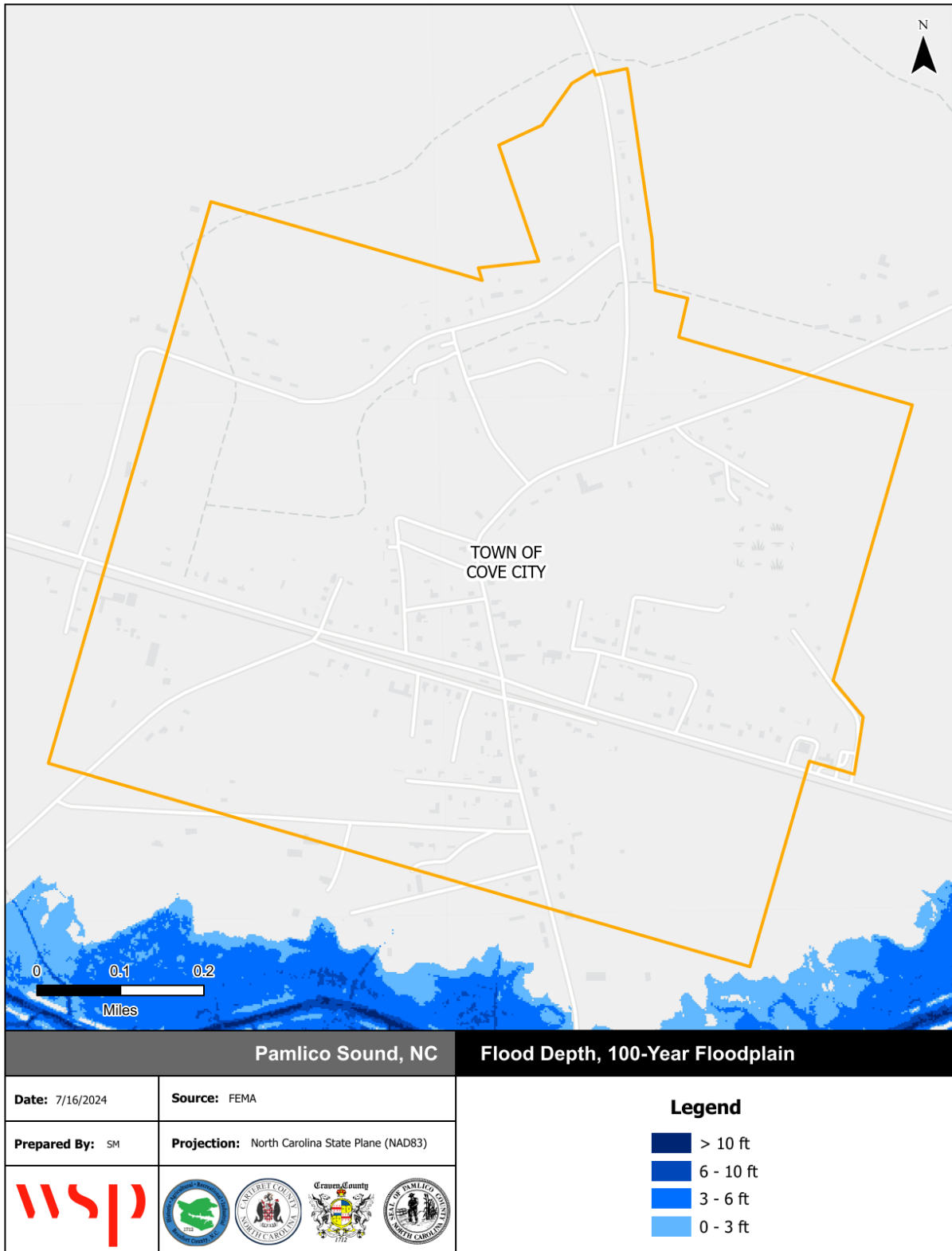
Source: FEMA Effective DFIRM

Figure C.20 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Bridgeton



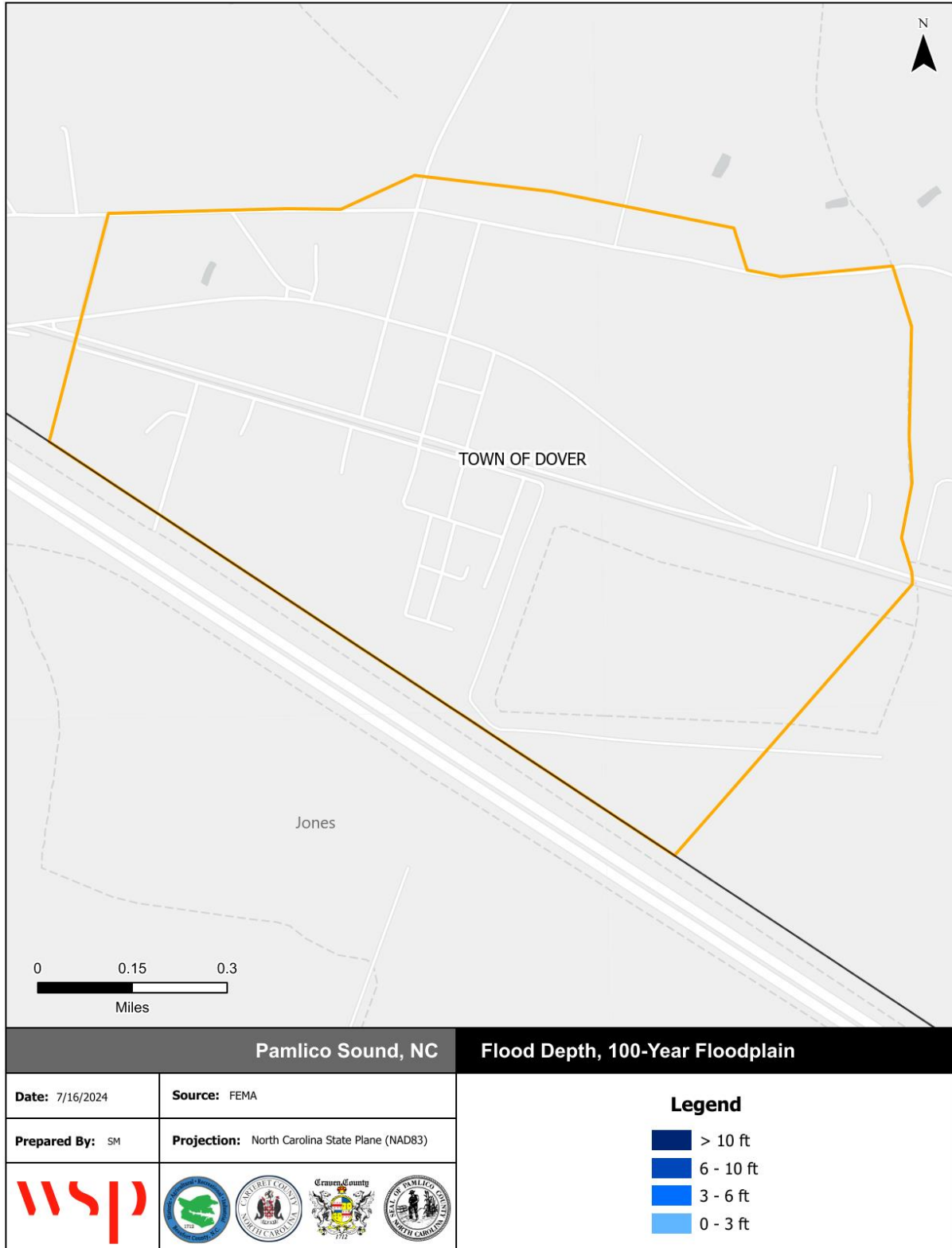
Source: FEMA Effective DFIRM

Figure C.21 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Cove City



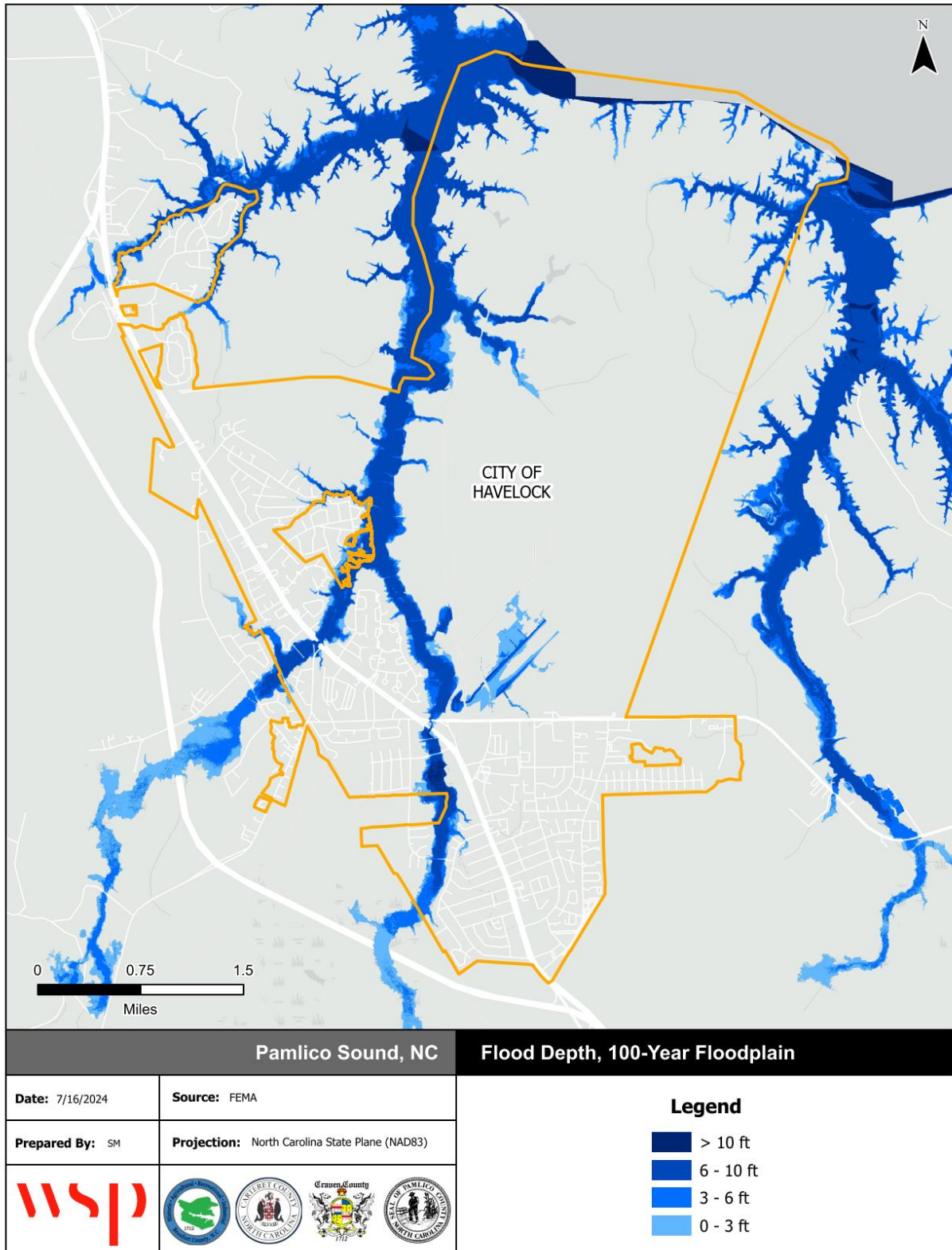
Source: FEMA Effective DFIRM

Figure C.22 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Dover



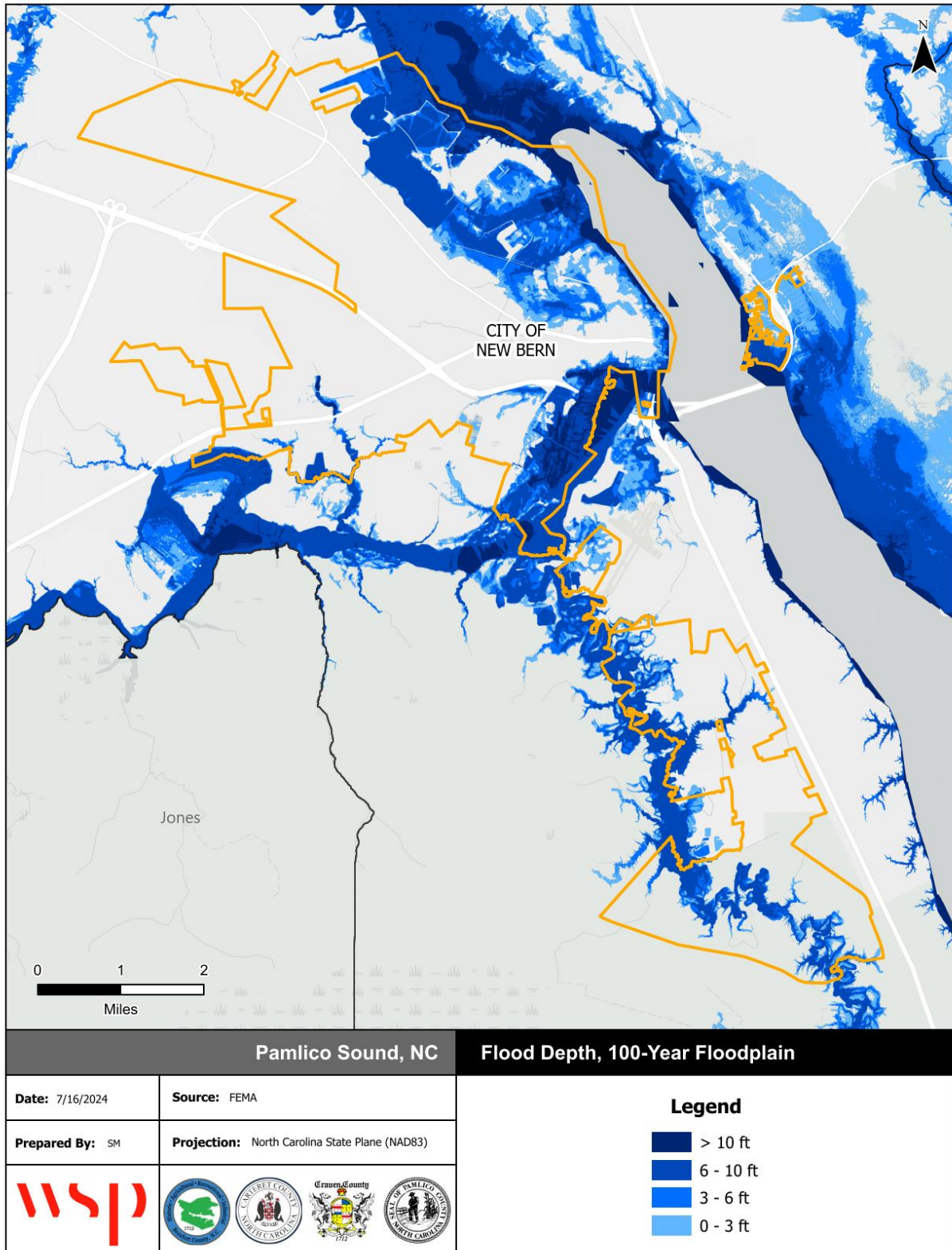
Source: FEMA Effective DFIRM

Figure C.23 - Flood Depth, 1%-Annual-Chance Floodplain, City of Havelock



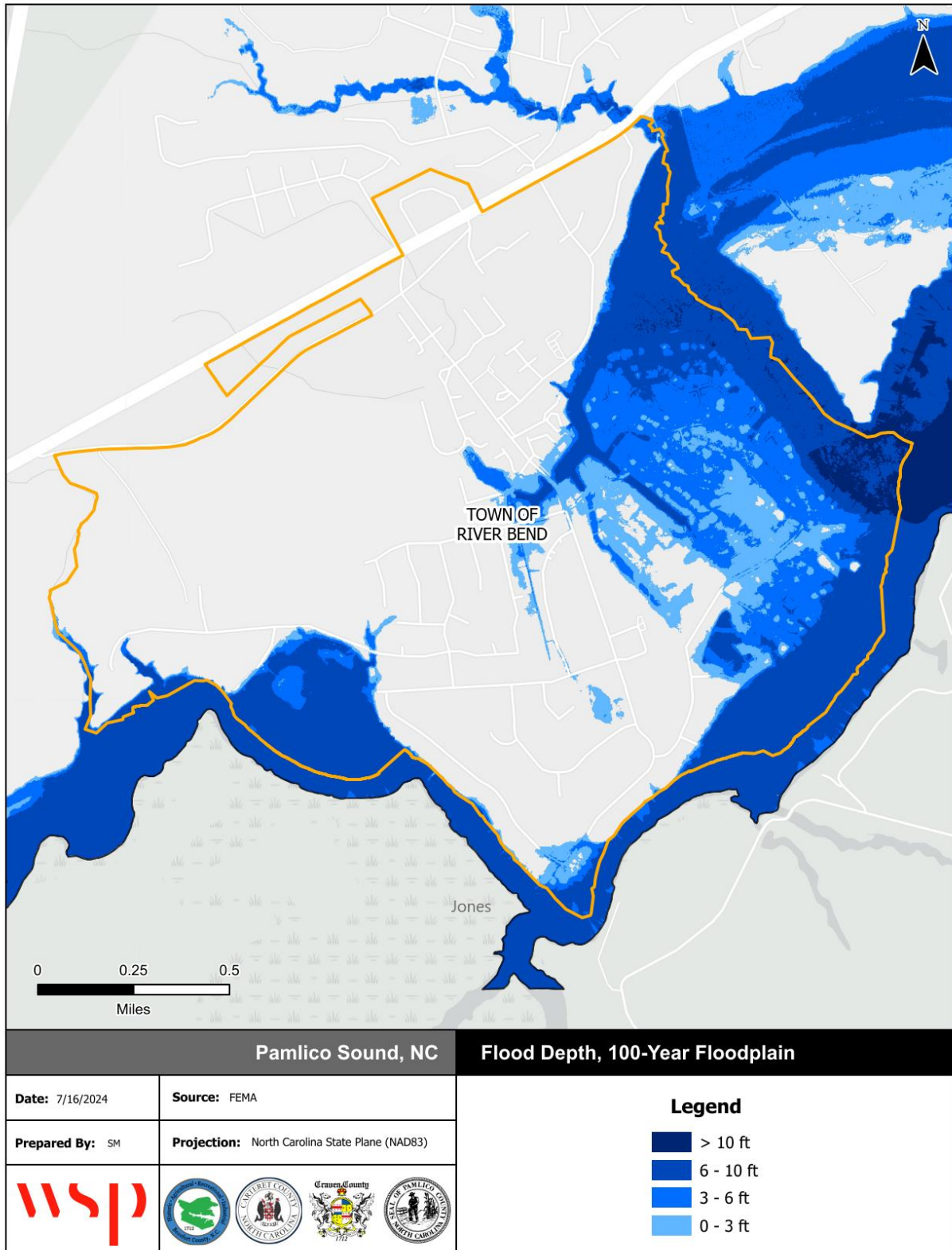
Source: FEMA Effective DFIRM

Figure C.24 - Flood Depth, 1%-Annual-Chance Floodplain, City of New Bern



Source: FEMA Effective DFIRM

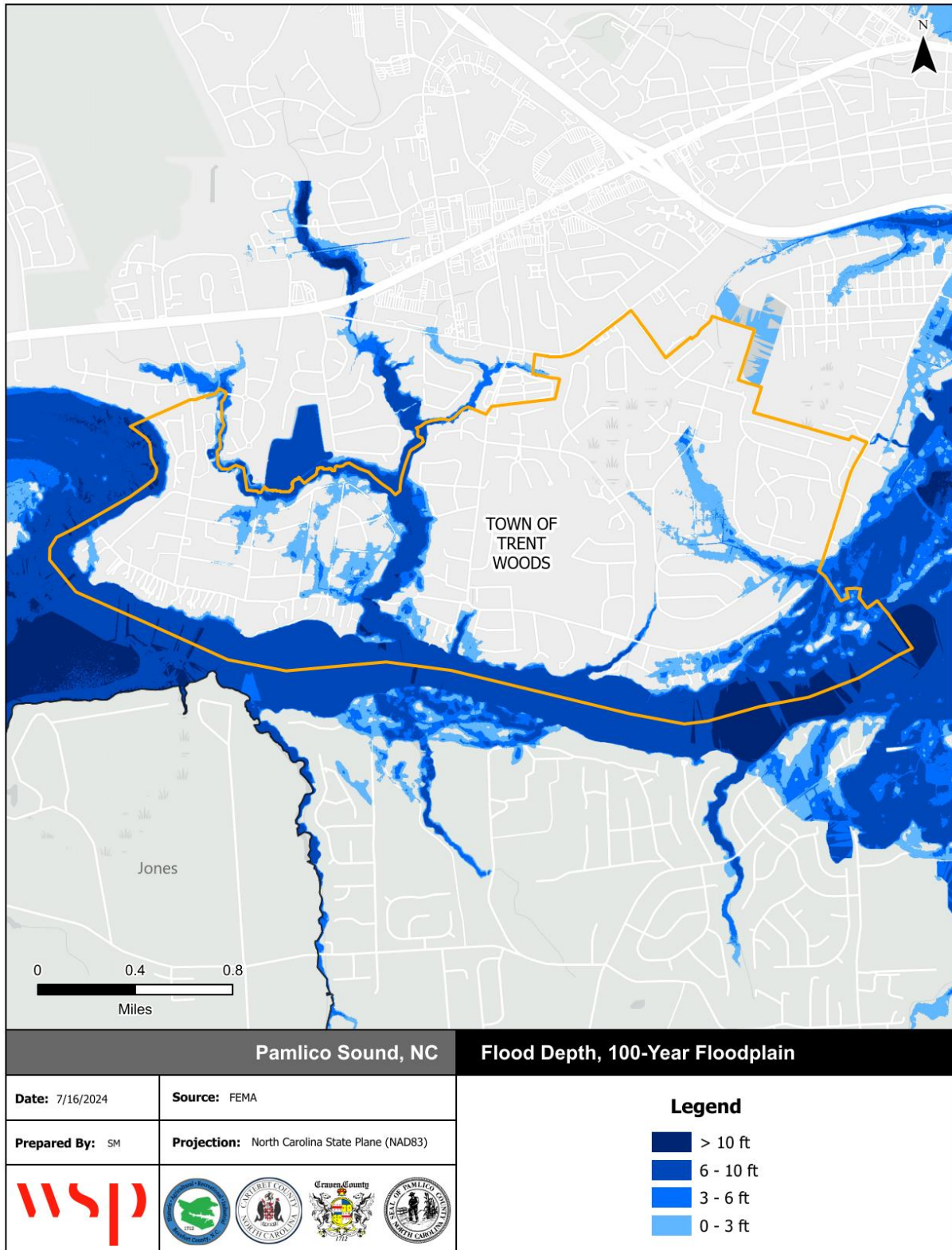
Figure C.25 - Flood Depth, 1%-Annual-Chance Floodplain, Town of River Bend



Source: FEMA Effective DFIRM

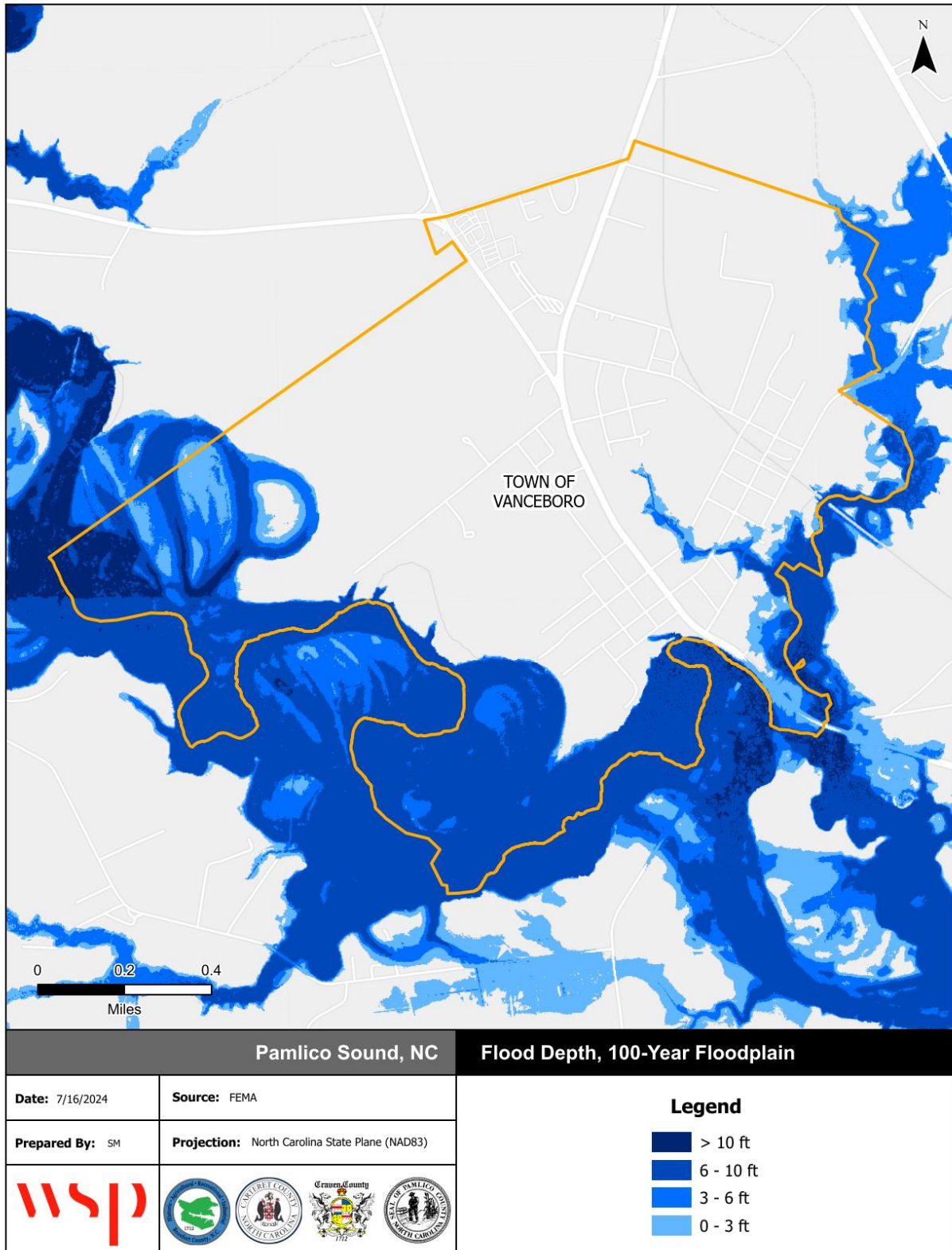


Figure C.26 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Trent Woods



Source: FEMA Effective DFIRM

Figure C.27 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Vanceboro



Source: FEMA Effective DFIRM

**C.2.1.1 FLOOD INSURANCE DATA**

The following tables reflect NFIP emergency and regular entry dates as well as policy and claims data for Craven County and incorporated categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

**Table C.13 – NFIP Program Entry Dates**

| Community                           | Emergency Entry Date | Regular Entry Date |
|-------------------------------------|----------------------|--------------------|
| Craven County (Unincorporated Area) | October 19, 1973     | May 4, 1987        |
| Town of Bridgeton                   | October 19, 1973     | May 4, 1987        |
| Town of Cove City                   | August 12, 2002      | July 2, 2004       |
| Town of Dover                       | N/A                  | May 29, 2007       |
| City of Havelock                    | June 20, 1975        | May 4, 1987        |
| City of New Bern                    | December 11, 1973    | June 1, 1978       |
| Town of River Bend                  | August 5, 1981       | August 19, 1986    |
| Town of Trent Woods                 | May 4, 1987          | May 4, 1987        |
| Town of Vanceboro                   | October 19, 1973     | August 4, 1988     |

**Table C.14 – NFIP Policy and Claims Data by Structure Type**

| Structure Type                           | Policies in Force | Total Premium      | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--|-------------------|--------------------|----------------------|------------------------------|-----------------------------|
| <b>Craven County Unincorporated Area</b> |                   |                    |                      |                              |                             |
| Single Family                            | 1,580             | \$1,166,756        | \$466,585,000        | 2,648                        | \$94,007,652.08             |
| 2-4 Family                               | 103               | \$30,795           | \$18,759,000         | 189                          | \$5,852,787.21              |
| All Other Residential                    | 115               | \$20,993           | \$17,309,000         | 39                           | \$3,370,994.76              |
| Non-Residential                          | 36                | \$41,792           | \$9,375,000          | 51                           | \$2,376,383.10              |
| <b>Total</b>                             | <b>1,834</b>      | <b>\$1,260,336</b> | <b>\$512,028,000</b> | <b>2,927</b>                 | <b>\$105,607,817.15</b>     |
| <b>Town of Bridgeton</b>                 |                   |                    |                      |                              |                             |
| Single Family                            | 59                | \$45,081           | \$13,790,000         | 101                          | \$2,963,811.23              |
| 2-4 Family                               | 2                 | \$1,789            | \$600,000            | 8                            | \$272,986.44                |
| All Other Residential                    | 2                 | \$1,042            | \$240,000            | 1                            | \$0.00                      |
| Non-Residential                          | 7                 | \$9,473            | \$2,115,000          | 5                            | \$152,498.82                |
| <b>Total</b>                             | <b>70</b>         | <b>\$57,385</b>    | <b>\$16,745,000</b>  | <b>115</b>                   | <b>\$3,389,296.49</b>       |
| <b>Town of Cove City</b>                 |                   |                    |                      |                              |                             |
| Single Family                            | 1                 | \$612              | \$210,000            | -                            | -                           |
| 2-4 Family                               | 0                 | \$0                | \$0                  | -                            | -                           |
| All Other Residential                    | 0                 | \$0                | \$0                  | -                            | -                           |
| Non-Residential                          | 0                 | \$0                | \$0                  | -                            | -                           |
| <b>Total</b>                             | <b>1</b>          | <b>\$612</b>       | <b>\$210,000</b>     | <b>0</b>                     | <b>\$0.00</b>               |
| <b>Town of Dover</b>                     |                   |                    |                      |                              |                             |
| Single Family                            | 1                 | \$392              | \$140,000            | 1                            | \$1,010.53                  |
| 2-4 Family                               | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| All Other Residential                    | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| Non-Residential                          | 0                 | \$0                | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                             | <b>1</b>          | <b>\$392</b>       | <b>\$140,000</b>     | <b>1</b>                     | <b>\$1,010.53</b>           |

**ANNEX C: CRAVEN COUNTY**

| Structure Type             | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|----------------------------|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>City of Havelock</b>    |                   |                  |                      |                              |                             |
| Single Family              | 186               | \$111,352        | \$51,623,000         | 152                          | \$4,389,021.21              |
| 2-4 Family                 | 3                 | \$1,056          | \$436,000            | 0                            | \$0.00                      |
| All Other Residential      | 8                 | \$6,370          | \$3,737,000          | 4                            | \$250,128.11                |
| Non-Residential            | 10                | \$12,315         | \$3,458,000          | 6                            | \$486,410.42                |
| <b>Total</b>               | <b>207</b>        | <b>\$131,093</b> | <b>\$59,254,000</b>  | <b>162</b>                   | <b>\$5,125,559.74</b>       |
| <b>City of New Bern</b>    |                   |                  |                      |                              |                             |
| Single Family              | 1,166             | \$752,607        | \$309,254,000        | 1,532                        | \$52,689,947.87             |
| 2-4 Family                 | 61                | \$29,638         | \$11,764,000         | 76                           | \$2,477,224.84              |
| All Other Residential      | 172               | \$58,612         | \$37,256,000         | 86                           | \$2,560,828.48              |
| Non-Residential            | 78                | \$126,804        | \$35,148,000         | 132                          | \$10,772,654.37             |
| <b>Total</b>               | <b>1,477</b>      | <b>\$967,661</b> | <b>\$393,422,000</b> | <b>1,826</b>                 | <b>\$68,500,655.56</b>      |
| <b>Town of River Bend</b>  |                   |                  |                      |                              |                             |
| Single Family              | 370               | \$366,575        | \$100,475,000        | 792                          | \$41,067,037.25             |
| 2-4 Family                 | 14                | \$9,174          | \$2,924,000          | 23                           | \$861,525.29                |
| All Other Residential      | 0                 | \$0              | \$0                  | 4                            | \$131,641.61                |
| Non-Residential            | 3                 | \$2,366          | \$189,000            | 2                            | \$378,287.88                |
| <b>Total</b>               | <b>387</b>        | <b>\$378,115</b> | <b>\$103,588,000</b> | <b>821</b>                   | <b>\$42,438,492.03</b>      |
| <b>Town of Trent Woods</b> |                   |                  |                      |                              |                             |
| Single Family              | 290               | \$245,661        | \$91,224,000         | 255                          | \$13,932,687.44             |
| 2-4 Family                 | 1                 | \$131            | \$100,000            | 0                            | \$0.00                      |
| All Other Residential      | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| Non-Residential            | 6                 | \$7,075          | \$2,129,000          | 3                            | \$9,296.57                  |
| <b>Total</b>               | <b>297</b>        | <b>\$252,867</b> | <b>\$93,453,000</b>  | <b>258</b>                   | <b>\$13,941,984.01</b>      |
| <b>Town of Vanceboro</b>   |                   |                  |                      |                              |                             |
| Single Family              | 3                 | \$2,200          | \$463,000            | 1                            | \$3,323.29                  |
| 2-4 Family                 | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| All Other Residential      | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| Non-Residential            | 1                 | \$2,828          | \$380,000            | 0                            | \$0.00                      |
| <b>Total</b>               | <b>4</b>          | <b>\$5,028</b>   | <b>\$843,000</b>     | <b>1</b>                     | <b>\$3,323.29</b>           |

Source: FEMA Community Information System, accessed January 2025

**Table C.15 - NFIP Policy and Claims Data by Flood Zone**

| Flood Zone                               | Policies in Force | Total Premium      | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--|-------------------|--------------------|----------------------|------------------------------|-----------------------------|
| <b>Craven County Unincorporated Area</b> |                   |                    |                      |                              |                             |
| A01-30 & AE Zones                        | 1,239             | \$882,074          | \$323,048,000        | 2,598                        | \$100,237,796.97            |
| A Zones                                  | 1                 | \$767              | \$277,000            | 35                           | \$917,970.98                |
| <b>B, C &amp; X Zone</b>                 |                   |                    |                      |                              |                             |
| Standard                                 | 594               | \$377,495          | \$188,703,000        | 34                           | \$876,173.58                |
| Preferred                                | 0                 | \$0                | \$0                  | 196                          | \$3,580,672.96              |
| <b>Total</b>                             | <b>1,834</b>      | <b>\$1,260,336</b> | <b>\$512,028,000</b> | <b>2,863</b>                 | <b>\$105,612,614.49</b>     |

**ANNEX C: CRAVEN COUNTY**

| <b>Flood Zone</b>          | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|----------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Bridgeton</b>   |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 54                       | \$45,522             | \$12,403,000              | 109                                 | \$3,067,435.09                     |
| B, C & X Zone              |                          |                      |                           |                                     |                                    |
| Standard                   | 16                       | \$11,863             | \$4,342,000               | 1                                   | \$60,000.00                        |
| Preferred                  | 0                        | \$0                  | \$0                       | 5                                   | \$261,861.40                       |
| <b>Total</b>               | <b>70</b>                | <b>\$57,385</b>      | <b>\$16,745,000</b>       | <b>115</b>                          | <b>\$3,389,296.49</b>              |
| <b>Town of Cove City</b>   |                          |                      |                           |                                     |                                    |
| B, C & X Zone              |                          |                      |                           |                                     |                                    |
| Standard                   | 1                        | \$612                | \$210,000                 | 0                                   | \$0.00                             |
| Preferred                  | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>               | <b>1</b>                 | <b>\$612</b>         | <b>\$210,000</b>          | <b>0</b>                            | <b>\$0.00</b>                      |
| <b>Town of Dover</b>       |                          |                      |                           |                                     |                                    |
| B, C & X Zone              |                          |                      |                           |                                     |                                    |
| Standard                   | 1                        | \$392                | \$140,000                 | 1                                   | \$1,010.53                         |
| Preferred                  | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>               | <b>1</b>                 | <b>\$392</b>         | <b>\$140,000</b>          | <b>1</b>                            | <b>\$1,010.53</b>                  |
| <b>City of Havelock</b>    |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 19                       | \$19,747             | \$5,604,000               | 54                                  | \$2,401,243.09                     |
| A Zones                    | 0                        | \$0                  | \$0                       | 2                                   | \$9,980.65                         |
| B, C & X Zone              |                          |                      |                           |                                     |                                    |
| Standard                   | 188                      | \$111,346            | \$53,650,000              | 13                                  | \$601,677.73                       |
| Preferred                  | 0                        | \$0                  | \$0                       | 90                                  | \$2,112,658.27                     |
| <b>Total</b>               | <b>207</b>               | <b>\$131,093</b>     | <b>\$59,254,000</b>       | <b>159</b>                          | <b>\$5,125,559.74</b>              |
| <b>City of New Bern</b>    |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 818                      | \$581,670            | \$200,819,000             | 1,620                               | \$63,772,196.37                    |
| V01-30 & VE Zones          | 0                        | \$0                  | \$0                       | 9                                   | \$97,007.73                        |
| B, C & X Zone              |                          |                      |                           |                                     |                                    |
| Standard                   | 659                      | \$385,991            | \$192,603,000             | 36                                  | \$1,558,329.37                     |
| Preferred                  | 0                        | \$0                  | \$0                       | 147                                 | \$3,024,942.49                     |
| <b>Total</b>               | <b>1,477</b>             | <b>\$967,661</b>     | <b>\$393,422,000</b>      | <b>1,813</b>                        | <b>\$68,452,475.96</b>             |
| <b>Town of River Bend</b>  |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 295                      | \$313,636            | \$76,133,000              | 781                                 | \$41,278,407.69                    |
| A Zones                    | 0                        | \$0                  | \$0                       | 1                                   | \$197.57                           |
| B, C & X Zone              |                          |                      |                           |                                     |                                    |
| Standard                   | 92                       | \$64,479             | \$27,455,000              | 12                                  | \$752,091.47                       |
| Preferred                  | 0                        | \$0                  | \$0                       | 22                                  | \$400,891.41                       |
| <b>Total</b>               | <b>387</b>               | <b>\$378,115</b>     | <b>\$103,588,000</b>      | <b>816</b>                          | <b>\$42,431,588.14</b>             |
| <b>Town of Trent Woods</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 145                      | \$145,178            | \$41,778,000              | 208                                 | \$12,704,614.39                    |
| A Zones                    | 1                        | \$837                | \$500,000                 | 2                                   | \$16,609.82                        |
| B, C & X Zone              |                          |                      |                           |                                     |                                    |
| Standard                   | 151                      | \$106,852            | \$51,175,000              | 11                                  | \$574,515.02                       |
| Preferred                  | 0                        | \$0                  | \$0                       | 37                                  | \$646,244.78                       |
| <b>Total</b>               | <b>297</b>               | <b>\$252,867</b>     | <b>\$93,453,000</b>       | <b>258</b>                          | <b>\$13,941,984.01</b>             |

**ANNEX C: CRAVEN COUNTY**

| Flood Zone               | Policies in Force | Total Premium  | Insurance in Force | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--------------------------|-------------------|----------------|--------------------|------------------------------|-----------------------------|
| <b>Town of Vanceboro</b> |                   |                |                    |                              |                             |
| A01-30 & AE Zones        | 3                 | \$2,200        | \$463,000          | 0                            | \$0.00                      |
| A Zones                  | 0                 | \$0            | \$0                | 1                            | \$3,323.29                  |
| B, C & X Zone            |                   |                |                    |                              |                             |
| Standard                 | 1                 | \$2,828        | \$380,000          | 0                            | \$0.00                      |
| Preferred                | 0                 | \$0            | \$0                | 0                            | \$0.00                      |
| <b>Total</b>             | <b>4</b>          | <b>\$5,028</b> | <b>\$843,000</b>   | <b>1</b>                     | <b>\$3,323.29</b>           |

Source: FEMA Community Information System, accessed January 2025

**Table C.16 – NFIP Policy and Claims Data Pre-FIRM**

| Flood Zone                               | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Craven County Unincorporated Area</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                        | 435               | \$280,398        | \$93,649,000         | 1,252                        | \$45,649,402.27             |
| A Zones                                  | 0                 | \$0              | \$0                  | 24                           | \$825,512.44                |
| B, C & X Zone                            | 198               | \$132,134        | \$59,536,000         | 122                          | \$2,231,254.47              |
| Standard                                 | 198               | \$132,134        | \$59,536,000         | 24                           | \$339,151.27                |
| Preferred                                | 0                 | \$0              | \$0                  | 99                           | \$1,892,103.20              |
| <b>Total</b>                             | <b>633</b>        | <b>\$412,532</b> | <b>\$153,185,000</b> | <b>1,398</b>                 | <b>\$48,706,169.18</b>      |
| <b>Town of Bridgeton</b>                 |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                        | 37                | \$31,706         | \$7,802,000          | 88                           | \$2,709,299.30              |
| B, C & X Zone                            | 12                | \$9,285          | \$3,309,000          | 5                            | \$308,530.80                |
| Standard                                 | 12                | \$9,285          | \$3,309,000          | 1                            | \$60,000.00                 |
| Preferred                                | 0                 | \$0              | \$0                  | 4                            | \$248,530.80                |
| <b>Total</b>                             | <b>49</b>         | <b>\$40,991</b>  | <b>\$11,111,000</b>  | <b>93</b>                    | <b>\$3,017,830.10</b>       |
| <b>Town of Cove City</b>                 |                   |                  |                      |                              |                             |
| B, C & X Zone                            | 1                 | \$612            | \$210,000            | 0                            | \$0.00                      |
| Standard                                 | 1                 | \$612            | \$210,000            | 0                            | \$0.00                      |
| Preferred                                | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                             | <b>1</b>          | <b>\$612</b>     | <b>\$210,000</b>     | <b>0</b>                     | <b>\$0.00</b>               |
| <b>Town of Dover</b>                     |                   |                  |                      |                              |                             |
| B, C & X Zone                            | 1                 | \$392            | \$140,000            | 1                            | \$1,010.53                  |
| Standard                                 | 1                 | \$392            | \$140,000            | 1                            | \$1,010.53                  |
| Preferred                                | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                             | <b>1</b>          | <b>\$392</b>     | <b>\$140,000</b>     | <b>1</b>                     | <b>\$1,010.53</b>           |
| <b>City of Havelock</b>                  |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                        | 11                | \$11,274         | \$2,701,000          | 43                           | \$1,553,605.13              |
| A Zones                                  | 0                 | \$0              | \$0                  | 2                            | \$9,980.65                  |
| B, C & X Zone                            | 108               | \$65,539         | \$30,695,000         | 82                           | \$2,086,034.89              |
| Standard                                 | 108               | \$65,539         | \$30,695,000         | 13                           | \$601,677.73                |
| Preferred                                | 0                 | \$0              | \$0                  | 69                           | \$1,484,357.16              |
| <b>Total</b>                             | <b>119</b>        | <b>\$76,813</b>  | <b>\$33,396,000</b>  | <b>127</b>                   | <b>\$3,649,620.67</b>       |

**ANNEX C: CRAVEN COUNTY**

| Flood Zone                 | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|----------------------------|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>City of New Bern</b>    |                   |                  |                      |                              |                             |
| A01-30 & AE Zones          | 305               | \$251,828        | \$66,625,000         | 1,050                        | \$36,639,661.20             |
| V01-30 & VE Zones          | 0                 | \$0              | \$0                  | 9                            | \$97,007.73                 |
| B, C & X Zone              | 266               | \$164,378        | \$66,617,000         | 108                          | \$2,365,911.07              |
| Standard                   | 266               | \$164,378        | \$66,617,000         | 28                           | \$787,486.89                |
| Preferred                  | 0                 | \$0              | \$0                  | 80                           | \$1,578,424.18              |
| <b>Total</b>               | <b>571</b>        | <b>\$416,206</b> | <b>\$133,242,000</b> | <b>1,168</b>                 | <b>\$39,102,580.00</b>      |
| <b>Town of River Bend</b>  |                   |                  |                      |                              |                             |
| A01-30 & AE Zones          | 196               | \$208,540        | \$46,949,000         | 525                          | \$27,701,211.14             |
| A Zones                    | 0                 | \$0              | \$0                  | 1                            | \$197.57                    |
| B, C & X Zone              | 50                | \$36,358         | \$14,638,000         | 16                           | \$544,282.79                |
| Standard                   | 50                | \$36,358         | \$14,638,000         | 6                            | \$381,852.73                |
| Preferred                  | 0                 | \$0              | \$0                  | 9                            | \$162,430.06                |
| <b>Total</b>               | <b>246</b>        | <b>\$244,898</b> | <b>\$61,587,000</b>  | <b>542</b>                   | <b>\$28,245,691.50</b>      |
| <b>Town of Trent Woods</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones          | 94                | \$99,907         | \$25,548,000         | 154                          | \$9,871,534.97              |
| A Zones                    | 1                 | \$837            | \$500,000            | 2                            | \$16,609.82                 |
| B, C & X Zone              | 99                | \$72,899         | \$33,349,000         | 37                           | \$1,067,761.41              |
| Standard                   | 99                | \$72,899         | \$33,349,000         | 11                           | \$574,515.02                |
| Preferred                  | 0                 | \$0              | \$0                  | 26                           | \$493,246.39                |
| <b>Total</b>               | <b>194</b>        | <b>\$173,643</b> | <b>\$59,397,000</b>  | <b>193</b>                   | <b>\$10,955,906.20</b>      |
| <b>Town of Vanceboro</b>   |                   |                  |                      |                              |                             |
| A01-30 & AE Zones          | 2                 | \$1,441          | \$229,000            | 0                            | \$0.00                      |
| A Zones                    | 0                 | \$0              | \$0                  | 1                            | \$3,323.29                  |
| <b>Total</b>               | <b>2</b>          | <b>\$1,441</b>   | <b>\$229,000</b>     | <b>1</b>                     | <b>\$3,323.29</b>           |

Source: FEMA Community Information System, accessed January 2025

**Table C.17 – NFIP Policy and Claims Data Post-FIRM**

| Flood Zone                               | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Craven County Unincorporated Area</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                        | 804               | \$601,676        | \$229,399,000        | 1,346                        | \$54,588,394.70             |
| A Zones                                  | 1                 | \$767            | \$277,000            | 11                           | \$92,458.54                 |
| B, C & X Zone                            | 396               | \$245,361        | \$129,167,000        | 106                          | \$2,003,730.34              |
| Standard                                 | 396               | \$245,361        | \$129,167,000        | 10                           | \$537,022.31                |
| Preferred                                | 0                 | \$0              | \$0                  | 97                           | \$1,688,569.76              |
| <b>Total</b>                             | <b>1,201</b>      | <b>\$847,804</b> | <b>\$358,843,000</b> | <b>1,463</b>                 | <b>\$56,684,583.58</b>      |
| <b>Town of Bridgeton</b>                 |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                        | 17                | \$13,816         | \$4,601,000          | 21                           | \$358,135.79                |
| B, C & X Zone                            | 4                 | \$2,578          | \$1,033,000          | 1                            | \$13,330.60                 |
| Standard                                 | 4                 | \$2,578          | \$1,033,000          | 0                            | \$0.00                      |
| Preferred                                | 0                 | \$0              | \$0                  | 1                            | \$13,330.60                 |
| <b>Total</b>                             | <b>21</b>         | <b>\$16,394</b>  | <b>\$5,634,000</b>   | <b>22</b>                    | <b>\$371,466.39</b>         |

**ANNEX C: CRAVEN COUNTY**

| <b>Flood Zone</b>          | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|----------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Cove City</b>   |                          |                      |                           |                                     |                                    |
| B, C & X Zone              | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| Standard                   | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| Preferred                  | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>               | <b>0</b>                 | <b>\$0</b>           | <b>\$0</b>                | <b>0</b>                            | <b>\$0.00</b>                      |
| <b>Town of Dover</b>       |                          |                      |                           |                                     |                                    |
| B, C & X Zone              | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| Standard                   | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| Preferred                  | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>               | <b>0</b>                 | <b>\$0</b>           | <b>\$0</b>                | <b>0</b>                            | <b>\$0.00</b>                      |
| <b>City of Havelock</b>    |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 8                        | \$8,473              | \$2,903,000               | 11                                  | \$847,637.96                       |
| B, C & X Zone              | 80                       | \$45,807             | \$22,955,000              | 21                                  | \$628,301.11                       |
| Standard                   | 80                       | \$45,807             | \$22,955,000              | 0                                   | \$0.00                             |
| Preferred                  | 0                        | \$0                  | \$0                       | 21                                  | \$628,301.11                       |
| <b>Total</b>               | <b>88</b>                | <b>\$54,280</b>      | <b>\$25,858,000</b>       | <b>32</b>                           | <b>\$1,475,939.07</b>              |
| <b>City of New Bern</b>    |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 513                      | \$329,842            | \$134,194,000             | 570                                 | \$27,132,535.17                    |
| B, C & X Zone              | 393                      | \$221,613            | \$125,986,000             | 75                                  | \$2,217,360.79                     |
| Standard                   | 393                      | \$221,613            | \$125,986,000             | 8                                   | \$770,842.48                       |
| Preferred                  | 0                        | \$0                  | \$0                       | 67                                  | \$1,446,518.31                     |
| <b>Total</b>               | <b>906</b>               | <b>\$551,455</b>     | <b>\$260,180,000</b>      | <b>645</b>                          | <b>\$29,349,895.96</b>             |
| <b>Town of River Bend</b>  |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 99                       | \$105,096            | \$29,184,000              | 256                                 | \$13,577,196.55                    |
| B, C & X Zone              | 42                       | \$28,121             | \$12,817,000              | 19                                  | \$608,700.09                       |
| Standard                   | 42                       | \$28,121             | \$12,817,000              | 6                                   | \$370,238.74                       |
| Preferred                  | 0                        | \$0                  | \$0                       | 13                                  | \$238,461.35                       |
| <b>Total</b>               | <b>141</b>               | <b>\$133,217</b>     | <b>\$42,001,000</b>       | <b>275</b>                          | <b>\$14,185,896.64</b>             |
| <b>Town of Trent Woods</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 51                       | \$45,271             | \$16,230,000              | 54                                  | \$2,833,079.42                     |
| B, C & X Zone              | 52                       | \$33,953             | \$17,826,000              | 11                                  | \$152,998.39                       |
| Standard                   | 52                       | \$33,953             | \$17,826,000              | 0                                   | \$0.00                             |
| Preferred                  | 0                        | \$0                  | \$0                       | 11                                  | \$152,998.39                       |
| <b>Total</b>               | <b>103</b>               | <b>\$79,224</b>      | <b>\$34,056,000</b>       | <b>65</b>                           | <b>\$2,986,077.81</b>              |
| <b>Town of Vanceboro</b>   |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones          | 1                        | \$759                | \$234,000                 | 0                                   | \$0.00                             |
| B, C & X Zone              | 1                        | \$2,828              | \$380,000                 | 0                                   | \$0.00                             |
| Standard                   | 1                        | \$2,828              | \$380,000                 | 0                                   | \$0.00                             |
| Preferred                  | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>               | <b>2</b>                 | <b>\$3,587</b>       | <b>\$614,000</b>          | <b>0</b>                            | <b>\$0.00</b>                      |

Source: FEMA Community Information System, accessed January 2025



C.2.2 WILDFIRE

Table C.18 summarizes the acreage in Craven County that falls within the Wildland Urban Interface (WUI), categorized by housing density. Areas in the WUI are those where development may intermix with flammable vegetation. Over 68 percent of Craven County is not included in the WUI.

**Table C.18 - Wildland Urban Interface Acreage, Craven County**

|  | Housing Density      | Total Acreage  | Percent of Total Acreage |
|--|----------------------|----------------|--------------------------|
|  | Not in WUI           | 338,191        | 68.34%                   |
|  | LT 1hs/40ac          | 46,750         | 9.45%                    |
|  | 1hs/40ac to 1hs/20ac | 21,824         | 4.41%                    |
|  | 1hs/20ac to 1hs/10ac | 25,212         | 5.09%                    |
|  | 1hs/10ac to 1hs/5ac  | 19,740         | 3.99%                    |
|  | 1hs/5ac to 1hs/2ac   | 19,336         | 3.91%                    |
|  | 1hs/2ac to 3hs/1ac   | 22,838         | 4.61%                    |
|  | GT 3hs/1ac           | 1,008          | 0.20%                    |
|  | <b>Total</b>         | <b>494,899</b> | <b>100%</b>              |

Source: Southern Wildfire Risk Assessment

Figure C.28 depicts the WUI for Craven County and all participating jurisdictions. Figure C.29 through Figure C.31 detail the Fire Intensity Scale, which indicates the potential severity of fire based on fuel loads, topography, and other factors. Figure C.32 depicts Burn Probability based on landscape conditions, percentile weather, historical ignition patterns, and historical prevention and suppression efforts.

Potential fire intensity is highest in the unincorporated areas of Craven County, particularly in the southwestern and northeastern corners of the county as well as south of the Neuse River between Cove City and New Bern. Burn probability is highest in the southwestern corner of the county, and in much of unincorporated areas, it is moderate. Burn probability is low in most incorporated areas. While the southwest corner of the county has both high potential fire intensity and a high burn probability, this area is located outside of the WUI, so a fire here would not likely threaten human life or property.

Table C.19 through Table C.27 provides the count and estimated value of all structures that intersect with areas of unincorporated Craven County and participating jurisdictions that are rated moderate to high on the WUI Risk Index. Table C.28 through Table C.36 provides building counts and values for critical facilities by FEMA lifeline that are located in areas rated moderate to high on the WUI Risk Index.

**Table C.19 - Structures at Risk to Moderate-High WUI Risk Index, Unincorporated Craven County**

| Occupancy    | Structures at Risk | Structure Value           | Estimated Content Value | Total Value               |
|--------------|--------------------|---------------------------|-------------------------|---------------------------|
| Agriculture  | 379                | \$15,639,575.00           | \$15,639,575.00         | \$31,279,150.00           |
| Commercial   | 586                | \$212,042,648.00          | \$212,042,648.00        | \$424,085,296.00          |
| Education    | 19                 | \$60,950,482.00           | \$60,950,482.00         | \$121,900,964.00          |
| Government   | 50                 | \$22,227,956.00           | \$22,227,956.00         | \$44,455,912.00           |
| Industrial   | 38                 | \$6,413,815.00            | \$9,620,722.50          | \$16,034,537.50           |
| Religious    | 132                | \$130,213,965.00          | \$130,213,965.00        | \$260,427,930.00          |
| Residential  | 15,946             | \$1,452,610,249.00        | \$726,305,124.50        | \$2,178,915,373.50        |
| <b>Total</b> | <b>17,150</b>      | <b>\$1,900,098,690.00</b> | <b>\$950,049,345.00</b> | <b>\$2,850,148,035.00</b> |

Source: Southern Wildfire Risk Assessment

**Table C.20 - Structures at Risk to Moderate-High WUI Risk Index, City of Havelock**

| Occupancy    | Structures at Risk | Structure Value           | Estimated Content Value | Total Value               |
|--------------|--------------------|---------------------------|-------------------------|---------------------------|
| Agriculture  | 4                  | \$170,230.00              | \$170,230.00            | \$340,460.00              |
| Commercial   | 312                | \$199,387,415.00          | \$199,387,415.00        | \$398,774,830.00          |
| Education    | 18                 | \$137,802,880.00          | \$137,802,880.00        | \$275,605,760.00          |
| Government   | 56                 | \$453,094,387.00          | \$453,094,387.00        | \$906,188,774.00          |
| Industrial   | 9                  | \$3,363,328.00            | \$5,044,992.00          | \$8,408,320.00            |
| Religious    | 31                 | \$27,665,874.00           | \$27,665,874.00         | \$55,331,748.00           |
| Residential  | 4,407              | \$426,850,544.00          | \$213,425,272.00        | \$640,275,816.00          |
| <b>Total</b> | <b>4,837</b>       | <b>\$1,248,334,658.00</b> | <b>\$624,167,329.00</b> | <b>\$1,872,501,987.00</b> |

Source: Southern Wildfire Risk Assessment

**Table C.21 - Structures at Risk to Moderate-High WUI Risk Index, City of New Bern**

| Occupancy    | Structures at Risk | Structure Value           | Estimated Content Value | Total Value               |
|--------------|--------------------|---------------------------|-------------------------|---------------------------|
| Agriculture  | 14                 | \$390,972.00              | \$390,972.00            | \$781,944.00              |
| Commercial   | 725                | \$212,259,307.00          | \$212,259,307.00        | \$424,518,614.00          |
| Education    | 21                 | \$97,353,685.00           | \$97,353,685.00         | \$194,707,370.00          |
| Government   | 55                 | \$167,675,327.00          | \$167,675,327.00        | \$335,350,654.00          |
| Industrial   | 50                 | \$20,138,252.00           | \$30,207,378.00         | \$50,345,630.00           |
| Religious    | 73                 | \$137,874,285.00          | \$137,874,285.00        | \$275,748,570.00          |
| Residential  | 9,893              | \$1,227,171,453.00        | \$613,585,726.50        | \$1,840,757,179.50        |
| <b>Total</b> | <b>10,831</b>      | <b>\$1,862,863,281.00</b> | <b>\$931,431,640.50</b> | <b>\$2,794,294,921.50</b> |

Source: Southern Wildfire Risk Assessment

**Table C.22 - Structures at Risk to Moderate-High WUI Risk Index, Town of Bridgeton**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value             |
|--------------|--------------------|------------------------|-------------------------|-------------------------|
| Agriculture  | 1                  | \$393,800.00           | \$393,800.00            | \$787,600.00            |
| Commercial   | 61                 | \$65,853,044.00        | \$65,853,044.00         | \$131,706,088.00        |
| Education    | 1                  | \$361,104.00           | \$361,104.00            | \$722,208.00            |
| Government   | 2                  | \$590,085.00           | \$590,085.00            | \$1,180,170.00          |
| Industrial   | 5                  | \$345,471.00           | \$518,206.50            | \$863,677.50            |
| Religious    | 5                  | \$877,876.00           | \$877,876.00            | \$1,755,752.00          |
| Residential  | 197                | \$12,718,871.00        | \$6,359,435.50          | \$19,078,306.50         |
| <b>Total</b> | <b>272</b>         | <b>\$81,140,251.00</b> | <b>\$40,570,125.50</b>  | <b>\$121,710,376.50</b> |

Source: Southern Wildfire Risk Assessment

**Table C.23 - Structures at Risk to Moderate-High WUI Risk Index, Town of Cove City**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 2                  | \$7,920.00             | \$7,920.00              | \$15,840.00            |
| Commercial   | 26                 | \$943,758.00           | \$943,758.00            | \$1,887,516.00         |
| Education    | 0                  | \$0                    | \$0                     | \$0                    |
| Government   | 5                  | \$1,205,763.00         | \$1,205,763.00          | \$2,411,526.00         |
| Industrial   | 0                  | \$0                    | \$0                     | \$0                    |
| Religious    | 5                  | \$5,634,301.00         | \$5,634,301.00          | \$11,268,602.00        |
| Residential  | 222                | \$9,549,850.00         | \$4,774,925.00          | \$14,324,775.00        |
| <b>Total</b> | <b>260</b>         | <b>\$17,341,592.00</b> | <b>\$8,670,796.00</b>   | <b>\$26,012,388.00</b> |

Source: Southern Wildfire Risk Assessment

**Table C.24 - Structures at Risk to Moderate-High WUI Risk Index, Town of Dover**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value             |
|--------------|--------------------|------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                    | \$0                     | \$0                     |
| Commercial   | 5                  | \$60,050,001.00        | \$60,050,001.00         | \$120,100,002.00        |
| Education    | 0                  | \$0                    | \$0                     | \$0                     |
| Government   | 6                  | \$1,625,599.00         | \$1,625,599.00          | \$3,251,198.00          |
| Industrial   | 0                  | \$0                    | \$0                     | \$0                     |
| Religious    | 5                  | \$2,801,571.00         | \$2,801,571.00          | \$5,603,142.00          |
| Residential  | 205                | \$9,401,543.00         | \$4,700,771.50          | \$14,102,314.50         |
| <b>Total</b> | <b>221</b>         | <b>\$73,878,714.00</b> | <b>\$36,939,357.00</b>  | <b>\$110,818,071.00</b> |

Source: Southern Wildfire Risk Assessment

**Table C.25 - Structures at Risk to Moderate-High WUI Risk Index, Town of River Bend**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                     |
| Commercial   | 17                 | \$3,793,819.00          | \$3,793,819.00          | \$7,587,638.00          |
| Education    | 0                  | \$0                     | \$0                     | \$0                     |
| Government   | 1                  | \$30,850.00             | \$30,850.00             | \$61,700.00             |
| Industrial   | 0                  | \$0                     | \$0                     | \$0                     |
| Religious    | 2                  | \$2,137,172.00          | \$2,137,172.00          | \$4,274,344.00          |
| Residential  | 1,467              | \$191,440,156.00        | \$95,720,078.00         | \$287,160,234.00        |
| <b>Total</b> | <b>1,487</b>       | <b>\$197,401,997.00</b> | <b>\$98,700,998.50</b>  | <b>\$296,102,995.50</b> |

Source: Southern Wildfire Risk Assessment

**Table C.26 - Structures at Risk to Moderate-High WUI Risk Index, Town of Trent Woods**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 0                  | \$0                     | \$0                     | \$0                     |
| Commercial   | 19                 | \$19,286,468.00         | \$19,286,468.00         | \$38,572,936.00         |
| Education    | 6                  | \$11,400,878.00         | \$11,400,878.00         | \$22,801,756.00         |
| Government   | 3                  | \$3,068,688.00          | \$3,068,688.00          | \$6,137,376.00          |
| Industrial   | 2                  | \$2,641,886.00          | \$3,962,829.00          | \$6,604,715.00          |
| Religious    | 12                 | \$17,954,736.00         | \$17,954,736.00         | \$35,909,472.00         |
| Residential  | 1,845              | \$328,214,689.00        | \$164,107,344.50        | \$492,322,033.50        |
| <b>Total</b> | <b>1,887</b>       | <b>\$382,567,345.00</b> | <b>\$191,283,672.50</b> | <b>\$573,851,017.50</b> |

Source: Southern Wildfire Risk Assessment

**Table C.27 - Structures at Risk to Moderate-High WUI Risk Index, Town of Vanceboro**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 4                  | \$12,670.00             | \$12,670.00             | \$25,340.00             |
| Commercial   | 71                 | \$128,849,834.00        | \$128,849,834.00        | \$257,699,668.00        |
| Education    | 15                 | \$23,419,930.00         | \$23,419,930.00         | \$46,839,860.00         |
| Government   | 4                  | \$2,008,514.00          | \$2,008,514.00          | \$4,017,028.00          |
| Industrial   | 0                  | \$0                     | \$0                     | \$0                     |
| Religious    | 10                 | \$5,698,342.00          | \$5,698,342.00          | \$11,396,684.00         |
| Residential  | 362                | \$24,110,248.00         | \$12,055,124.00         | \$36,165,372.00         |
| <b>Total</b> | <b>466</b>         | <b>\$184,099,538.00</b> | <b>\$92,049,769.00</b>  | <b>\$276,149,307.00</b> |

Source: Southern Wildfire Risk Assessment

**Table C.28 - Critical Facilities Exposed to Wildfire, Unincorporated Craven County**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 0                       | \$0                 |
| Energy                   | 0                       | \$0                 |
| Food, Hydration, Shelter | 9                       | \$510,930           |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 4                       | \$0                 |
| Safety and Security      | 22                      | \$1,955,510         |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 28                      | \$15,677,800        |
| <b>Total</b>             | <b>63</b>               | <b>\$18,144,240</b> |

Source: Southern Wildfire Risk Assessment

**Table C.29 - Critical Facilities Exposed to Wildfire, City of Havelock**

| Type                     | Critical Facility Count | Structure Value    |
|--------------------------|-------------------------|--------------------|
| Communications           | 0                       | \$0                |
| Energy                   | 0                       | \$0                |
| Food, Hydration, Shelter | 7                       | \$0                |
| Hazardous Materials      | 0                       | \$0                |
| Health and Medical       | 1                       | \$0                |
| Safety and Security      | 1                       | \$2,029,100        |
| Transportation           | 0                       | \$0                |
| Water Systems            | 5                       | \$2,055,600        |
| <b>Total</b>             | <b>14</b>               | <b>\$4,084,700</b> |

Source: Southern Wildfire Risk Assessment

**Table C.30 - Critical Facilities Exposed to Wildfire, City of New Bern**

| Type                     | Critical Facility Count | Structure Value      |
|--------------------------|-------------------------|----------------------|
| Communications           | 0                       | \$0                  |
| Energy                   | 0                       | \$0                  |
| Food, Hydration, Shelter | 8                       | \$0                  |
| Hazardous Materials      | 0                       | \$0                  |
| Health and Medical       | 14                      | \$132,056,000        |
| Safety and Security      | 8                       | \$581,200            |
| Transportation           | 0                       | \$0                  |
| Water Systems            | 1                       | \$0                  |
| <b>Total</b>             | <b>31</b>               | <b>\$132,637,200</b> |

Source: Southern Wildfire Risk Assessment

**Table C.31 - Critical Facilities Exposed to Wildfire, Town of Bridgeton**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 2                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 2                       | \$0             |
| <b>Total</b>             | <b>4</b>                | <b>\$0</b>      |

Source: Southern Wildfire Risk Assessment

**Table C.32 - Critical Facilities Exposed to Wildfire, Town of Cove City**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 2                       | \$7,180         |
| Transportation           | 0                       | \$0             |
| Water Systems            | 2                       | \$0             |
| <b>Total</b>             | <b>4</b>                | <b>\$7,180</b>  |

Source: Southern Wildfire Risk Assessment

**Table C.33 - Critical Facilities Exposed to Wildfire, Town of Dover**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 0                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | \$0              |
| Safety and Security      | 1                       | \$416,300        |
| Transportation           | 0                       | \$0              |
| Water Systems            | 4                       | \$405,730        |
| <b>Total</b>             | <b>5</b>                | <b>\$822,030</b> |

Source: Southern Wildfire Risk Assessment

**Table C.34 - Critical Facilities Exposed to Wildfire, Town of River Bend**

| Type                     | Critical Facility Count | Structure Value    |
|--------------------------|-------------------------|--------------------|
| Communications           | 0                       | \$0                |
| Energy                   | 0                       | \$0                |
| Food, Hydration, Shelter | 0                       | \$0                |
| Hazardous Materials      | 0                       | \$0                |
| Health and Medical       | 1                       | \$5,643,300        |
| Safety and Security      | 3                       | \$244,010          |
| Transportation           | 0                       | \$0                |
| Water Systems            | 13                      | \$347,150          |
| <b>Total</b>             | <b>17</b>               | <b>\$6,234,460</b> |

Source: Southern Wildfire Risk Assessment

**Table C.35 - Critical Facilities Exposed to Wildfire, Town of Trent Woods**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 1                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 2                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 0                       | \$0             |
| <b>Total</b>             | <b>3</b>                | <b>\$0</b>      |

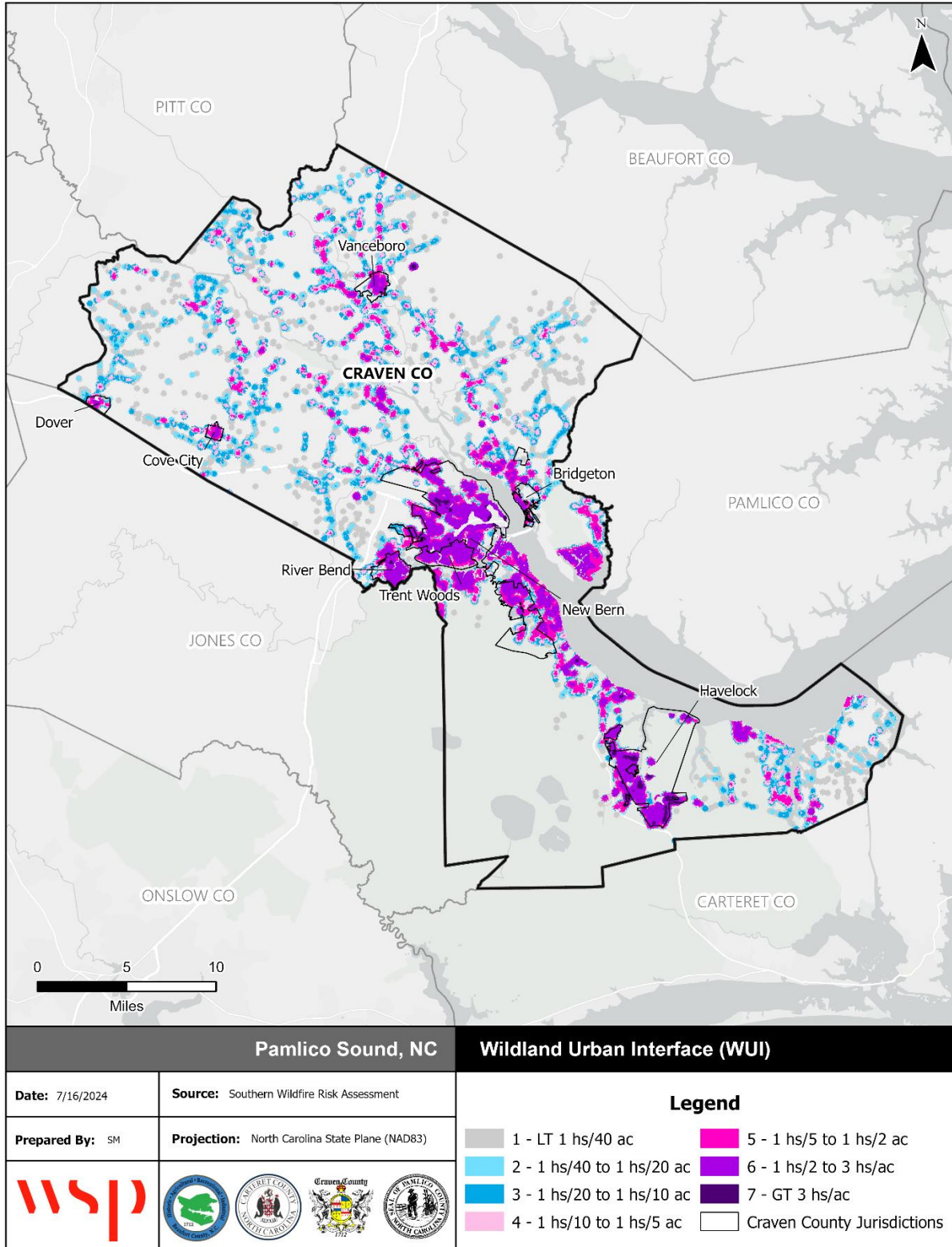
Source: Southern Wildfire Risk Assessment

**Table C.36 - Critical Facilities Exposed to Wildfire, Town of Vanceboro**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 0                       | \$0                 |
| Energy                   | 0                       | \$0                 |
| Food, Hydration, Shelter | 1                       | \$10,000,000        |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 1                       | \$0                 |
| Safety and Security      | 2                       | \$0                 |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 3                       | \$0                 |
| <b>Total</b>             | <b>7</b>                | <b>\$10,000,000</b> |

Source: Southern Wildfire Risk Assessment

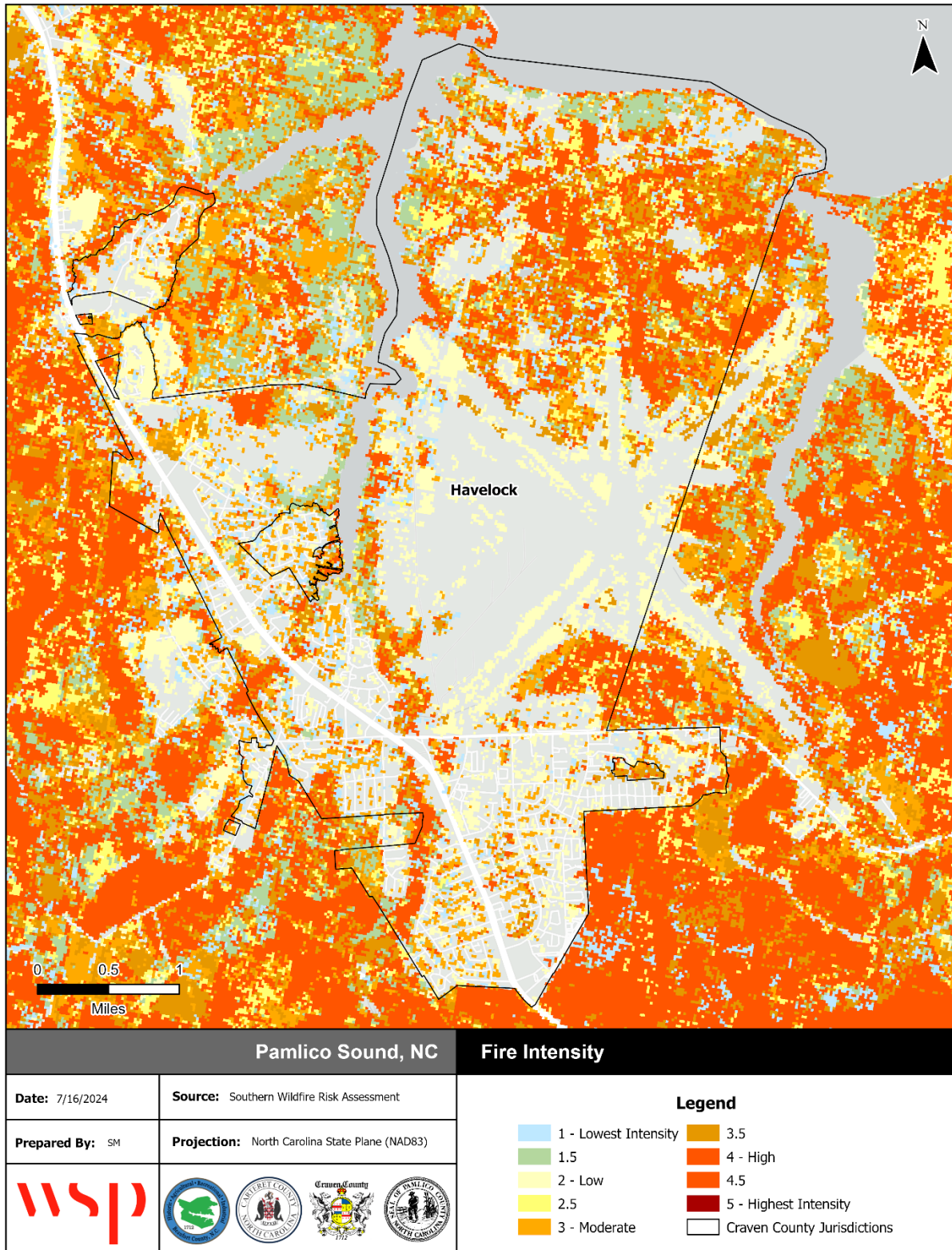
Figure C.28 - Wildland Urban Interface, Craven County



Source: Southern Wildfire Risk Assessment

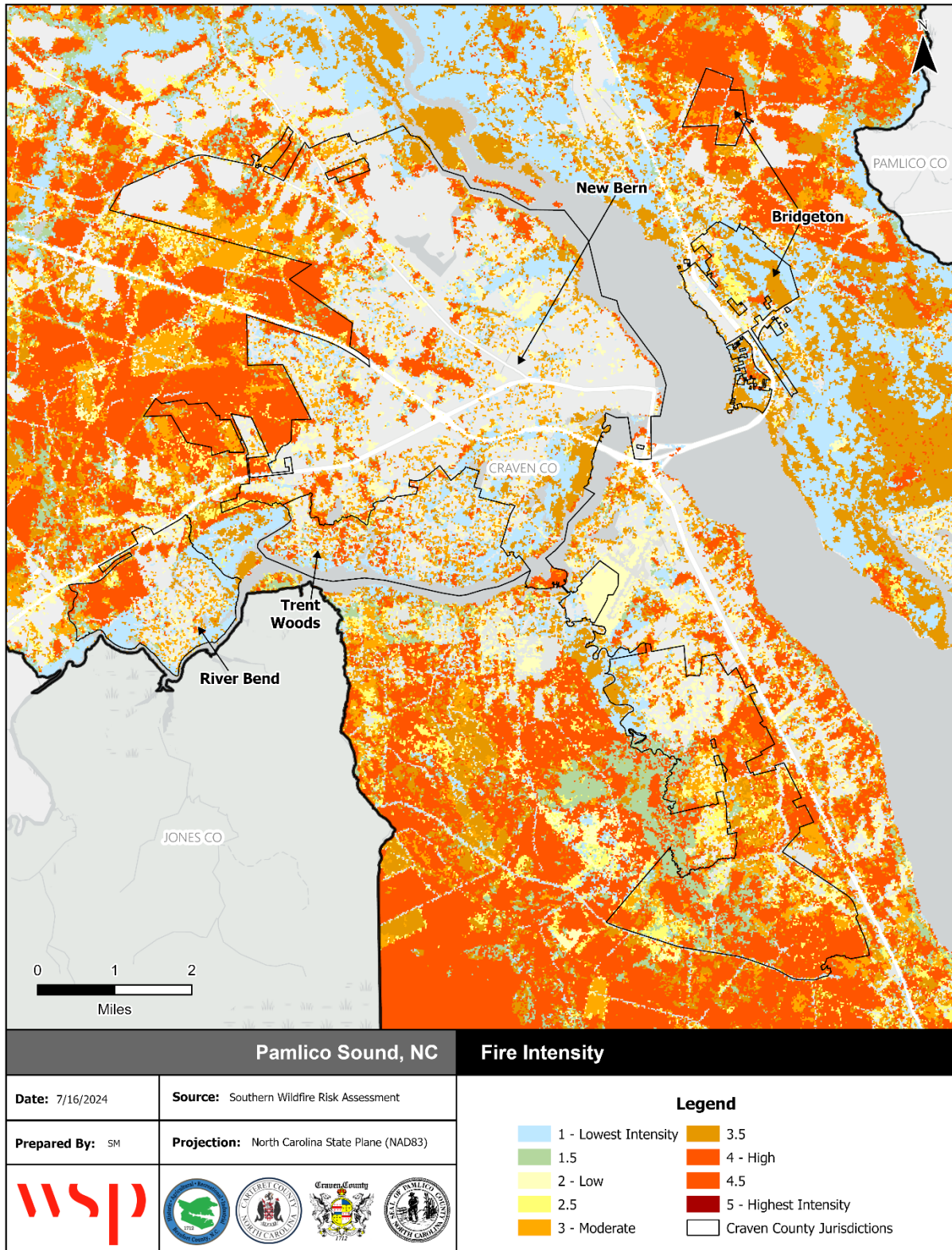


Figure C.29 - Fire Intensity Scale, Craven County (Detail 1)



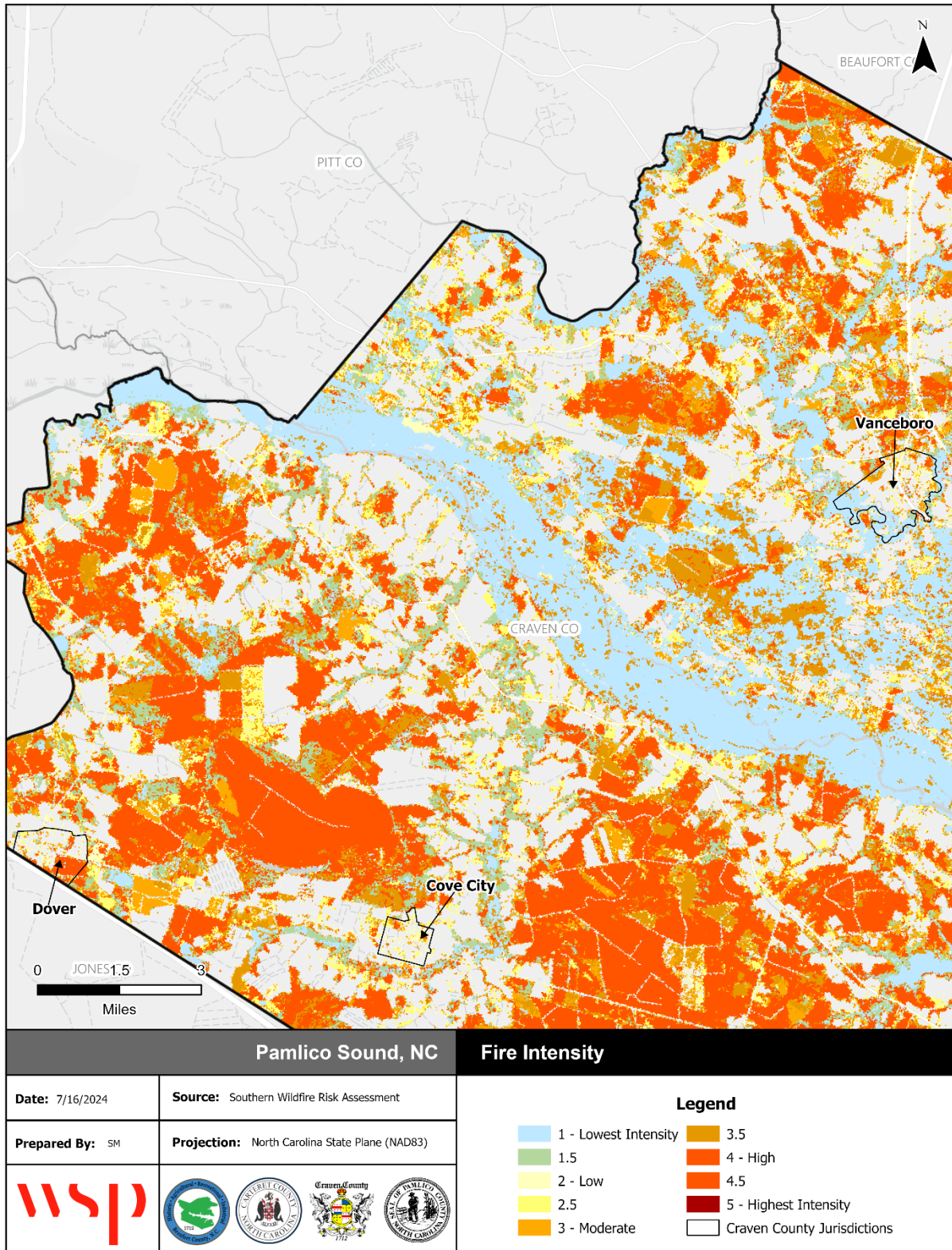
Source: Southern Wildfire Risk Assessment

Figure C.30 - Fire Intensity Scale, Craven County (Detail 2)



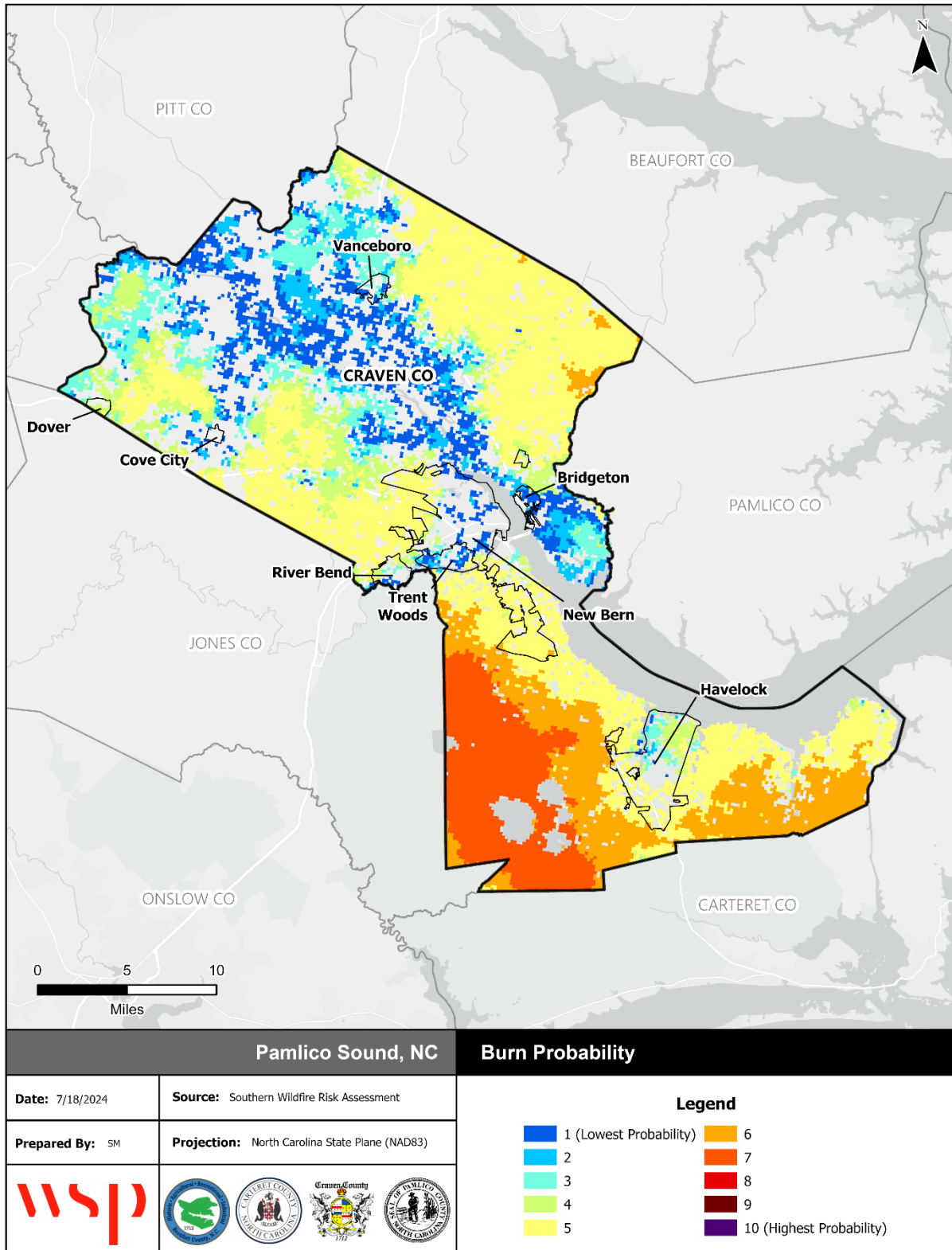
Source: Southern Wildfire Risk Assessment

Figure C.31 - Fire Intensity Scale, Craven County (Detail 3)



Source: Southern Wildfire Risk Assessment

Figure C.32 – Burn Probability, Craven County



Source: Southern Wildfire Risk Assessment

### C.3 MITIGATION STRATEGY

| Action # | Description   | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources | Implementation Schedule                         | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|---|--|---|----------|------------------|---------------------|--|----------------|---------------------------|---|---------------|---|
| CR1      | Review respective Comprehensive Land Use Plans annually to ensure that the Future Land Use Map adequately delineates portions of the community deemed unsuitable for development due to existing environmental conditions. This effort will also involve the identification of potential drainage easements and open space areas that will positively affect drainage conditions within areas documented as stormwater/flooding hot spots. Additionally, the County will attempt to identify portions of the County susceptible to wildfire damage. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure, Wildfire | Med      | 1.3              | P                   | <b>Craven County Planning Department,</b><br>Craven County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDCM, NCDPS, Other   | 2 to 3 years                                    | Carry Forward | In Progress. Craven County, as well as participating municipal jurisdictions, will consider updating the County's Comprehensive land Use Plan over the next three fiscal years.   |
| CR2      | Review respective Flood Damage Prevention Ordinances to assess whether any revisions and/or updates have been mandated by FEMA or NCEM. Additionally, jurisdictions will consider whether regulatory options are available to provide for more effective floodplain management.   | Craven County, Bridgeton, Cove City, Havelock, New Bern, River Bend, Trent Woods, Vanceboro        | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure           | Med      | 3.1              | P                   | <b>Craven County Planning Department,</b><br>Craven County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NCDPS                 | Other - Review annually                         | Carry Forward | Implementation is ongoing as needed. Craven County, and all participating municipal jurisdictions, will review their respective Flood Damage Prevention Ordinances annually, or as directed by NCDPS. Auto adopt of map changes has been incorporated within the Craven County Flood Damage Prevention Ordinance. |
| CR3      | Continue to support NCDEQ in efforts to enforce the Neuse River Basinwide Water Quality Management Rules.   | Craven County, Havelock, New Bern, River Bend, Trent Woods   | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure           | Low      | 1.3              | NRP                 | <b>Craven County Planning Department,</b><br>Municipal Administrations                                       | Staff Time     | GF                        | Ongoing - next 5 years                          | Carry Forward | These rules are currently being enforced. Changes in standards will coincide with amendments established by NCDEQ.  |
| CR4      | Consider the data and recommendations outlined within this plan when preparing updates to respective Capital Improvements Plans. All recommendations regarding capital expenditures will focus on siting infrastructure and public facilities outside of the Flood Hazard Area.   | Craven County, New Bern, River Bend, Havelock  | All Hazards   | Med      | 1.3              | SP                  | <b>Craven County Board of Commissioners,</b><br>Municipal Elected Boards                                     | Staff Time     | GF                        | Other - review annually with budget preparation | Carry Forward | Craven County, New Bern, River Bend and Havelock establish capital outlay for infrastructure projects through their respective Capital Improvements Plans. This will continue to occur in line with annual budget preparation.  |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost       | Potential Funding Sources     | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|--|---|----------|------------------|---------------------|--|----------------------|-------------------------------|-------------------------|---------------|---|
| CR5      | Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLP's) from future flooding events. The County will maintain a list of RLP's, and on an annual basis, will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Craven County will assist all municipal jurisdictions in working through the structural mitigation grant funding process. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure           | High     | 3.1              | PP                  | <b>Craven County Planning Department,</b><br>Craven County Board of Commissioners, Municipal Administrations | Staff Time           | GF, NCDPS, HMGP, BRIC, UHMA   | Ongoing - as needed     | Carry Forward | Craven County in coordination with all participating municipal jurisdictions will utilize annual as well as post disaster funding to treat repetitive loss properties through elevation, acquisition/demolition, or reconstruction. |
| CR6      | Continue to expand upon the County's Emergency Notification System available to all residents. Craven County Emergency Services will coordinate with all municipal jurisdictions regarding registration.   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | High     | 2.2              | ES                  | <b>Craven County Emergency Services,</b><br>Municipal Administrations  | Staff Time, \$30,000 | GF, NCDPS                     | Ongoing - next 5 years  | Carry Forward | Craven County utilizes, and will continue to employ, the CODE RED Emergency Alert System to notify residents of the status of natural hazard events.  |
| CR7      | Consider all of the data, information, maps and recommendations outlined throughout this plan when siting for the development of all new critical facilities.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure, Wildfire | Med      | 1.3              | PP                  | <b>Craven County Board of Commissioners,</b><br>Municipal Elected Boards                                     | To Be Determined     | GF, NCDPS, FEMA, USDA         | Ongoing - as needed     | Carry Forward | Mitigation measures will be considered any time development or relocation of any County or Municipal facility (critical) takes place.   |
| CR8      | Develop a formal system and plan for evaluating and assessing the availability and effectiveness of all critical facilities outlined within this plan. Craven County will coordinate with NCEM, American Red Cross, local animal shelters, local care homes, etc., in making determinations related to need and capacity required in the event of a disaster.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | High     | 2.1              | P                   | <b>Craven County Emergency Services,</b><br>Craven County Board of Commissioners, Municipal Elected Boards   | Staff Time           | GF, NCDPS, American Red Cross | Ongoing - Next 5 years  | Carry Forward | Craven County in coordination with all participating municipal jurisdictions, will work through this exercise annually, as well as following the effects of a natural hazard event through the corrective action planning process.  |
| CR9      | In conjunction with annual EOP updates, determine if access to all critical facilities is readily available in the event of a flooding event. Careful consideration should be given to localized flooding issues that may restrict access along limited access thoroughfares. Where access issues are identified, the County will establish a plan for alternative transportation.   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure           | High     | 3.2              | ES                  | <b>Craven County Emergency Services,</b><br>Municipal Administrations  | Staff Time           | GF, NCDPS                     | Ongoing - as needed     | Carry Forward | The County EOP is reviewed annually and updated as necessary.   |

| Action # | Description   | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources    | Implementation Schedule        | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|---|--|--|----------|------------------|---------------------|--|----------------|------------------------------|--------------------------------|---------------|---|
| CR10     | Continue to maintain the County's Continuity of Operations Plan (COP). This effort will include an annual update addressing risk management, service retention, alternative staffing procedures and recovery checklist for each County department.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards  | Med      | 3.2              | ES                  | <b>Craven County Emergency Services,</b> Municipal Administrations                                       | Staff Time     | GF, NCDPS                    | Ongoing - as needed            | Carry Forward | The County COP is reviewed annually and updated as necessary.   |
| CR11     | Review and update the County Emergency Operations Plan (EOP) on an annual basis. This update will involve coordination with all municipalities to ensure that all emergency contacts are accurate.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards  | Med      | 3.2              | ES                  | <b>Craven County Emergency Services,</b> Municipal Administrations                                       | Staff Time     | GF, NCDPS                    | Ongoing - as needed            | Carry Forward | The County EOP is reviewed annually and updated as necessary.   |
| CR12     | Continue to coordinate annually with the NC Forest Service to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Wildfire   | High     | 4.1              | PP                  | <b>Craven County Emergency Services,</b> Craven County Board of Commissioners, Municipal Administrations | Staff Time     | GF, NC Forest Service, NCDPS | Other - Annually               | Carry Forward | In Progress. Craven County, with the assistance of the North Carolina Forest Service, are now working in partnership to develop Fire Wise tactics to implement within the County. |
| CR13     | Work to expand upon the County's Special Medical Needs Registry (SMNR). The SMNR is available to all County residents. Effective participation will require close cooperation between County ES and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities. It should be noted that applicants must be approved once application is made. Application alone does not result in guaranteed emergency service. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | Med      | 2.2              | ES                  | <b>Craven County Emergency Services,</b> Municipal Administrations                                       | Staff Time     | GF                           | Ongoing - over next five years | Carry Forward | The County will work with participating municipal jurisdictions to advertise, maintain, and expand upon the County's special needs registry.                                      |
| CR14     | Continue to maintain the County's Local Emergency Planning Committee (LEPC) focused on monitoring the presence and proliferation of hazard materials throughout the County. The LEPC and County staff will continue to monitor these materials as submitted.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Hurricanes & Coastal Hazards, Flooding   | Med      | 4.2              | ES                  | <b>Craven County LEPC</b>  | Staff Time     | GF, NCDPS                    | Ongoing - next 5 years         | Carry Forward | Craven County Emergency Management will coordinate and maintain the County LEPC with representation from all participating municipalities.  |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|--|--|---|----------|------------------|---------------------|---|------------------|---------------------------|-------------------------|---------------|--|
| CR15     | Maintain information on the County website relating to evacuation and sheltering. Emergency information on the website will include: evacuation routes, sheltering, delays and closures, pet sheltering options, and special needs information.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | High     | 2.2              | PIO                 | <b>Craven County Emergency Services,</b> Municipal Administrations  | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Craven County maintains this information on the County's website and will continue to do so through the planning period.   |
| CR16     | Continue to provide detailed information regarding properties located within flood hazard areas as outlined under CRS Manual Section 322.a through 322.g.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods            | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 3.2              | PP                  | <b>Craven County Planning Department,</b> Craven County Board of Commissioners, Municipal Administrations | Staff Time       | GF                        | Ongoing - next 5 years  | Carry Forward | Craven County, Havelock, New Bern, and River Bend will continue to implement all activities defined under their respective CRS programs. Other Craven County municipalities will consider joining the program through implementation of this plan. |
| CR17     | Continue to maintain a library of materials focused on educating citizens, builders, realtors and developers about the dangers associated with floodplain development. This information will also provide material outlining sound techniques for floodplain development and floodproofing of existing structures. The County will also maintain staff educated in these issues to work with prospective builders. | Craven County, Havelock, New Bern, River Bend  | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | Med      | 2.2              | PIO, PP             | <b>Craven County Planning Department,</b> Craven County Board of Commissioners, Municipal Administrations | Staff Time       | GF                        | Ongoing - next 5 years  | Carry Forward | This activity is carried out by the County for the benefit of all Citizens including all participating municipal jurisdictions.  |
| CR18     | Maintain a contract with a qualified post-disaster recovery service provider. This contract will include the provision of essential services and equipment, including generators, and will include documentation required for reimbursement from FEMA/NCEM.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | Med      | 1.1              | PP                  | <b>Craven County Board of Commissioners,</b> Municipal Governing Boards                                   | To Be Determined | GF, NCDPS                 | Other - Review Annually | Carry Forward | Craven County, and all participating municipal jurisdictions, maintains a contractor for generators and storm cleanup.   |
| CR19     | Maintain reciprocal mutual aid agreements with all neighboring communities in an effort to ensure adequate fire protection throughout the County. Additionally, all jurisdictions will provide preventive maintenance efforts to ensure the fire hydrants and equipment are working properly.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards   | High     | 4.2              | ES                  | <b>Craven County Emergency Services,</b> Municipal Administrations, Volunteer Fire Departments            | Staff Time       | GF, NCDPS                 | Ongoing - next 5 years  | Carry Forward | Craven County Emergency Services maintains mutual aid agreements with neighboring communities and updates them annually.   |



| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed   | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost                            | Potential Funding Sources                  | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation   |
|----------|--|--|---|----------|------------------|---------------------|---|---|--|-------------------------|---------------|---|
| CR20     | Work to implement all strategies outlined within the Hurricane Matthew Resilient Redevelopment Plan.   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure             | Med      | 3.1              | P                   | <b>Craven County Board of Commissioners,</b><br>Municipal Governing Boards  | To Be Determined                          | GF, NCDPS, FEMA, NCDCM, USDA, NCDEQ, NCDOT | Ongoing - next 5 years  | Carry Forward | Craven County continues to utilize the Hurricane Matthew Resilient Redevelopment Plan to seek funding opportunities for items identified within this plan.  |
| CR21     | Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of Craven County Schools and other critical facilities that involves general public usage during and after disaster events (such as generators, structural modifications, etc.) which would make structures more resilient during future storms and natural hazard events. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure, Earthquake | High     | 2.1              | SP                  | <b>Craven County Planning Department,</b><br>Craven County Administration, Municipal Administrations  | Based on need and availability of funding | GF, FEMA, NCDPS                            | Ongoing - next 5 years  | Carry Forward | Craven County monitors and applies for grant funding as the need arises and/or funding becomes available. The County has currently applied for FMA funding and will continue to utilize funding when available to improve the resiliency of County Critical Facilities. |
| CR22     | Craven County will purchase a flood barrier system that will be installed around the Bryan Well site to protect the electrical and SCADA systems from further flood damage   | Craven County  | Flooding, Hurricanes & Coastal Hazards                                  | High     | 3.1              | PP                  | <b>Craven County Water Department,</b><br>Craven County Manager's Office, Craven County Planning Department, Eastern Carolina Council of Governments, Management Consultant, Engineering Consultant | To Be Determined                          | BRIC, Local Funding                        | 2026                    | New           | Applied for funding in 2023. Will continue to pursue funding for implementation.  |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed                      | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost                            | Potential Funding Sources | Implementation Schedule | 2025 Status | 2025 Status Comments/ Explanation  |
|----------|--|--|--|----------|------------------|---------------------|--|---|---------------------------|-------------------------|-------------|--|
| CR23     | The City of New Bern will procure services to complete a flood study assessing the effectiveness of stormwater culverts running under railroad embankments and designing system improvements that will reduce flooding impacts on surrounding properties   | New Bern   | Flooding, Hurricanes & Coastal Hazards | High     | 3.1              | SP                  | <b>City of New Bern</b> , Citizens Advocating Resiliency and Education (C.A.R.E.), American Flood Coalition, Duffyfield Residents' Council, Historic Dryborough Neighborhood Association, Sound Rivers, NC Coastal Federation, The North Carolina Railroad Company, Norfolk Southern Railway Company | To Be Determined                          | BRIC, Local Funding       | 2026                    | New         | Applied for funding in 2023. Will continue to pursue funding for implementation.   |
| CR24     | Trent Woods will begin implementation of its Stormwater Management Plan by completing a comprehensive investigation of existing storm drainage capacity and as necessary, upsizing existing culverts, rehabilitating channels through dredging, expanding the capacity of existing ditches, and enhancing performance through the creation of infiltration ditches | Trent Woods  | Flooding, Hurricanes & Coastal Hazards | High     | 3.1              | SP                  | <b>Town of Trent Woods</b> , Golden LEAF Foundation, NC DEQ Stormwater Division, State Legislature, Eastern Carolina Council of Government, Management Consultant, Engineering Consultant  | To Be Determined                          | BRIC, Local Funding       | 2026                    | New         | Applied for funding in 2023. Will continue to pursue funding for implementation.   |
| CR25     | Consider historical and cultural preservation opportunities when applying for federal grants   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | All Hazards                            | Med      | 2.2              | PP                  | <b>Craven County Planning Department</b>   | Based on need and availability of funding | FEMA, NCDPS               | Ongoing-Next 5 years    | New         | Cultural resources are impacted by climate change. In partnership with the National Conference of State Historic Preservation and the National Park Service, new tools are being developed to help guide managing historic structures. |

| Action # | Description  | Applicable Jurisdictions   | Hazards Addressed  | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost                            | Potential Funding Sources | Implementation Schedule | 2025 Status | 2025 Status Comments/ Explanation  |
|----------|--|--|--|----------|------------------|---------------------|---|---|---------------------------|-------------------------|-------------|--|
| CR26     | Work to create drainage maps within all areas of the County that are outside regularly maintained NCDOT right of ways to help address localized drainage issues that often lead to flood damage to homes, land, crops and other structures within the County. Craven County will seek out any grant funding that may assist in the maintenance of drainage ditches, blue-line streams or other tributaries that convey water to the river. | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes and Coastal Hazards, Dam Failure, Levee Failure, Tsunamis | Med      | 1.3              | SP                  | <b>Craven County Planning Department, Craven County Soil and Water Conservation</b> | Based on need and availability of funding | GF, FEMA, NCDPS, Other    | Ongoing-Next 5 years    | New         | Common flooding issues can be attributed to lack of maintenance to the existing drainage system. Often maintenance exceeds landowner capability to correct.  |
| CR27     | Integration of environmentally friendly flood control measures will be implemented where necessary, such as the installation of living shorelines, marsh sills, flood barriers etc. to protect environmentally sensitive areas and maintain the natural floodplain.  | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Flooding, Hurricanes and Coastal Hazards, Dam Failure, Levee Failure, Tsunamis | Med      | 1.2              | NRP                 | <b>Craven County Planning Department, Craven County Soil and Water Conservation</b> | Based on need and availability of funding | GF, FEMA, NCDPS, Other    | Ongoing - as needed     | New         | Craven County will seek out funding opportunities to help reestablish shorelines and floodplain lost to natural disasters or other means of degradation through environmentally friendly methods and techniques. |
| CR28     | Create or Update Community Wildfire Protection Plans in each fire district   | Craven County, Bridgeton, Cove City, Dover, Havelock, New Bern, River Bend, Trent Woods, Vanceboro | Wildfire   | Med      | 4.1              | P, PIO              | <b>Craven County Staff, NC Forest Service</b>                                       | To Be Determined                          | Grant Funds               | 3-5 years               | New         |  |
| CR29     | Conduct Curbside Rapid Wildfire Risk Assessments within fire spread distance of the Croatan National Forest.   | Craven County, Havelock, New Bern  | Wildfire   | High     | 4.1              | P                   | <b>Local fire departments, NC Forest Service, Croatan Area Fireshed Partnership</b> | To Be Determined                          | Grant funds               | 1-2 years               | New         |  |
| RB1      | Construct new road through Northwest Quadrant Area, connecting Plantation Drive to Old Pollockville Road to serve as additional ingress/egress route during flood events that block the primary and other access roads.  | River Bend   | Flooding, Hurricane & Coastal Hazards, Dam & Levee Failure                     | High     | 4.2              | ES                  | <b>River Bend Town Council</b>  | \$2,000,000                               | GF, FEMA, NCDPS, Town     | Ongoing - next 5 years  | New         |  |
| RB2      | Relocate Water Wells #1 & #2 and Water Treatment Plants #1 & #2 outside of the 100-year floodplain.  | River Bend   | Flooding, Hurricane & Coastal Hazards  | High     | 1.1              | PP                  | <b>River Bend Town Council</b>  | \$18,000,000                              | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |  |

| Action # | Description   | Applicable Jurisdictions | Hazards Addressed                     | Priority | Goal & Objective | Mitigation Category | Lead/Participating Agencies (Lead in bold) | Estimated Cost | Potential Funding Sources | Implementation Schedule | 2025 Status | 2025 Status Comments/ Explanation |
|----------|---|--------------------------|---------------------------------------|----------|------------------|---------------------|--|----------------|---------------------------|-------------------------|-------------|-----------------------------------|
| RB3      | Flood Mitigation at Wastewater Treatment Plant by raising top of structures to above base flood elevation and plus 2' freeboard where possible. | River Bend               | Flooding, Hurricane & Coastal Hazards | High     | 1.1              | PP                  | <b>River Bend Town Council</b>             | \$5,000,000    | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |                                   |
| RB4      | Relocate Wastewater Treatment Plant outside of the 100-year floodplain.   | River Bend               | Flooding, Hurricane & Coastal Hazards | Low      | 1.1              | PP                  | <b>River Bend Town Council</b>             | \$60,000,000   | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |                                   |
| RB5      | Floodproof sewer lift stations in floodplain  | River Bend               | Flooding, Hurricane & Coastal Hazards | Med      | 1.1              | PP                  | <b>River Bend Town Council</b>             | \$1,000,000    | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |                                   |
| RB6      | Improve Stormwater Drainage System Capacity in flood hazard areas   | River Bend               | Flooding, Hurricane & Coastal Hazards | High     | 1.3              | SP                  | <b>River Bend Town Council</b>             | \$4,000,000    | GF, FEMA, Town, NCDEQ     | Ongoing - next 5 years  | New         |                                   |

# ANNEX D PAMLICO COUNTY

## D.1 ASSET INVENTORY

Pamlico County and the HMPC provided a local inventory of critical facilities and community lifelines, which are a priority for mitigation planning and emergency management. Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. Table D.1 through Table D.10 provide a count of critical facilities by FEMA lifeline category by jurisdiction in Pamlico County. Figure D.1 through Figure D.10 shows the locations of all critical facilities within Pamlico County and participating jurisdictions. Note that no critical facilities were identified in the Towns of Mesic or Minnesott Beach.

Table D.11 provides a detailed inventory of the critical facilities in Pamlico County, indicating each facility's FEMA lifeline category, flood zone, 1% annual chance flood depth, and vulnerability to storm surge, sea level rise, and wildfire. More information on hazard vulnerability is provided in the hazard profiles.

**Table D.1 - Critical Facilities by Type, Unincorporated Pamlico County**

| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 5                      | \$111,500          |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 3                      | \$281,582          |
| Safety and Security      | 7                      | \$1,324,873        |
| Transportation           | 0                      | \$0                |
| Water Systems            | 8                      | \$5,329,605        |
| <b>Total</b>             | <b>23</b>              | <b>\$7,047,560</b> |

**Table D.2 - Critical Facilities by Type, Town of Alliance**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 0                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 0                      | \$0              |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 4                      | \$202,522        |
| Safety and Security      | 0                      | \$0              |
| Transportation           | 0                      | \$0              |
| Water Systems            | 0                      | \$0              |
| <b>Total</b>             | <b>4</b>               | <b>\$202,522</b> |

**Table D.3 - Critical Facilities by Type, Town of Arapahoe**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 0                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 1                      | \$86,136         |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 0                      | \$0              |
| Safety and Security      | 2                      | \$106,590        |
| Transportation           | 0                      | \$0              |
| Water Systems            | 0                      | \$0              |
| <b>Total</b>             | <b>3</b>               | <b>\$192,726</b> |

**Table D.4 - Critical Facilities by Type, Town of Bayboro**

| Facility Type            | Count of Facility Type | Structure Value     |
|--------------------------|------------------------|---------------------|
| Communications           | 0                      | \$0                 |
| Energy                   | 0                      | \$0                 |
| Food, Hydration, Shelter | 3                      | 44,227,837          |
| Hazardous Materials      | 0                      | \$0                 |
| Health and Medical       | 1                      | \$312,390           |
| Safety and Security      | 5                      | \$10,019,222        |
| Transportation           | 0                      | \$0                 |
| Water Systems            | 2                      | \$115,821           |
| <b>Total</b>             | <b>11</b>              | <b>\$54,675,270</b> |

**Table D.5 - Critical Facilities by Type, Town of Grantsboro**

| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 0                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 1                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 3                      | \$614           |
| Safety and Security      | 1                      | \$5,906         |
| Transportation           | 0                      | \$0             |
| Water Systems            | 0                      | \$0             |
| <b>Total</b>             | <b>5</b>               | <b>\$6,520</b>  |

**Table D.6 - Critical Facilities by Type, Town of Mesic**

| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 0                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 0                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 0                      | \$0             |
| Transportation           | 0                      | \$0             |
| Water Systems            | 0                      | \$0             |
| <b>Total</b>             | <b>0</b>               | <b>\$0</b>      |

**Table D.7 - Critical Facilities by Type, Town of Minnesott Beach**

| Facility Type            | Count of Facility Type | Structure Value |
|--------------------------|------------------------|-----------------|
| Communications           | 0                      | \$0             |
| Energy                   | 0                      | \$0             |
| Food, Hydration, Shelter | 0                      | \$0             |
| Hazardous Materials      | 0                      | \$0             |
| Health and Medical       | 0                      | \$0             |
| Safety and Security      | 0                      | \$0             |
| Transportation           | 0                      | \$0             |
| Water Systems            | 0                      | \$0             |
| <b>Total</b>             | <b>0</b>               | <b>\$0</b>      |

**Table D.8 - Critical Facilities by Type, Town of Oriental**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 0                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 0                      | \$0              |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 0                      | \$0              |
| Safety and Security      | 1                      | \$209,027        |
| Transportation           | 0                      | \$0              |
| Water Systems            | 2                      | \$177,274        |
| <b>Total</b>             | <b>3</b>               | <b>\$386,301</b> |

It was noted that in addition to the identified facilities in the Town of Oriental, the Town also considers the jetty at the head of Raccoon Creek and the restored shoreline at Whittaker Pointe to be critical infrastructure, as these lands are natural assets that protect the town from erosion, water, and wave energy.

**Table D.9 - Critical Facilities by Type, Town of Stonewall**

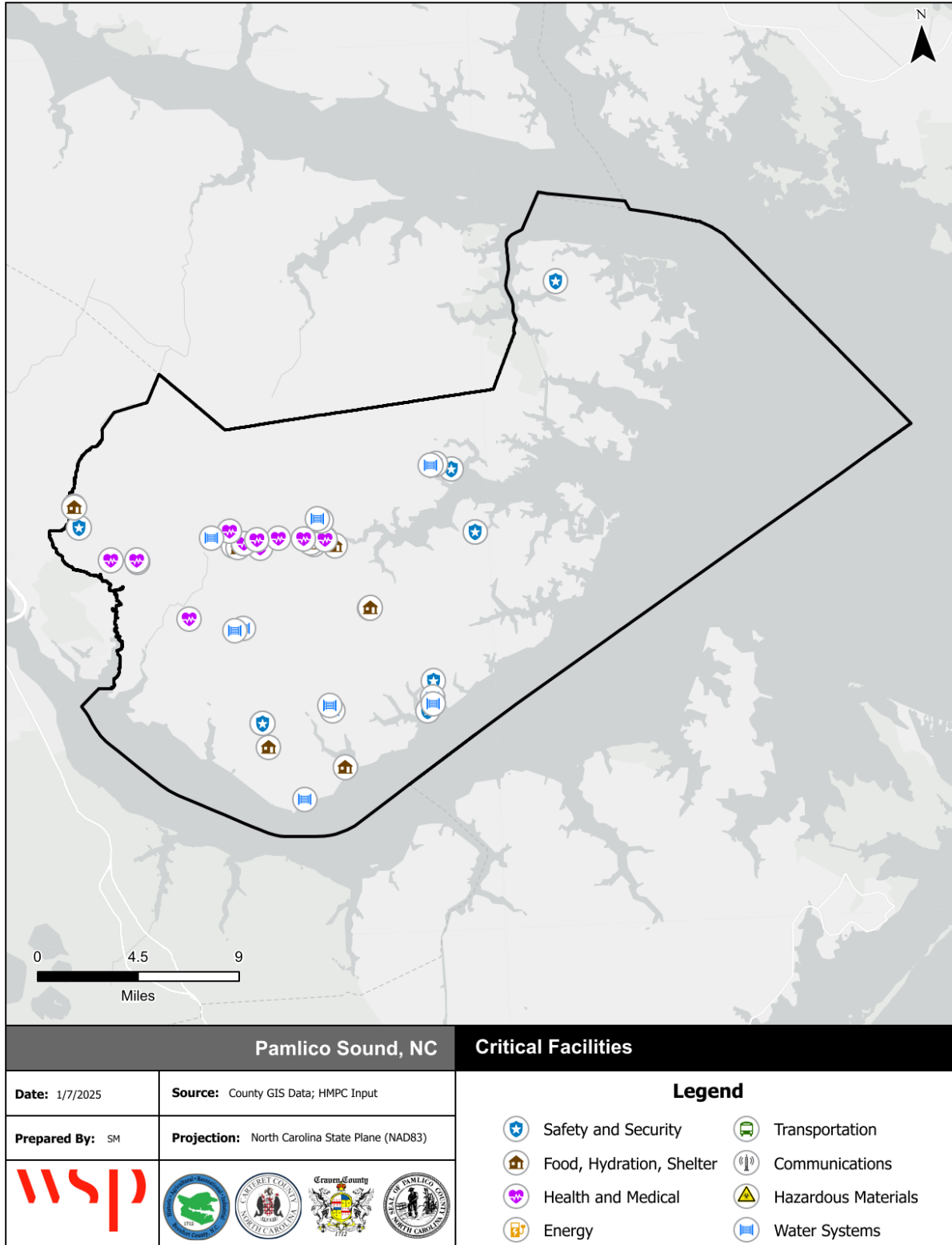
| Facility Type            | Count of Facility Type | Structure Value    |
|--------------------------|------------------------|--------------------|
| Communications           | 0                      | \$0                |
| Energy                   | 0                      | \$0                |
| Food, Hydration, Shelter | 1                      | \$4,352,375        |
| Hazardous Materials      | 0                      | \$0                |
| Health and Medical       | 0                      | \$0                |
| Safety and Security      | 0                      | \$0                |
| Transportation           | 0                      | \$0                |
| Water Systems            | 0                      | \$0                |
| <b>Total</b>             | <b>1</b>               | <b>\$4,352,375</b> |

**Table D.10 - Critical Facilities by Type, Town of Vandemere**

| Facility Type            | Count of Facility Type | Structure Value  |
|--------------------------|------------------------|------------------|
| Communications           | 0                      | \$0              |
| Energy                   | 0                      | \$0              |
| Food, Hydration, Shelter | 0                      | \$0              |
| Hazardous Materials      | 0                      | \$0              |
| Health and Medical       | 0                      | \$0              |
| Safety and Security      | 1                      | \$220,270        |
| Transportation           | 0                      | \$0              |
| Water Systems            | 0                      | \$0              |
| <b>Total</b>             | <b>1</b>               | <b>\$220,270</b> |

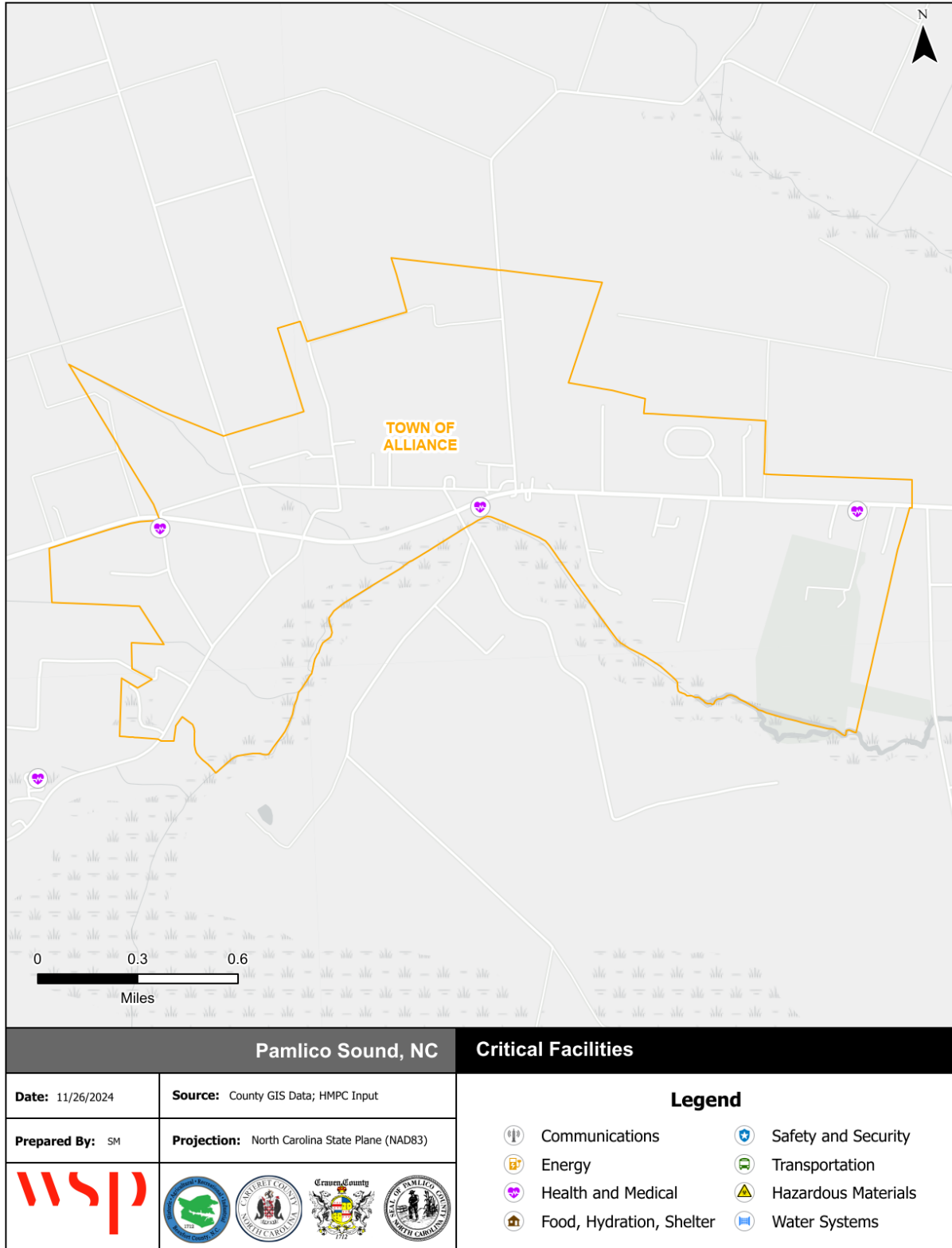


Figure D.1 – Critical Facilities, Pamlico County



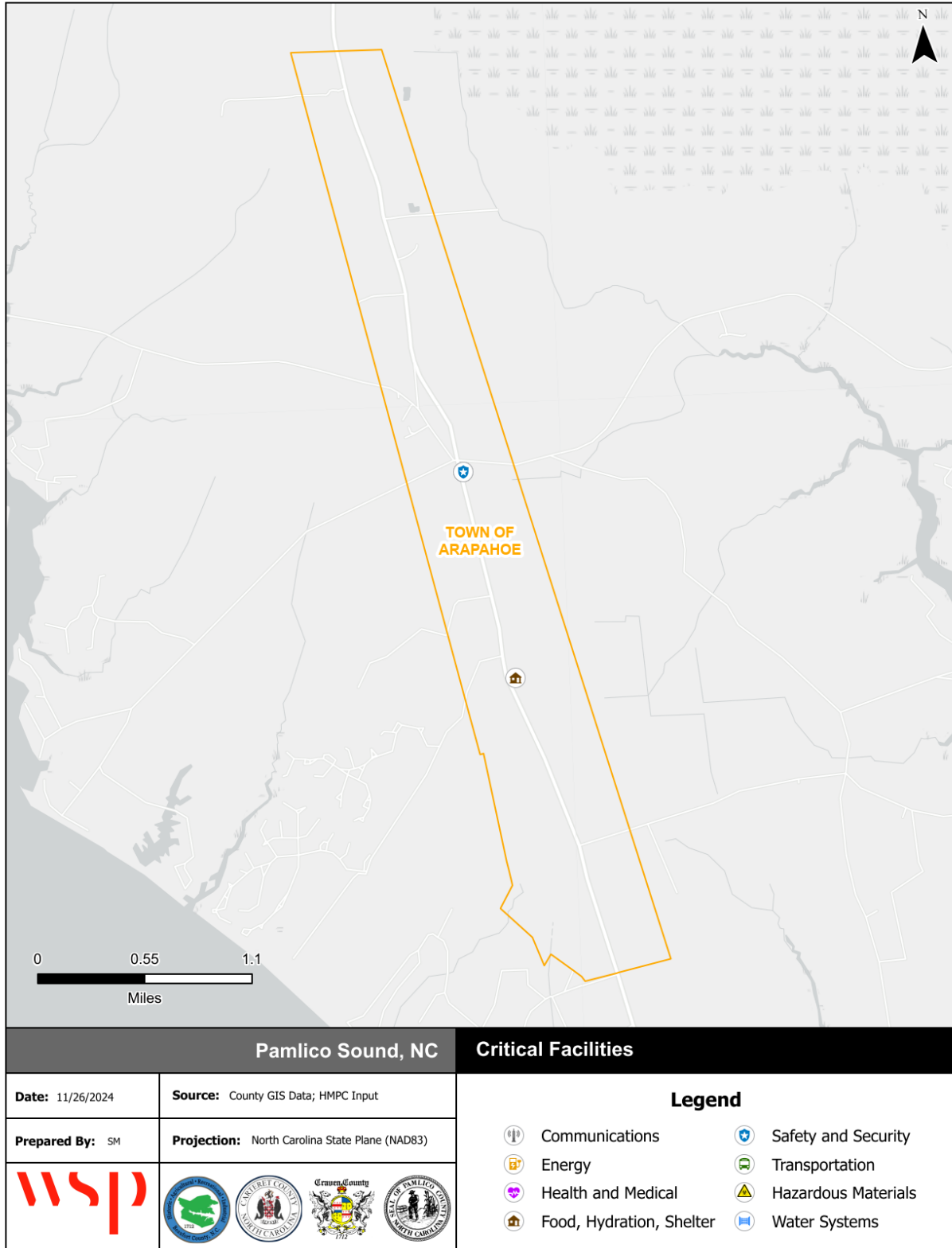
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure D.2 – Critical Facilities, Town of Alliance



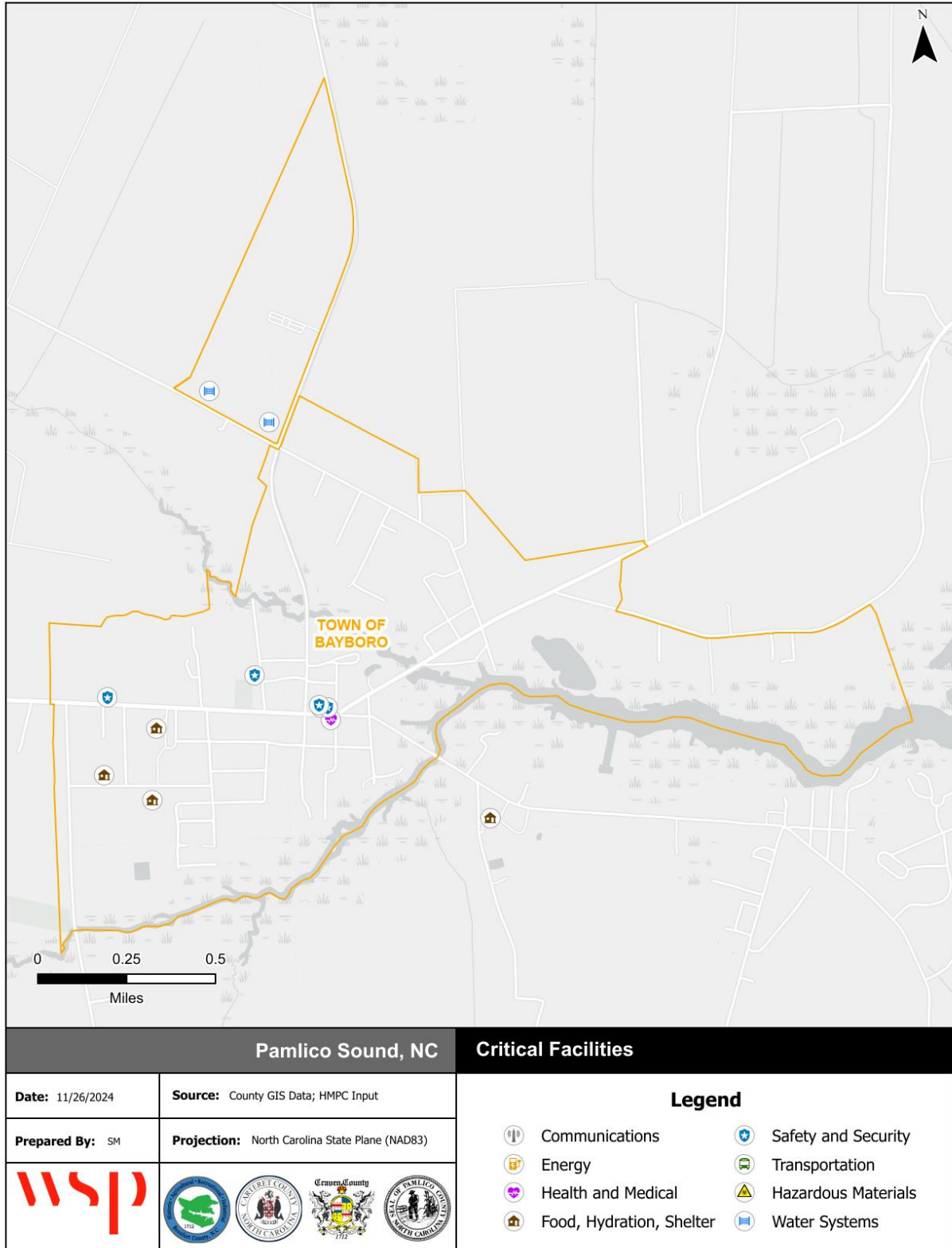
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure D.3 – Critical Facilities, Town of Arapahoe



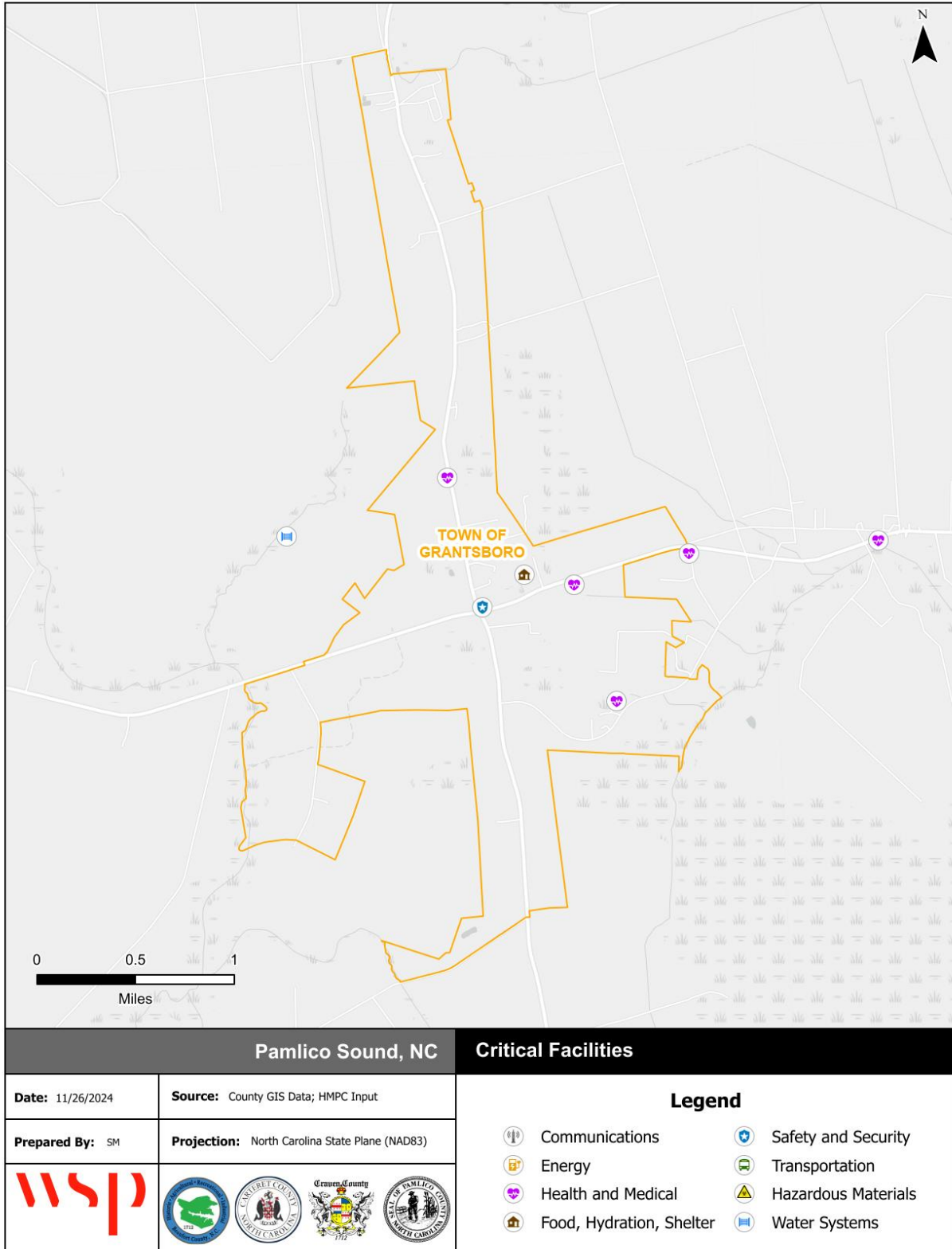
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure D.4 - Critical Facilities, Town of Bayboro



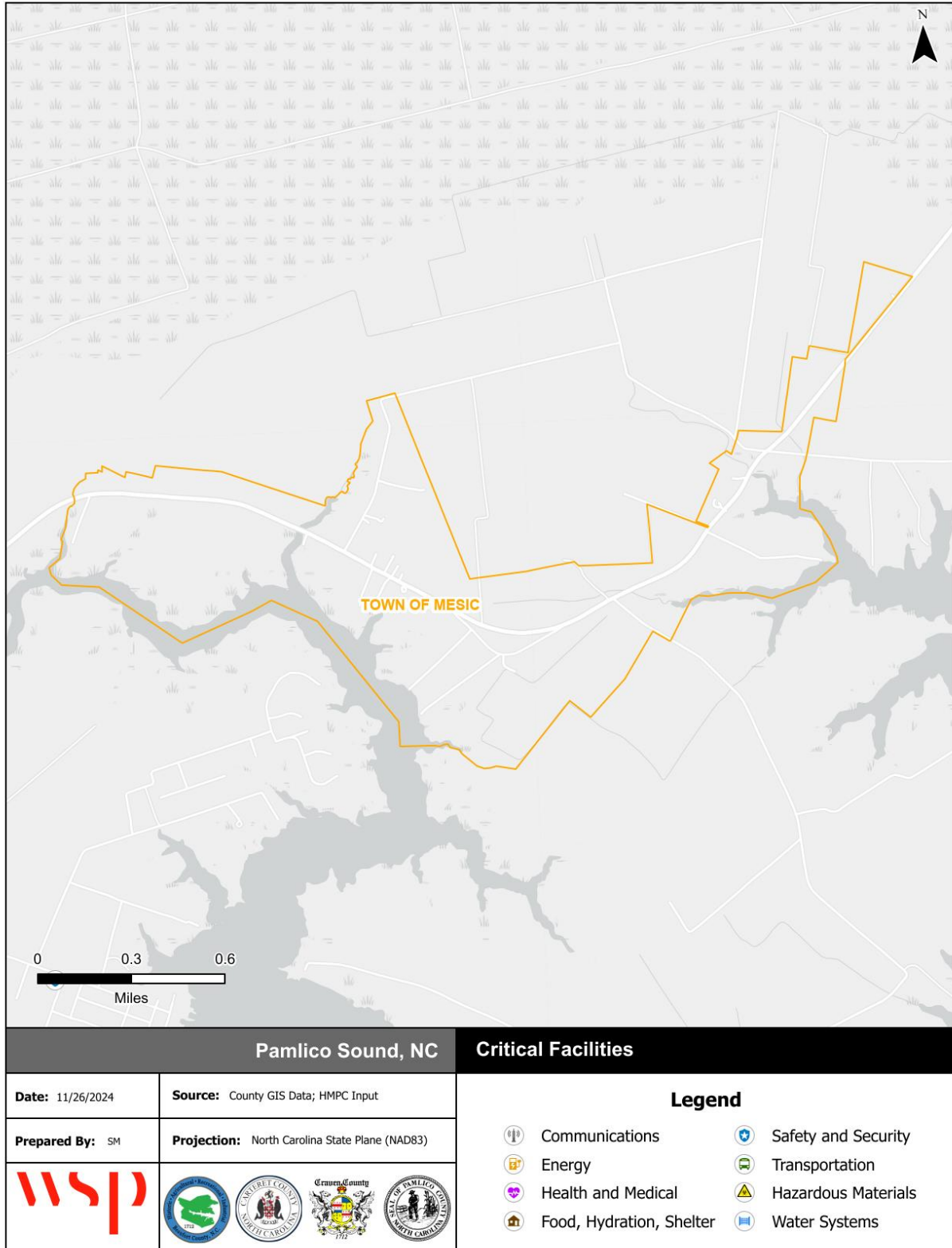
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure D.5 – Critical Facilities, Town of Grantsboro



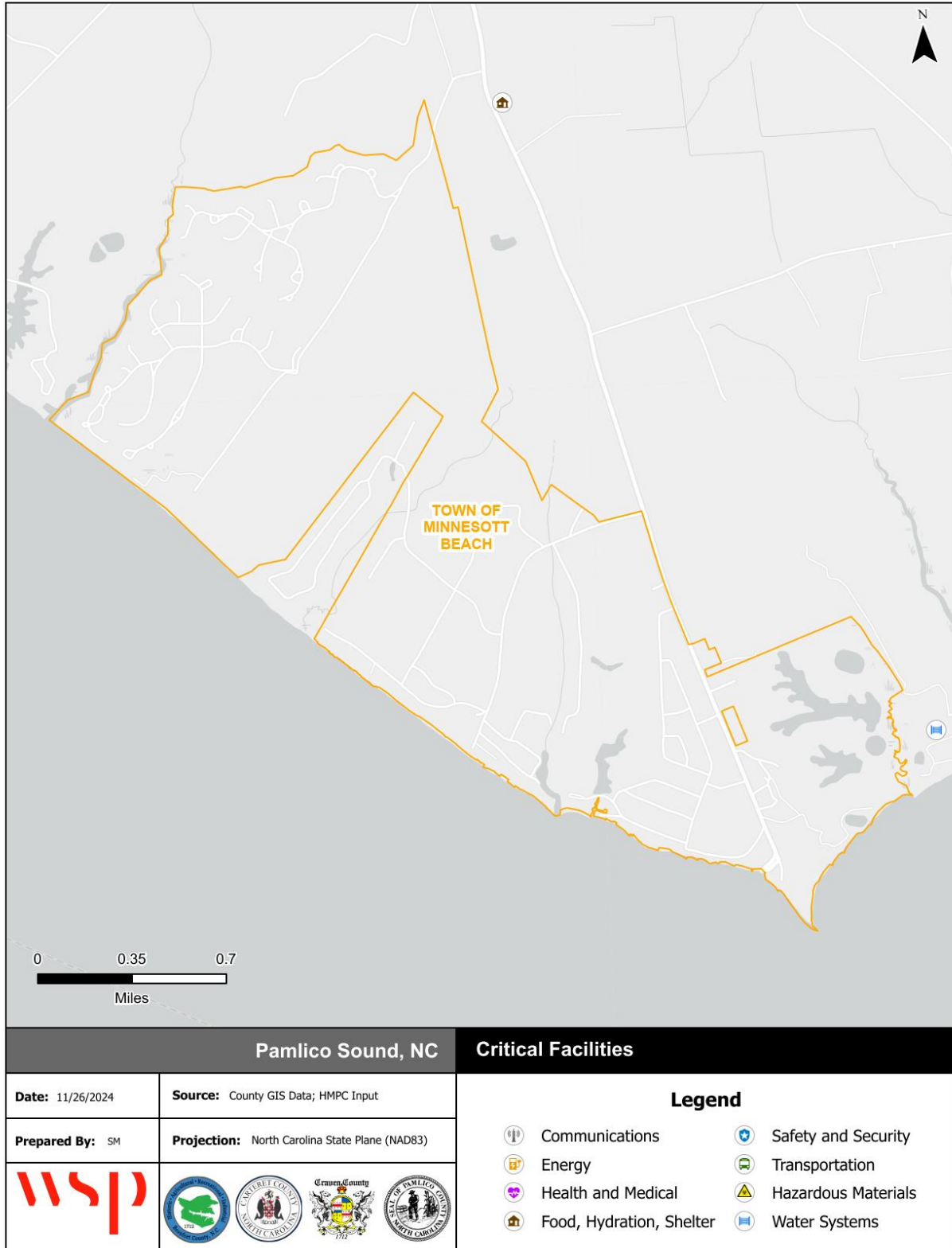
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure D.6 – Critical Facilities, Town of Mesic



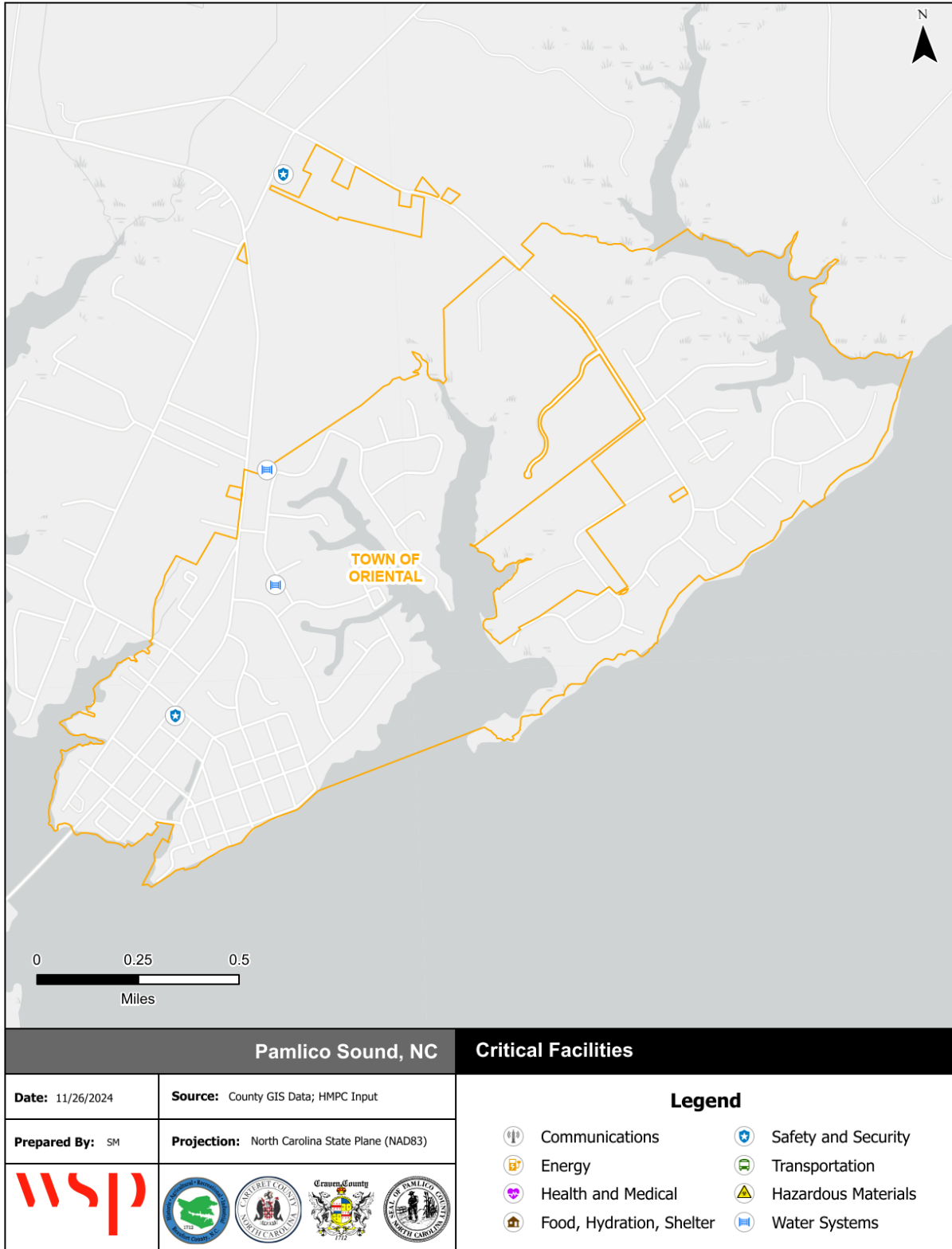
Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure D.7 – Critical Facilities, Town of Minnesott Beach



Source: NCEM IRISK Database, HMPC input, GIS Analysis

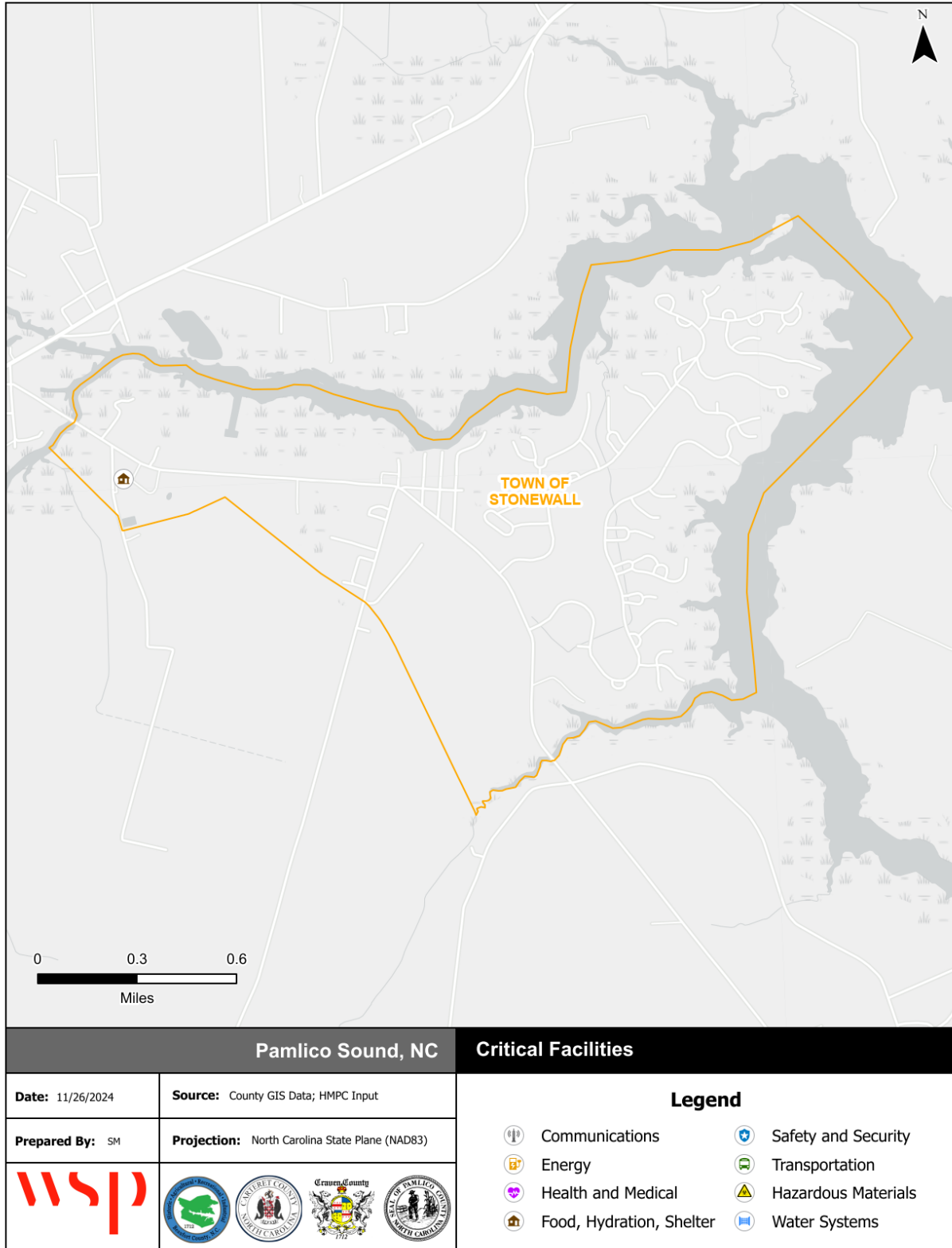
Figure D.8 – Critical Facilities, Town of Oriental



Source: NCEM IRISK Database, HMPC input, GIS Analysis

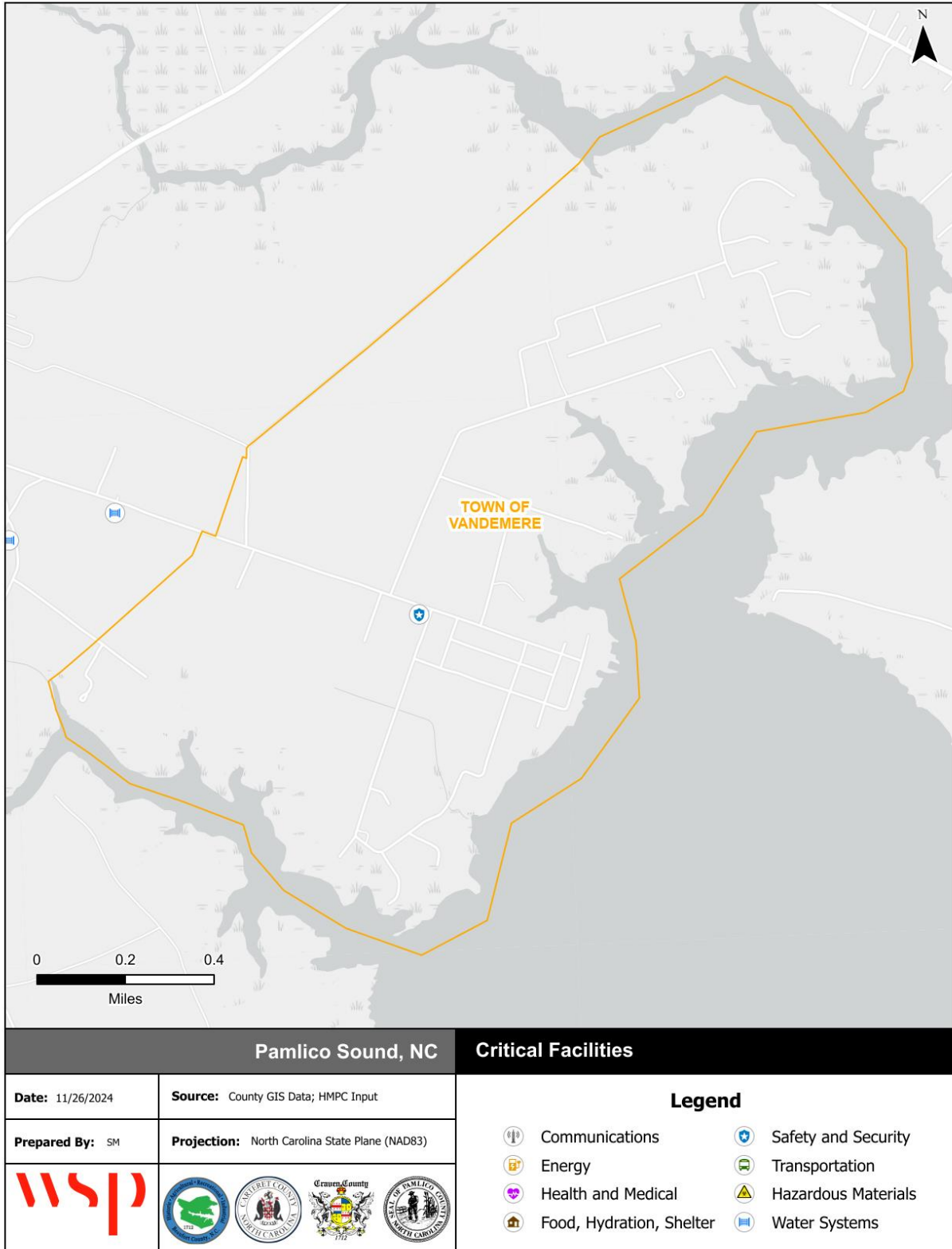


Figure D.9 – Critical Facilities, Town of Stonewall



Source: NCEM IRISK Database, HMPC input, GIS Analysis

Figure D.10 - Critical Facilities, Town of Vandemere



Source: NCEM IRISK Database, HMPC input, GIS Analysis

**Table D.11 – Pamlico County Critical Facilities Inventory**

| FEMA Lifeline                        | Facility Type   | Address                                     | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR!? | Burn Probability | Fire Intensity |
|--------------------------------------|---|---|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| <b>Unincorporated Pamlico County</b> |   |   |                 |            |             |                     |                       |             |                  |                |
| Water Systems                        | Public Water Supply   | NC 306 S At WTP Site                        | \$266,402       | X Unshaded | 0.1         | NA                  | NA                    | Y           | 0                | 5              |
| Water Systems                        | Public Water Supply   | SR 1100 Near Nc 306 South                   | \$2,240         | X Unshaded | 0.1         | NA                  | NA                    | Y           | 6                | 2              |
| Water Systems                        | Public Water Supply   | SR 1005 (Kershaw Rd) WTP Elev Tank On Site  | \$1,777,972     | X Unshaded | 0.1         | NA                  | 3                     | -           | 5                | 5              |
| Water Systems                        | Public Water Supply   | SR 1005(Kershaw Rd) WTP-1500 North of Plant | \$1,777,972     | X Unshaded | 0.1         | NA                  | 3                     | -           | 0                | 4              |
| Water Systems                        | Public Water Supply   | NC 307 @ WTP- Elev Tank On Site             | \$342,750       | X Unshaded | 0.1         | 9                   | 2                     | Y           | 0                | 2              |
| Water Systems                        | Public Water Supply   | NC 304 Near Cash's Corner                   | \$342,750       | X Unshaded | 0.1         | 8                   | 2                     | Y           | 1                | 1              |
| Water Systems                        | Public Water Supply   | NE of Health Center                         | \$352,732       | X Unshaded | 0.1         | NA                  | 3                     | Y           | 2                | 7              |
| Water Systems                        | Public Water Supply   |   | \$466,787       | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 6              |
| Safety & Security                    | Fire Stations - Southeast Pamlico Volunteer Fire Department Incorporated      | 6389 Straight Road                          | \$417,019       | X Shaded   | 0.1         | 9                   | 2                     | -           | 0                | 5              |
| Safety & Security                    | Fire Stations - Reelsboro Fire Department Incorporated                        | 105 Holland Avenue                          | \$164,607       | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 5              |
| Safety & Security                    | Fire Stations - Olympia Volunteer Fire Department                             | 394 Olympia Road                            | \$46,368        | X Unshaded | 0.1         | NA                  | NA                    | Y           | 5                | 0              |
| Safety & Security                    | Fire Stations - Florence-Whortonsville Volunteer Fire Department Incorporated | 5208 Florence Road                          | \$266,136       | X Shaded   | 0.1         | 8                   | 2                     | Y           | 5                | 0              |
| Safety & Security                    | Fire Stations - Goose Creek Island Volunteer Fire Department                  | 5212 Lowland Road                           | \$0             | AE         | 2.9         | 3                   | 1                     | -           | 0                | 5              |
| Safety & Security                    | EMS - Reelsboro Fire Department Incorporated                                  | 105 Holland Avenue                          | \$164,607       | X Unshaded | 0.1         | NA                  | NA                    | -           | 5                | 5              |
| Safety & Security                    | EMS - Florence-Whortonsville Volunteer Fire Department Incorporated           | 5208 Florence Road                          | \$266,136       | X Shaded   | 0.1         | 8                   | 2                     | Y           | 5                | 0              |

**ANNEX D: PAMLICO COUNTY**

| FEMA Lifeline            | Facility Type   | Address                             | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR? | Burn Probability | Fire Intensity |
|--------------------------|---|-------------------------------------|-----------------|------------|-------------|---------------------|-----------------------|------------|------------------|----------------|
| Health & Medical         | Medical Facilities - Pine Haven Home Health Care Services, Inc. |                                     | \$149,090       | X Unshaded | 0.1         | NA                  | NA                    | Y          | 5                | 3              |
| Health & Medical         | Medical Facilities - The Gardens of Pamlico                     |                                     | -               | X Unshaded | 0.1         | NA                  | NA                    | Y          | 5                | 0              |
| Health & Medical         | Medical Facilities - Holland Drive Home                         |                                     | \$132,492       | X Unshaded | 0.1         | NA                  | NA                    | Y          | 5                | 0              |
| Food, Hydration, Shelter | Swine Lagoons   | -                                   | \$55,750        | X Unshaded | 0.1         | NA                  | NA                    | -          | 3                | 5              |
| Food, Hydration, Shelter | Swine Lagoons   | -                                   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | -          | 6                | 0              |
| Food, Hydration, Shelter | Non-Public Schools - Gateway Christian Academy                  | PO Box 116                          | -               | X Unshaded | 0.1         | 10                  | 3                     | Y          | 0                | 0              |
| Food, Hydration, Shelter | Animal Farms - Dunn's Hog Farm                                  | -                                   | \$55,750        | X Unshaded | 0.1         | NA                  | NA                    | -          | 3                | 4              |
| Food, Hydration, Shelter | Animal Farms - Spruill Pig Paradise                             | -                                   | \$0             | X Unshaded | 0.1         | NA                  | 2                     | -          | 6                | 4              |
| <b>Town of Alliance</b>  |   |                                     |                 |            |             |                     |                       |            |                  |                |
| Health & Medical         | Medical Facilities - Continuum Home Care of Pamlico             |                                     | -               | X Unshaded | 0.1         | NA                  | 2                     | Y          | 2                | 0              |
| Health & Medical         | Medical Facilities - Neuse Center for MH/DD/SAS                 |                                     | \$107,686       | X Unshaded | 0.1         | NA                  | 3                     | Y          | 4                | 0              |
| Health & Medical         | Medical Facilities - TASC/CJP-Pamlico                           |                                     | \$0             | X Unshaded | 0.1         | 10                  | 2                     | Y          | 0                | 0              |
| Health & Medical         | Medical Facilities - Britthaven of Pamlico                      |                                     | \$94,836        | X Unshaded | 0.1         | NA                  | 3                     | Y          | 5                | 0              |
| <b>Town of Arapahoe</b>  |   |                                     |                 |            |             |                     |                       |            |                  |                |
| Safety & Security        | Fire Stations - Arapahoe Volunteer Fire Department Incorporated | 8233 State Highway 306 South        | \$53,295        | X Unshaded | 0.1         | NA                  | NA                    | Y          | 5                | 0              |
| Safety & Security        | EMS - Arapahoe Volunteer Fire Department Incorporated           | 8233 State Highway 306 South        | \$53,295        | X Unshaded | 0.1         | NA                  | NA                    | Y          | 5                | 0              |
| Food, Hydration, Shelter | Public Schools - Arapahoe Charter School                        | 9005 NC Hwy 306 S                   | \$86,136        | X Unshaded | 0.1         | NA                  | NA                    | Y          | 0                | 0              |
| <b>Town of Bayboro</b>   |   |                                     |                 |            |             |                     |                       |            |                  |                |
| Water Systems            | Public Water Supply   | Mill Pond Rd Near Prison on SR 1002 | \$114,533       | X Unshaded | 0.1         | NA                  | 2                     | -          | 5                | 0              |

**ANNEX D: PAMLICO COUNTY**

| FEMA Lifeline               | Facility Type   | Address                                   | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIR? | Burn Probability | Fire Intensity |
|-----------------------------|---|---|-----------------|------------|-------------|---------------------|-----------------------|------------|------------------|----------------|
| Water Systems               | Public Water Supply   | Mill Pond Rd<br>Near Prison on<br>SR 1002 | \$1,288         | X Unshaded | 0.1         | NA                  | 2                     | Y          | 5                | 5              |
| Safety & Security           | Law Enforcement - Pamlico<br>County Sheriffs Department   | 200 Main Street                           | \$3,021,369     | X Unshaded | 0.1         | NA                  | 2                     | Y          | 5                | 0              |
| Safety & Security           | Fire Stations - Triangle<br>Volunteer Fire Department<br>Incorporated   | 202 North 4th<br>Street                   | \$111,594       | X Unshaded | 0.1         | 10                  | 2                     | -          | 0                | 4              |
| Safety & Security           | EMS - Pamlico Rescue Squad  | Main Street                               | \$412,317       | X Unshaded | 0.1         | 10                  | 2                     | -          | 5                | 2              |
| Safety & Security           | Emergency Operation Center<br>- Pamlico County Emergency<br>Management Agency                                 | 200 Main Street                           | \$3,452,573     | X Unshaded | 0.1         | 10                  | 2                     | Y          | 5                | 0              |
| Safety & Security           | Emergency Operation Center<br>- Pamlico County EOC-<br>Alternate  | 202 Main Street                           | \$3,021,369     | X Unshaded | 0.1         | NA                  | 2                     | Y          | 5                | 0              |
| Health & Medical            | Medical Facilities - Pamlico<br>County Department of Social<br>Services                                       |   | \$312,390       | X Unshaded | 0.1         | NA                  | 2                     | Y          | 5                | 0              |
| Food, Hydration,<br>Shelter | Public Schools - Fred A<br>Anderson Elementary  | 515 Anderson<br>Drive                     | \$22,050,231    | X Unshaded | 0.1         | NA                  | 2                     | -          | 5                | 6              |
| Food, Hydration,<br>Shelter | Public Schools - Pamlico<br>County High   | 601 Main Street                           | \$22,050,231    | X Unshaded | 0.1         | NA                  | 2                     | Y          | 5                | 0              |
| Food, Hydration,<br>Shelter | Public Schools - Pamlico<br>County Primary  | 323 Neals Creek<br>Road                   | \$127,375       | X Unshaded | 0.1         | NA                  | 2                     | -          | 0                | 0              |
| <b>Town of Grantsboro</b>   |   |   |                 |            |             |                     |                       |            |                  |                |
| Safety & Security           | Fire Stations - Grantsboro-<br>Silverhill Volunteer Fire<br>Department and Emergency<br>Services Incorporated | 35 State<br>Highway 306                   | \$5,906         | X Unshaded | 0.1         | NA                  | NA                    | -          | 5                | 6              |
| Health & Medical            | Medical Facilities - In Home<br>Aide Care, Inc.   |   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y          | 5                | 0              |
| Health & Medical            | Medical Facilities - Hospice<br>of Pamlico County, Inc.   |   | \$0             | X Unshaded | 0.1         | NA                  | 3                     | Y          | 5                | 0              |
| Health & Medical            | Medical Facilities - Pamlico<br>County Group Home   |   | \$614           | X Unshaded | 0.1         | NA                  | NA                    | Y          | 5                | 0              |
| Food, Hydration,<br>Shelter | Non-Public Schools -<br>Pamlico Christian Academy   | P.O. Box 68                               | -               | X Unshaded | 0.1         | NA                  | NA                    | Y          | 5                | 0              |

**ANNEX D: PAMLICO COUNTY**

| FEMA Lifeline            | Facility Type  | Address  | Structure Value | Flood Zone | Flood Depth | Min. Sea Level Rise | Min. Storm Surge Cat. | High WUIRI? | Burn Probability | Fire Intensity |
|--------------------------|--|--|-----------------|------------|-------------|---------------------|-----------------------|-------------|------------------|----------------|
| <b>Town of Oriental</b>  |  |  |                 |            |             |                     |                       |             |                  |                |
| Water Systems            | Public Water Supply                                    | WTP at the Intersection Gilgo St @ Windward Dr WTP | \$176,168       | X Unshaded | 0.1         | 9                   | 2                     | Y           | 5                | 6              |
| Water Systems            | Public Water Supply                                    | Gilgo St @ Woman's Club Bldg                       | \$1,106         | X Unshaded | 0.1         | 10                  | 2                     | Y           | 0                | 7              |
| Safety & Security        | Law Enforcement - Oriental Police Department           | 509 Church Street                                  | \$209,027       | X Unshaded | 0.1         | 9                   | 2                     | Y           | 0                | 0              |
| <b>Town of Stonewall</b> |  |  |                 |            |             |                     |                       |             |                  |                |
| Food, Hydration, Shelter | Public Schools - Pamlico County Middle                 | 15526 NC Hwy 55                                    | \$4,352,375     | X Shaded   | 0.1         | 8                   | 2                     | -           | 0                | 0              |
| <b>Town of Vandemere</b> |  |  |                 |            |             |                     |                       |             |                  |                |
| Safety & Security        | Fire Stations - Vandemere Fire Department Incorporated | 1042 Pennsylvania Avenue                           | \$220,270       | X Shaded   | 0.1         | 8                   | 2                     | Y           | 0                | 3              |

## D.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level within Pamlico County. The hazards included in this section are flood and wildfire.

### D.2.1 FLOODING

Table D.12 details the acreage of Pamlico County’s total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at 94.3 percent, the Town of Mesic has the largest portion of its land area within the mapped 1%-annual-chance floodplain. Over 60 percent of the total land area in Stonewall and Vandemere, falls within the Special Flood Hazard Area. Arapahoe falls entirely outside the SFHA. Overall, nearly 41 percent of the county’s total area falls within the SFHA.

**Table D.12 - Flood Zone Acreage by Jurisdiction, Pamlico County**

| Flood Zone                     | Acreage        | Percent of Total (%) |
|--------------------------------|----------------|----------------------|
| <b>Town of Alliance</b>        |                |                      |
| Zone AE                        | 259.6          | 20.7                 |
| Zone X (500-year)              | 111.7          | 8.9                  |
| Zone X Unshaded                | 882.7          | 70.4                 |
| <b>Total</b>                   | <b>1,254</b>   | --                   |
| <b>Town of Arapahoe</b>        |                |                      |
| Zone X Unshaded                | 1,768.8        | 100.00               |
| <b>Total</b>                   | <b>1,768.8</b> | --                   |
| <b>Town of Bayboro</b>         |                |                      |
| Zone AE                        | 431.7          | 38.0                 |
| Zone X (500-year)              | 142.2          | 12.5                 |
| Zone X Unshaded                | 563.6          | 49.5                 |
| <b>Total</b>                   | <b>1,138</b>   | --                   |
| <b>Town of Grantsboro</b>      |                |                      |
| Zone AE                        | 103.2          | 4.4                  |
| Zone X (500-Year)              | 21.0           | 0.9                  |
| Zone X (unshaded)              | 2,241.1        | 94.7                 |
| <b>Total</b>                   | <b>2,365</b>   | --                   |
| <b>Town of Mesic</b>           |                |                      |
| Zone AE                        | 783.4          | 94.3                 |
| Zone X (500-Year)              | 47.1           | 5.7                  |
| <b>Total</b>                   | <b>831</b>     | --                   |
| <b>Town of Minnesott Beach</b> |                |                      |
| Zone AE                        | 158.0          | 7.0                  |
| Zone AO                        | 2.2            | 0.1                  |
| Zone VE                        | 21.0           | 0.9                  |
| Zone X (500-year)              | 2.8            | 0.1                  |
| Zone X (unshaded)              | 2,076.2        | 91.9                 |
| <b>Total</b>                   | <b>2,260</b>   | --                   |

| Flood Zone                           | Acreage        | Percent of Total (%) |
|--------------------------------------|----------------|----------------------|
| <b>Town of Oriental</b>              |                |                      |
| Zone AE                              | 331.0          | 32.7                 |
| Zone VE                              | 63.3           | 6.2                  |
| Zone X (500-year)                    | 406.8          | 40.2                 |
| Zone X (unshaded)                    | 211.8          | 20.9                 |
| <b>Total</b>                         | <b>1,013</b>   | <b>--</b>            |
| <b>Town of Stonewall</b>             |                |                      |
| Zone AE                              | 780.2          | 61.0                 |
| Zone X (500-year)                    | 147.1          | 11.5                 |
| Zone X (unshaded)                    | 351.6          | 27.5                 |
| <b>Total</b>                         | <b>1,279</b>   | <b>--</b>            |
| <b>Town of Vandemere</b>             |                |                      |
| Zone AE                              | 912.3          | 78.9                 |
| Zone VE                              | 74.0           | 6.4                  |
| Zone X (500-Year)                    | 155.1          | 13.4                 |
| Zone X (unshaded)                    | 14.9           | 1.3                  |
| <b>Total</b>                         | <b>1,156</b>   |                      |
| <b>Unincorporated Pamlico County</b> |                |                      |
| Zone AE                              | 95,157.2       | 27.5                 |
| Zone AO                              | 28.0           | 0.008                |
| Zone VE                              | 14,029.1       | 4.1                  |
| Zone X (500-Year)                    | 15,200.9       | 4.4                  |
| Zone X (unshaded)                    | 113,007.3      | 32.7                 |
| Open Water                           | 108,391.8      | 31.3                 |
| <b>Total</b>                         | <b>345,814</b> |                      |

Source: FEMA Effective DFIRM

Figure D.11 through Figure D.20 reflect the effective mapped flood hazard zones for all jurisdictions with land in the Special Flood Hazard Area in Pamlico County, and Figure D.21 through Figure D.30 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table D.13 provides building counts and values for critical facilities by flood zone in Pamlico County and incorporated jurisdictions.

**Table D.13 – Critical Facilities Exposed to Flooding, Pamlico County**

| Flood Zone              | Critical Facility Count | Structure Value     |
|-------------------------|-------------------------|---------------------|
| <b>Town of Alliance</b> |                         |                     |
| Zone X (unshaded)       | 4                       | \$202522            |
| <b>Total</b>            | <b>4</b>                | <b>\$202522</b>     |
| <b>Town of Arapahoe</b> |                         |                     |
| Zone X (unshaded)       | 3                       | \$192,726           |
| <b>Total</b>            | <b>3</b>                | <b>\$192,726</b>    |
| <b>Town of Bayboro</b>  |                         |                     |
| Zone X (unshaded)       | 11                      | \$54,675,270        |
| <b>Total</b>            | <b>11</b>               | <b>\$54,675,270</b> |



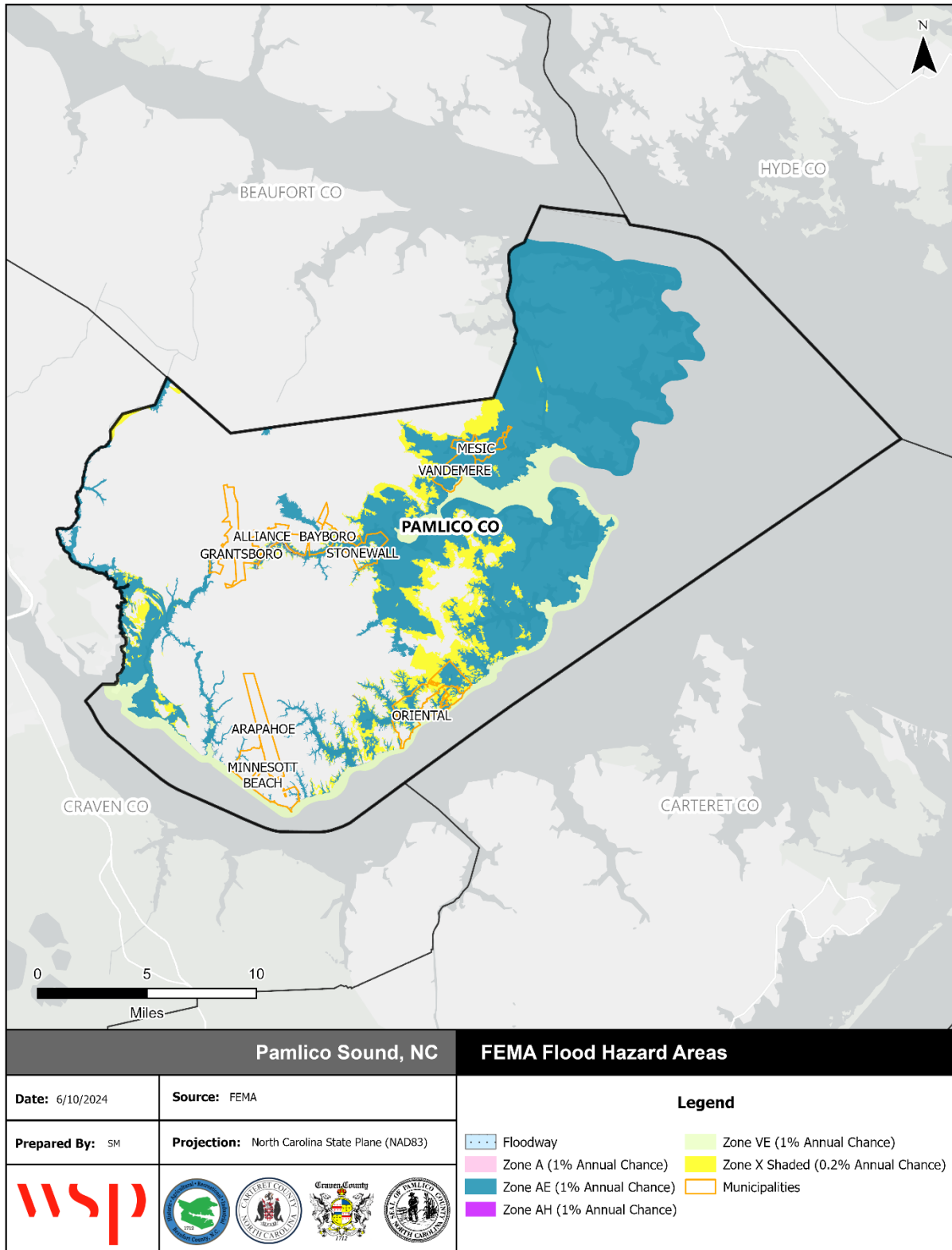
**ANNEX D: PAMLICO COUNTY**

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| <b>Flood Zone</b>                    | <b>Critical Facility Count</b> | <b>Structure Value</b> |
|--------------------------------------|--------------------------------|------------------------|
| <b>Town of Grantsboro</b>            |                                |                        |
| Zone X (unshaded)                    | 5                              | \$6,520                |
| <b>Total</b>                         | <b>5</b>                       | <b>\$6,520</b>         |
| <b>Town of Oriental</b>              |                                |                        |
| Zone X (unshaded)                    | 3                              | \$386,301              |
| <b>Total</b>                         | <b>3</b>                       | <b>\$386,301</b>       |
| <b>Town of Stonewall</b>             |                                |                        |
| Zone X (500-year)                    | 1                              | \$4,352,375            |
| <b>Total</b>                         | <b>1</b>                       | <b>\$4,352,375</b>     |
| <b>Town of Vandermere</b>            |                                |                        |
| Zone X (500-year)                    | 1                              | \$220,270              |
| <b>Total</b>                         | <b>1</b>                       | <b>\$220,270</b>       |
| <b>Unincorporated Pamlico County</b> |                                |                        |
| Zone AE                              | 1                              | \$0                    |
| Zone X (500-year)                    | 3                              | \$949,291              |
| Zone X (unshaded)                    | 19                             | \$6,098,269            |
| <b>Total</b>                         | <b>23</b>                      | <b>\$7,047,560</b>     |

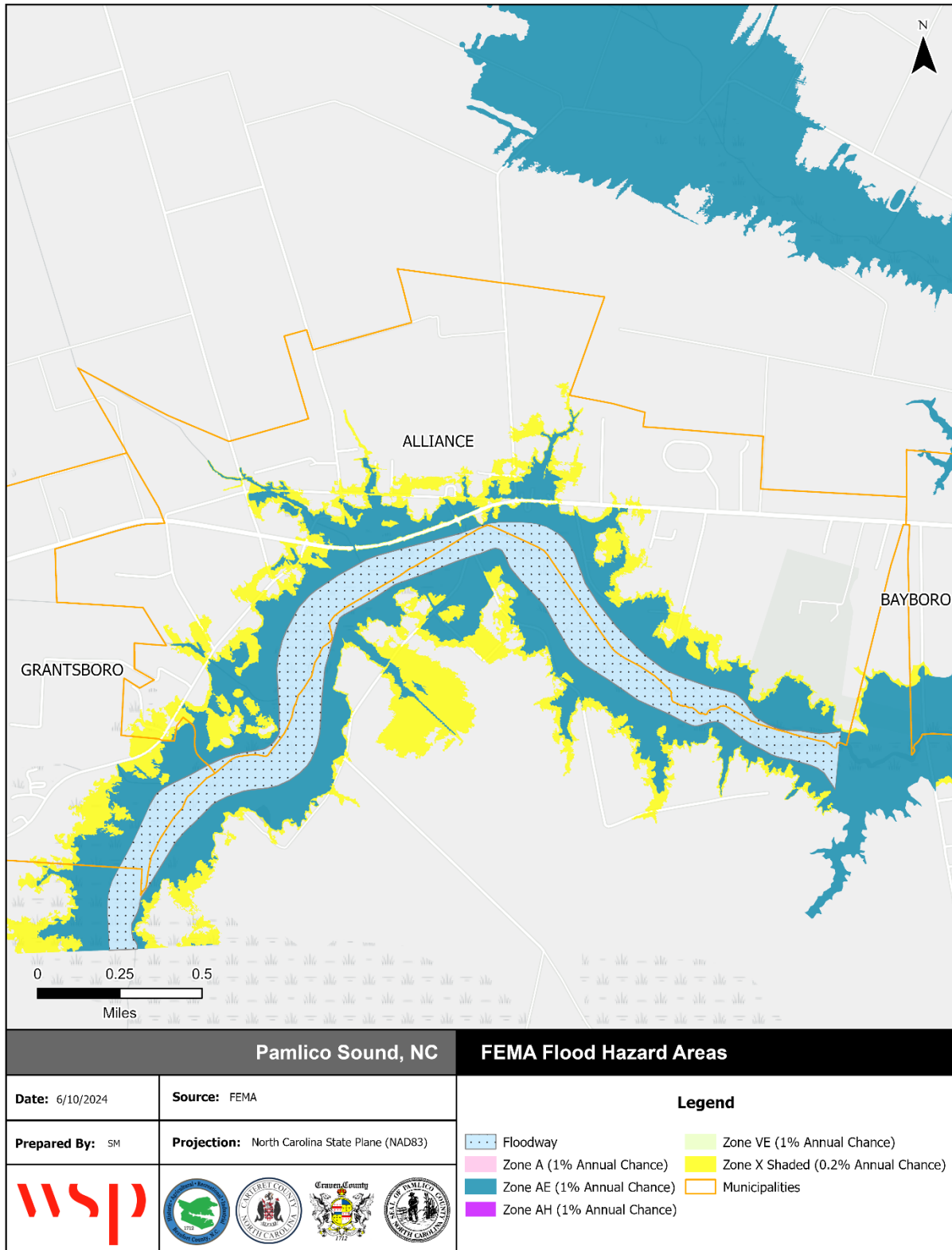
Source: FEMA Effective FIRM

Figure D.11 - FEMA Flood Hazard Areas, Unincorporated Pamlico County



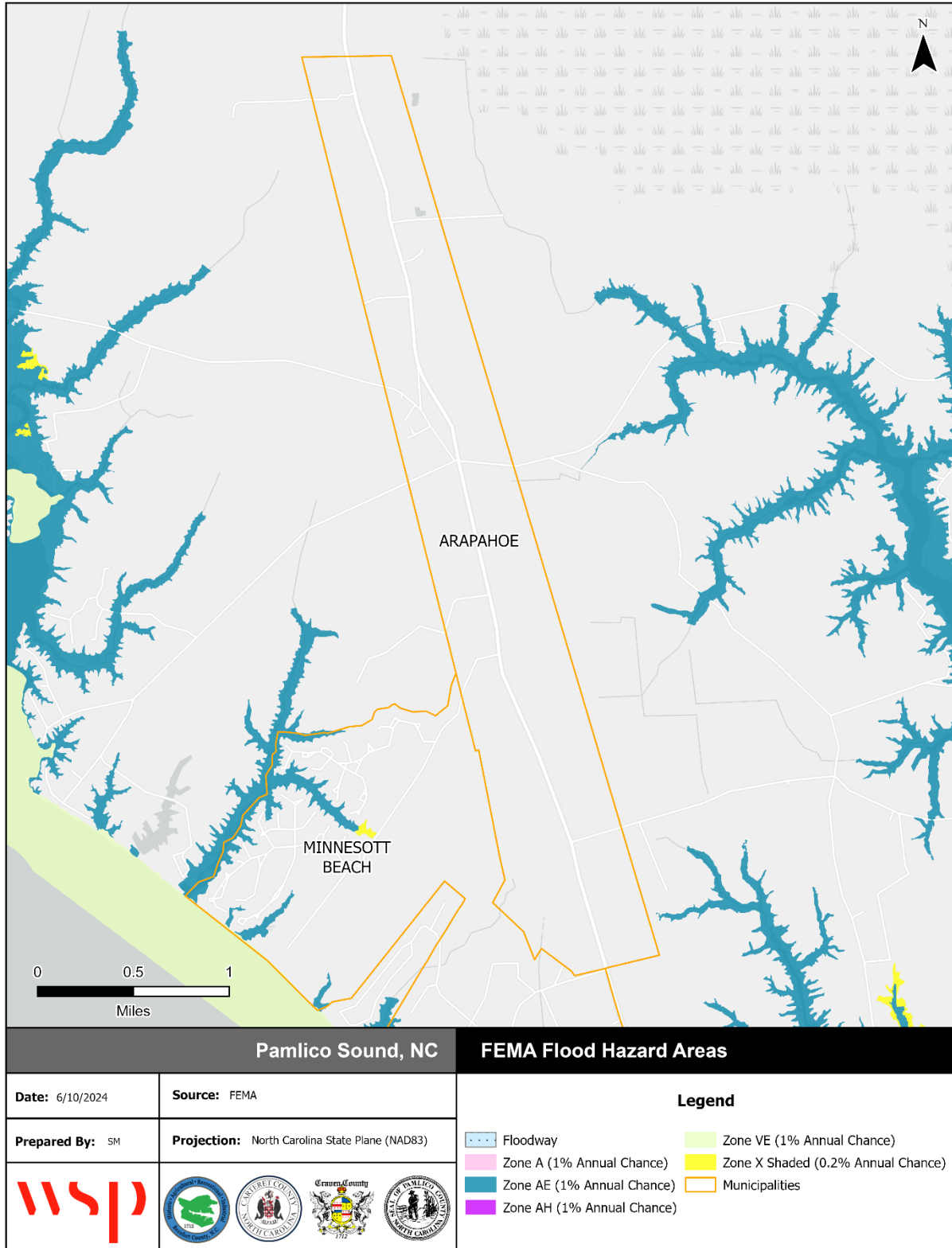
Source: FEMA Effective DFIRM

Figure D.12 - FEMA Flood Hazard Areas, Town of Alliance



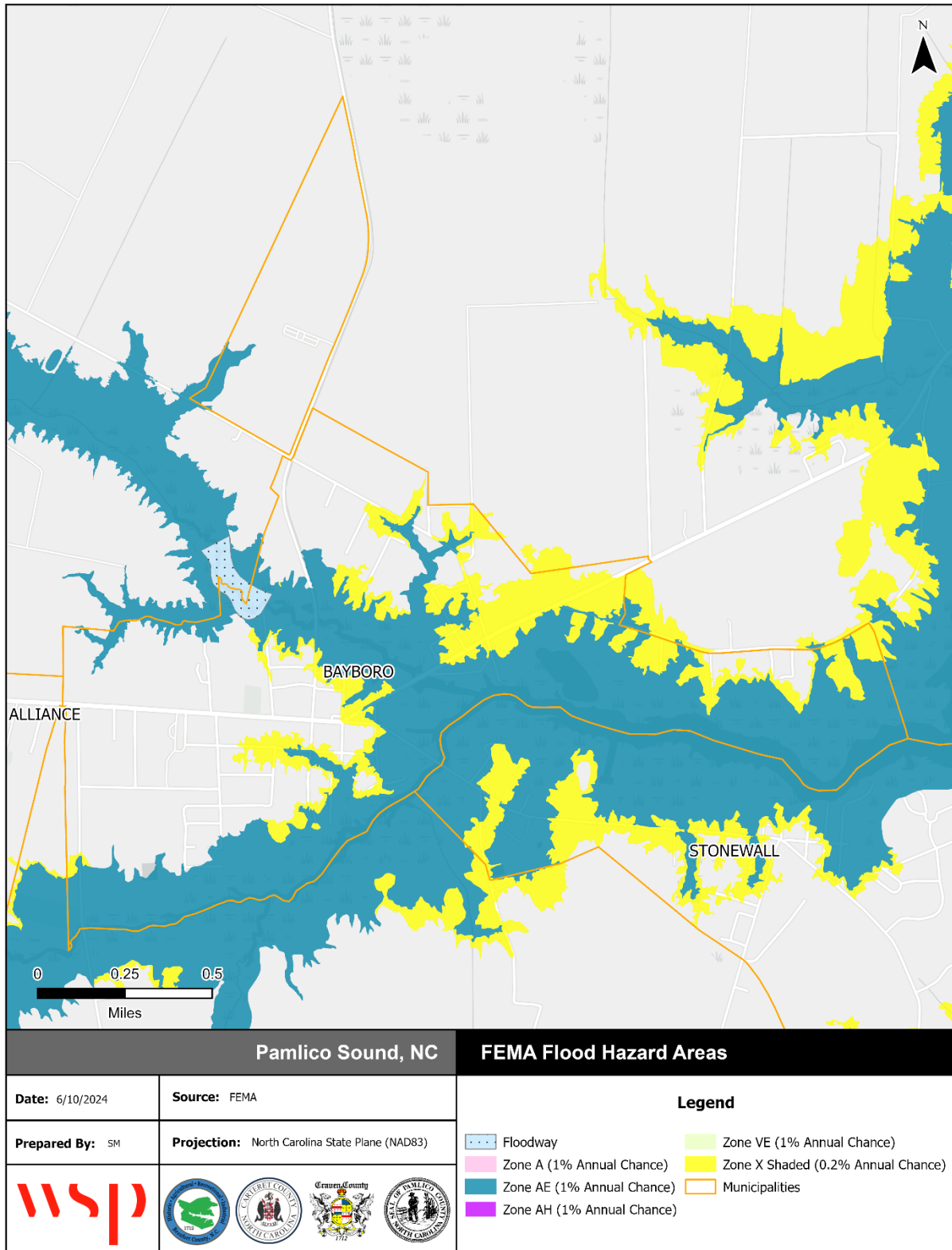
Source: FEMA Effective DFIRM

Figure D.13 - FEMA Flood Hazard Area, Town of Arapahoe



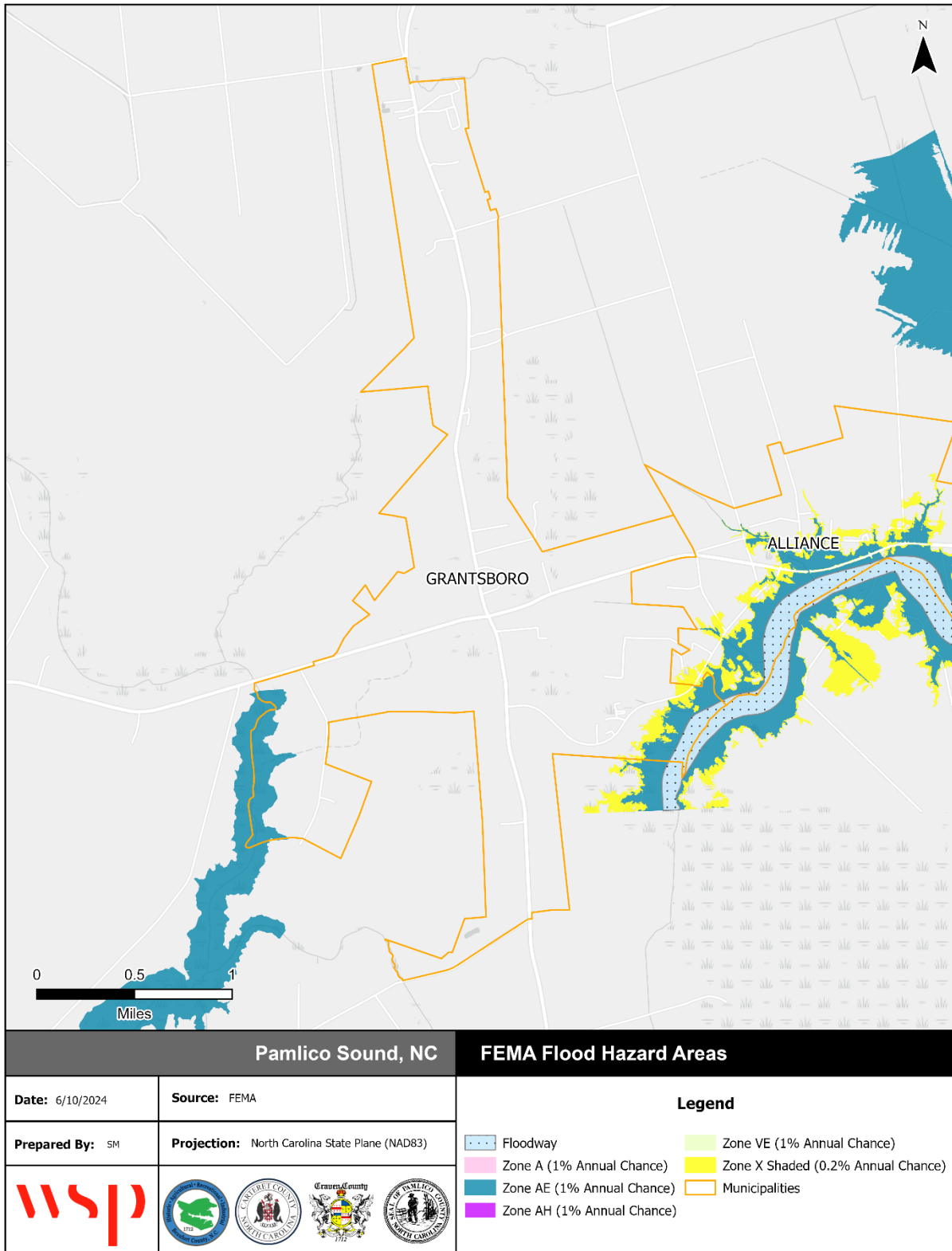
Source: FEMA Effective FIRM

Figure D.14 – FEMA Flood Hazard Areas, Town of Bayboro



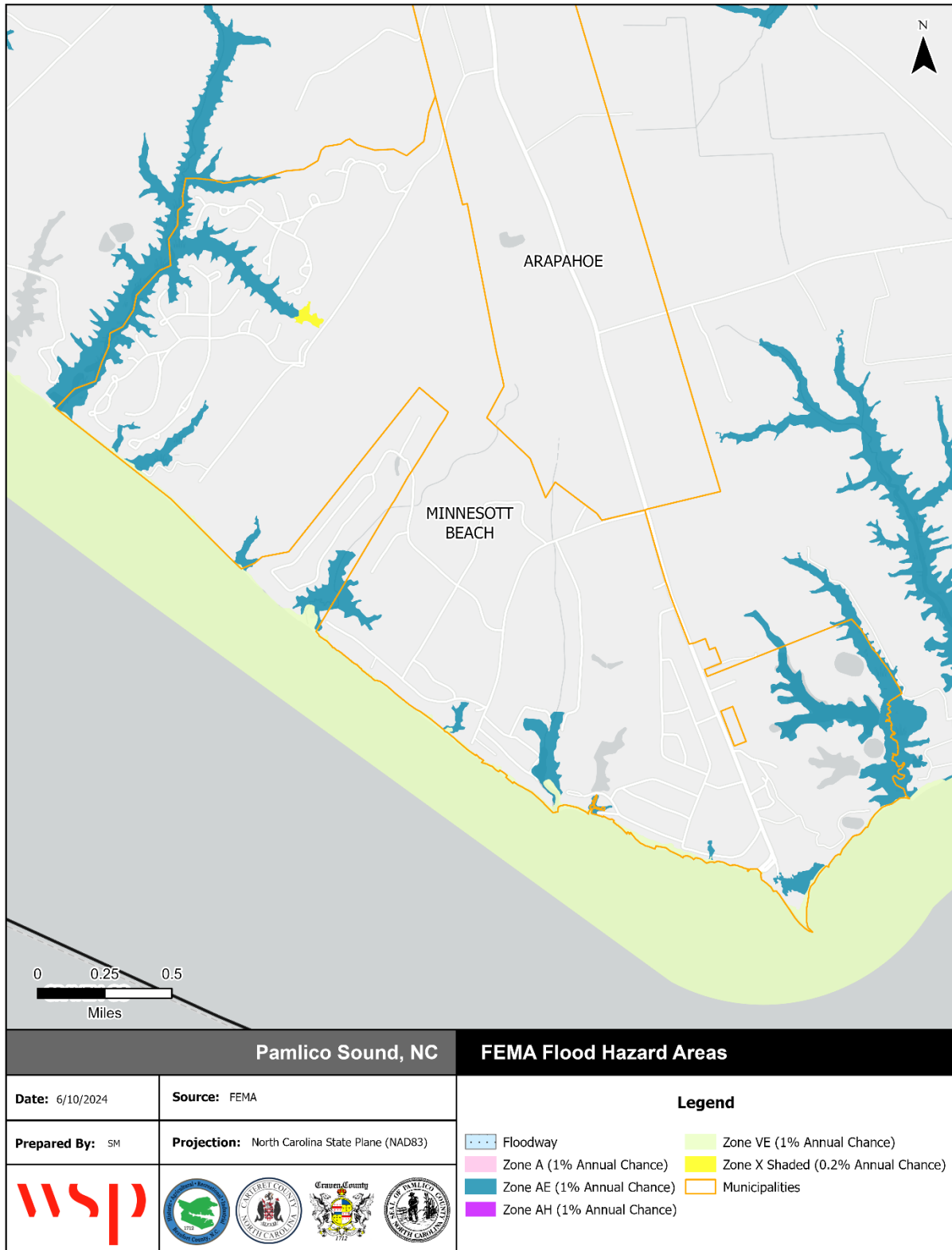
Source: FEMA Effective DFIRM

Figure D.15 – FEMA Flood Hazard Areas, Town of Grantsboro



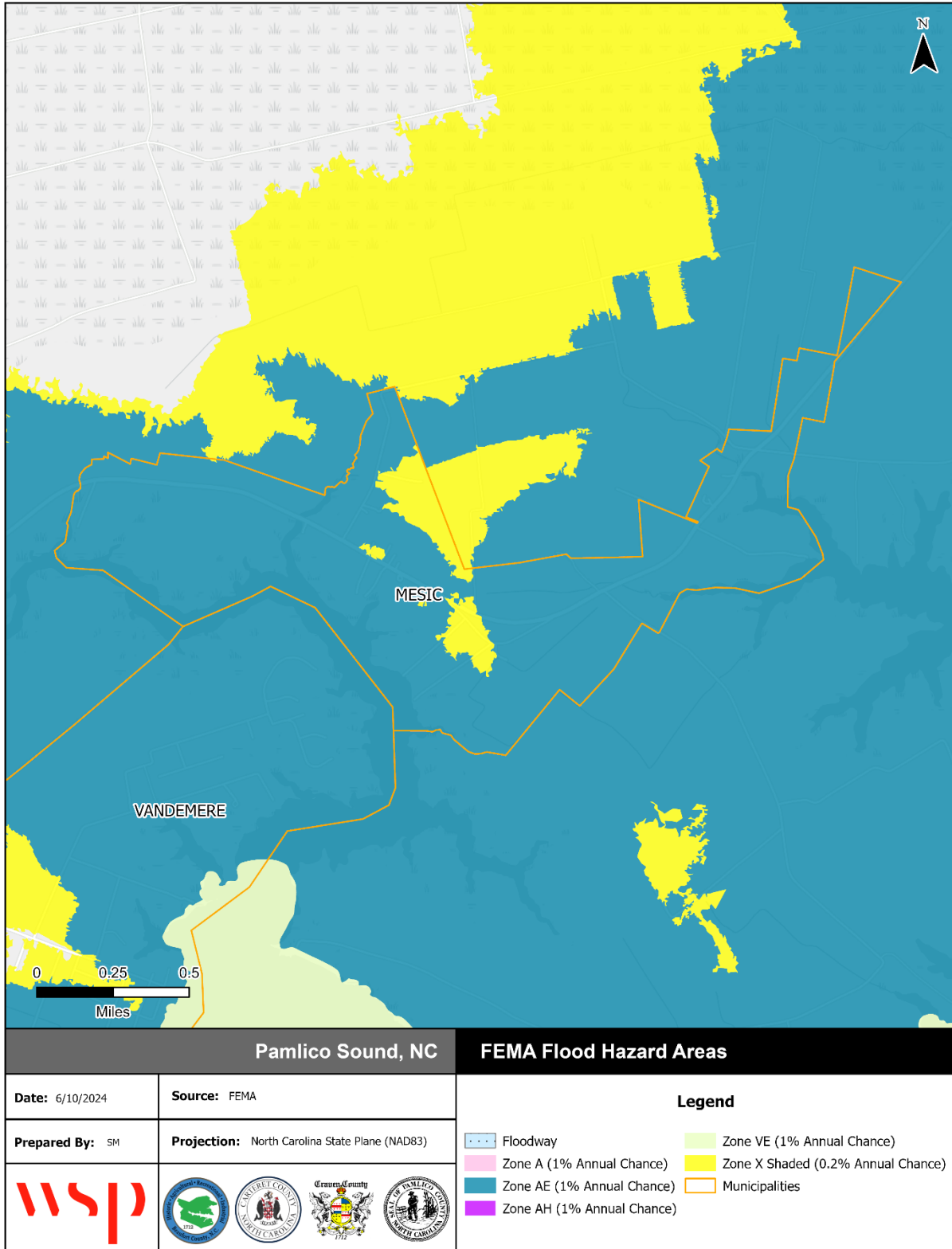
Source: FEMA Effective DFIRM

Figure D.16 – FEMA Flood Hazard Areas, Town of Minnesott Beach



Source: FEMA Effective DFIRM

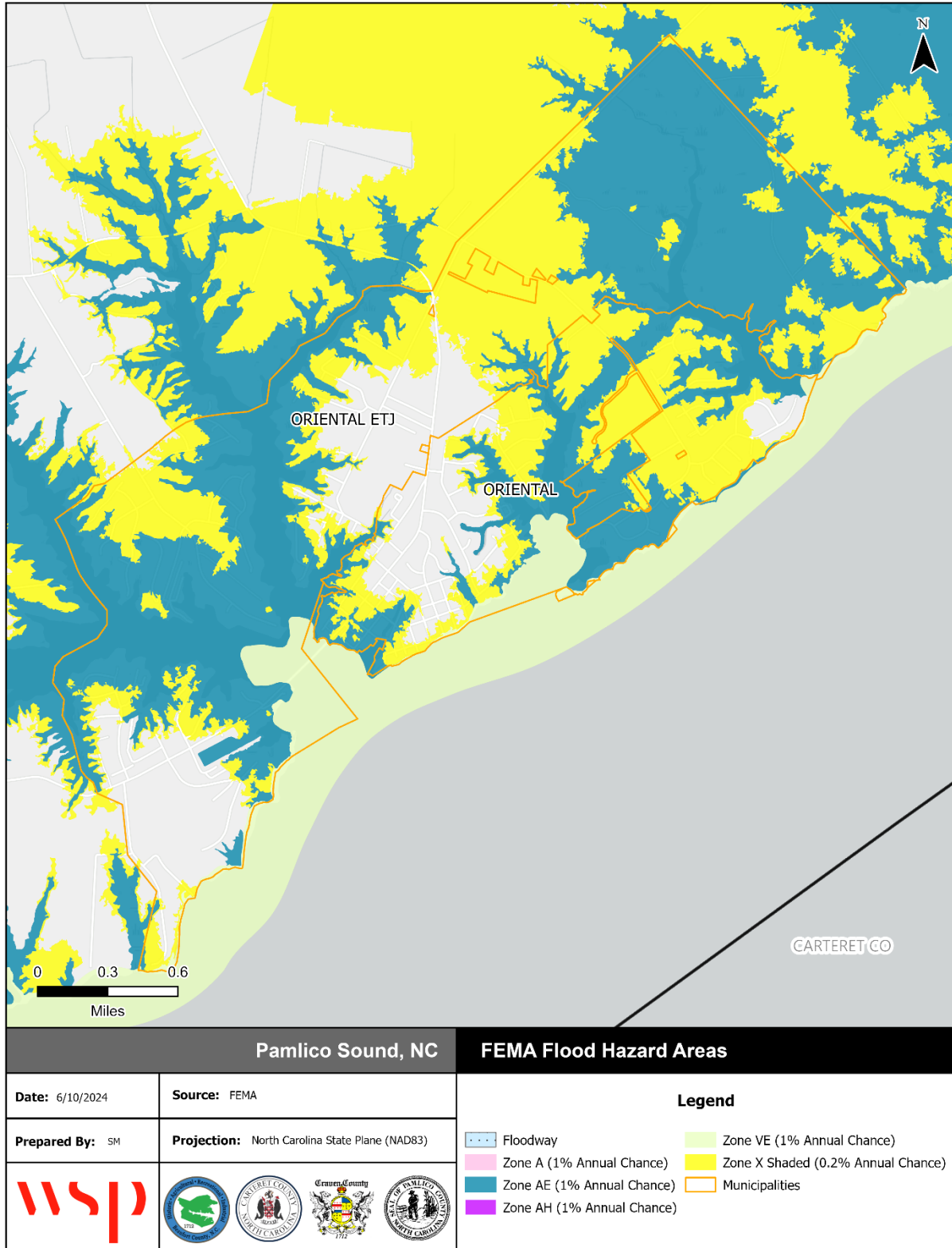
Figure D.17 - FEMA Flood Hazard Areas, Town of Mesic



Source: FEMA Effective DFIRM

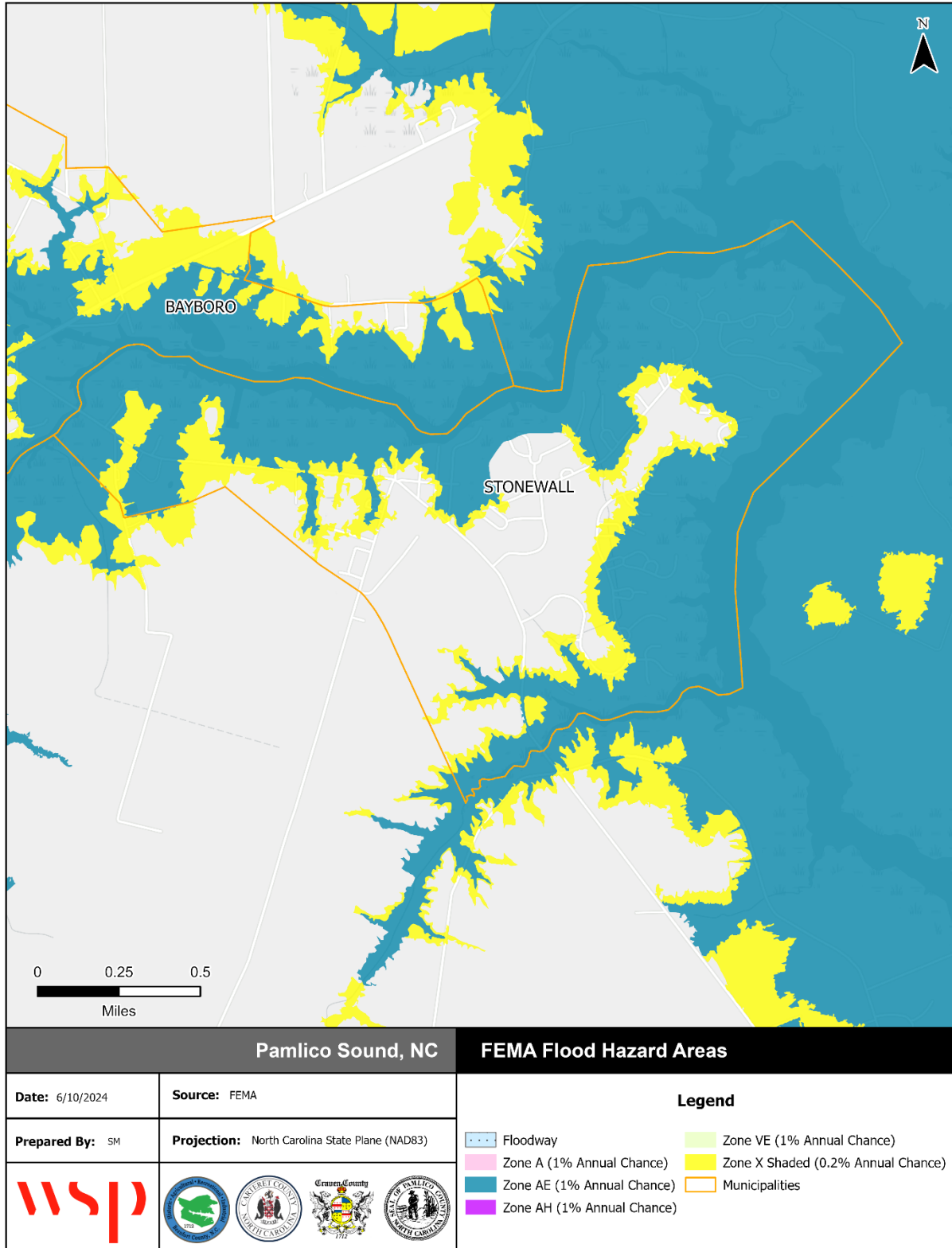


Figure D.18 – FEMA Flood Hazard Areas, Town of Oriental



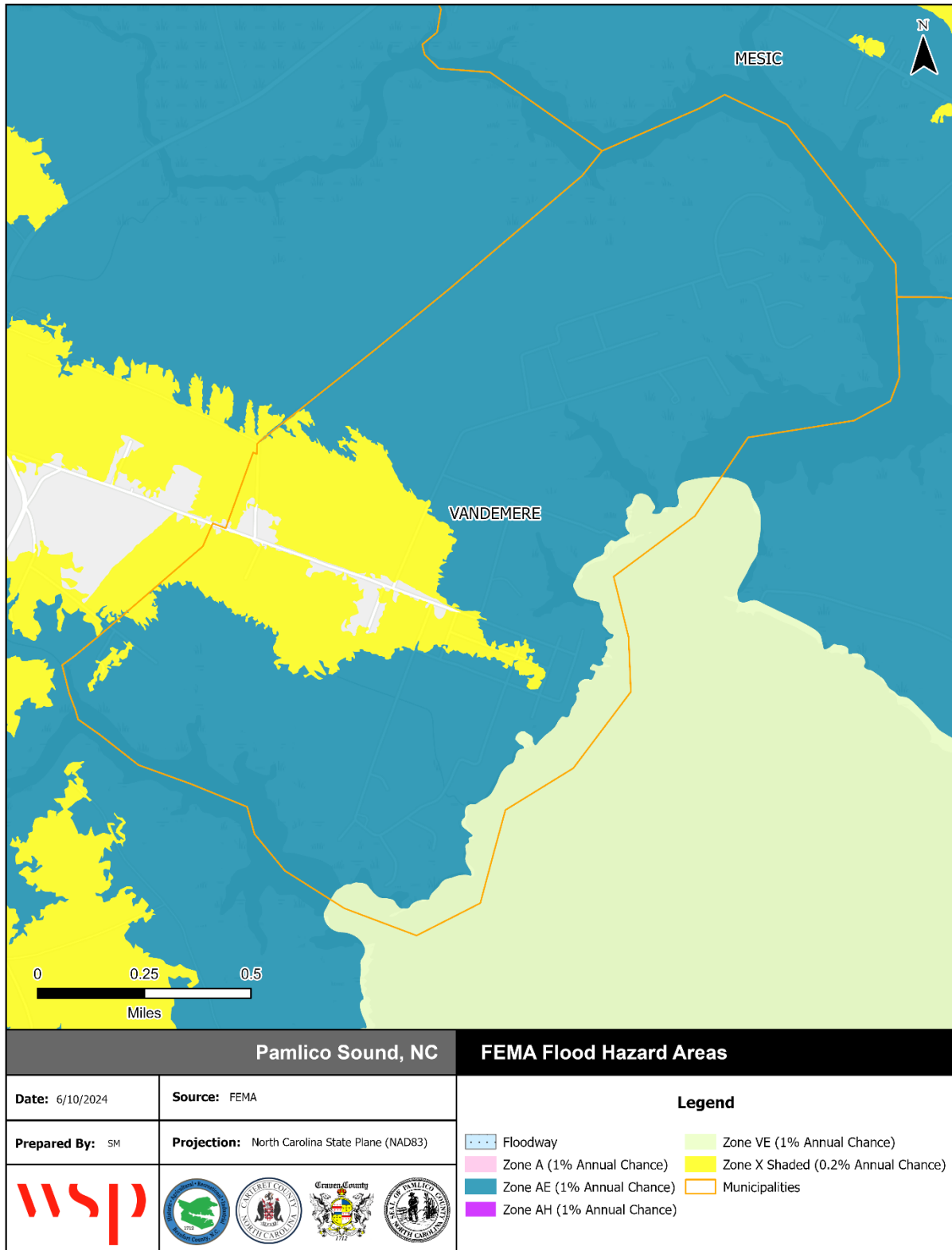
Source: FEMA Effective DFIRM

Figure D.19 – FEMA Flood Hazard Areas, Town of Stonewall



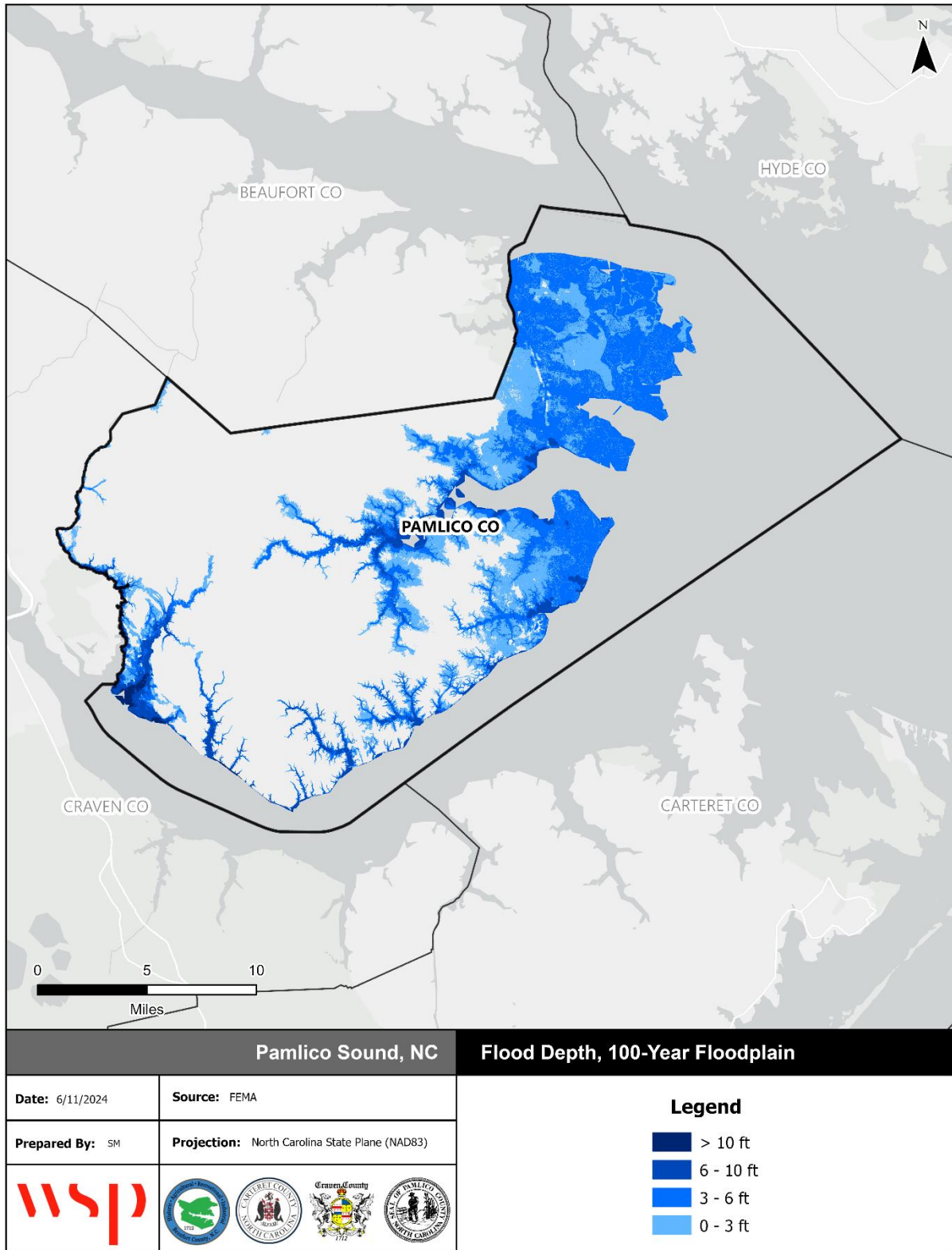
Source: FEMA Effective DFIRM

Figure D.20 - FEMA Flood Hazard Areas, Town of Vandemere



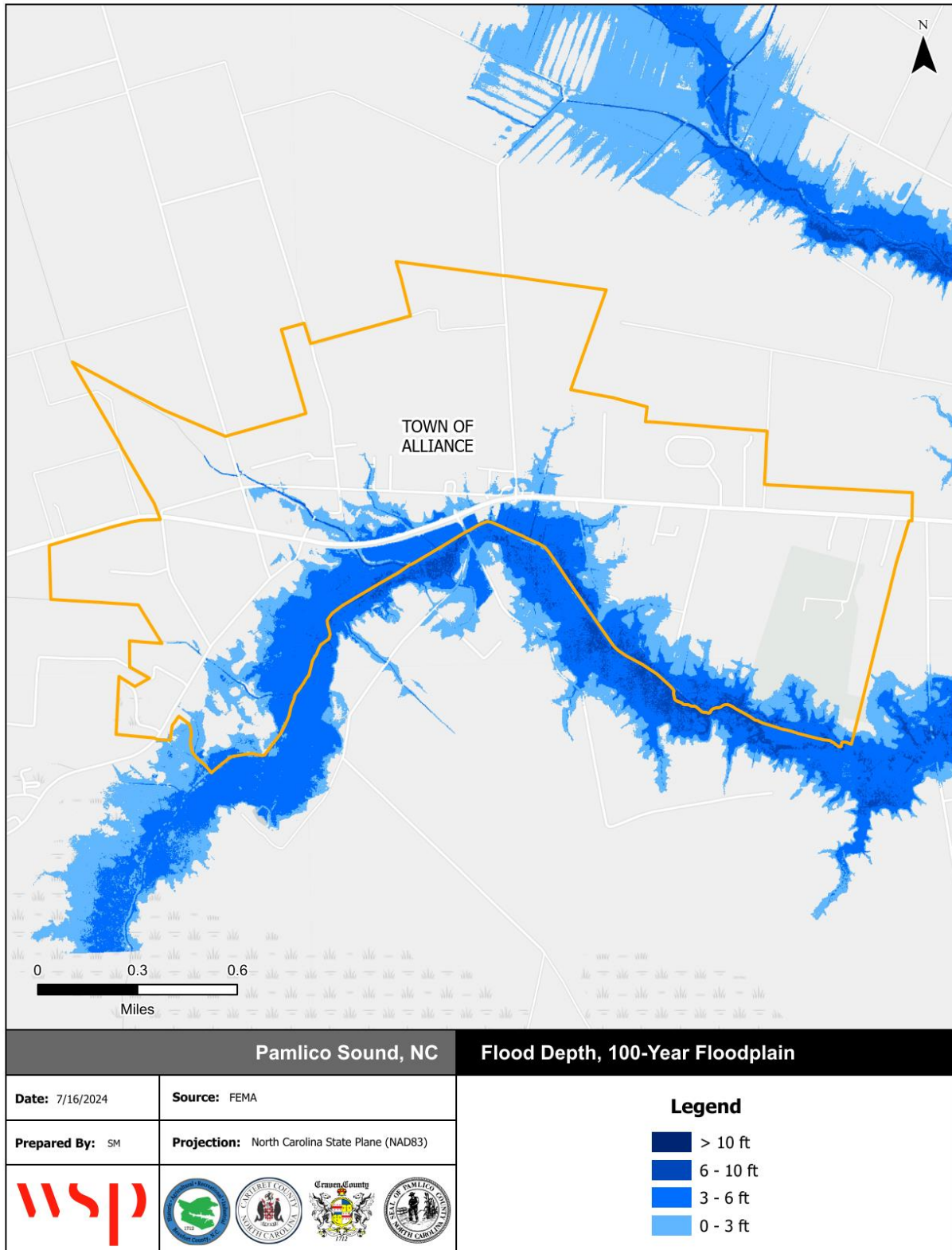
Source: FEMA Effective DFIRM

Figure D.21 – Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Pamlico County



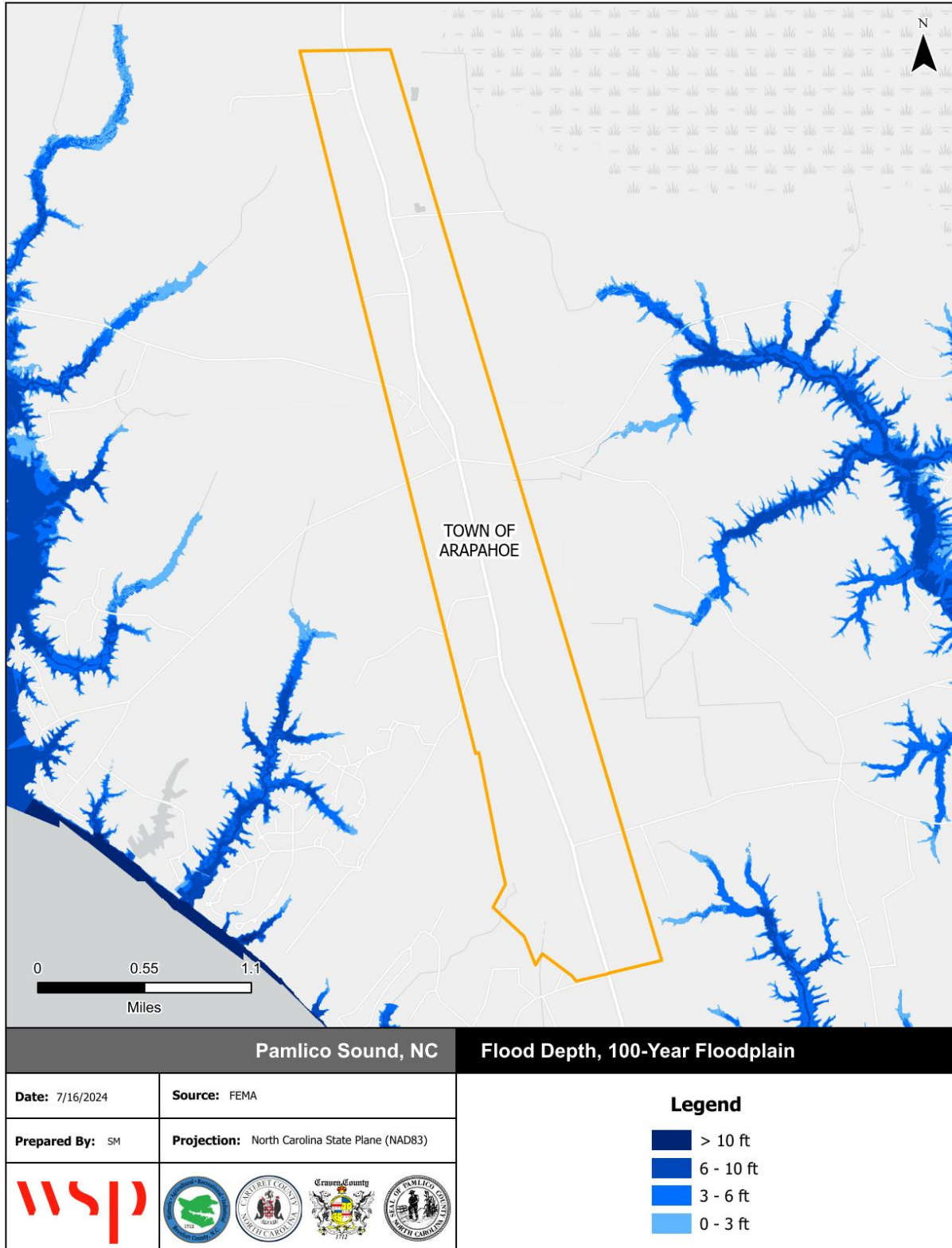
Source: FEMA Effective DFIRM

Figure D.22 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Alliance



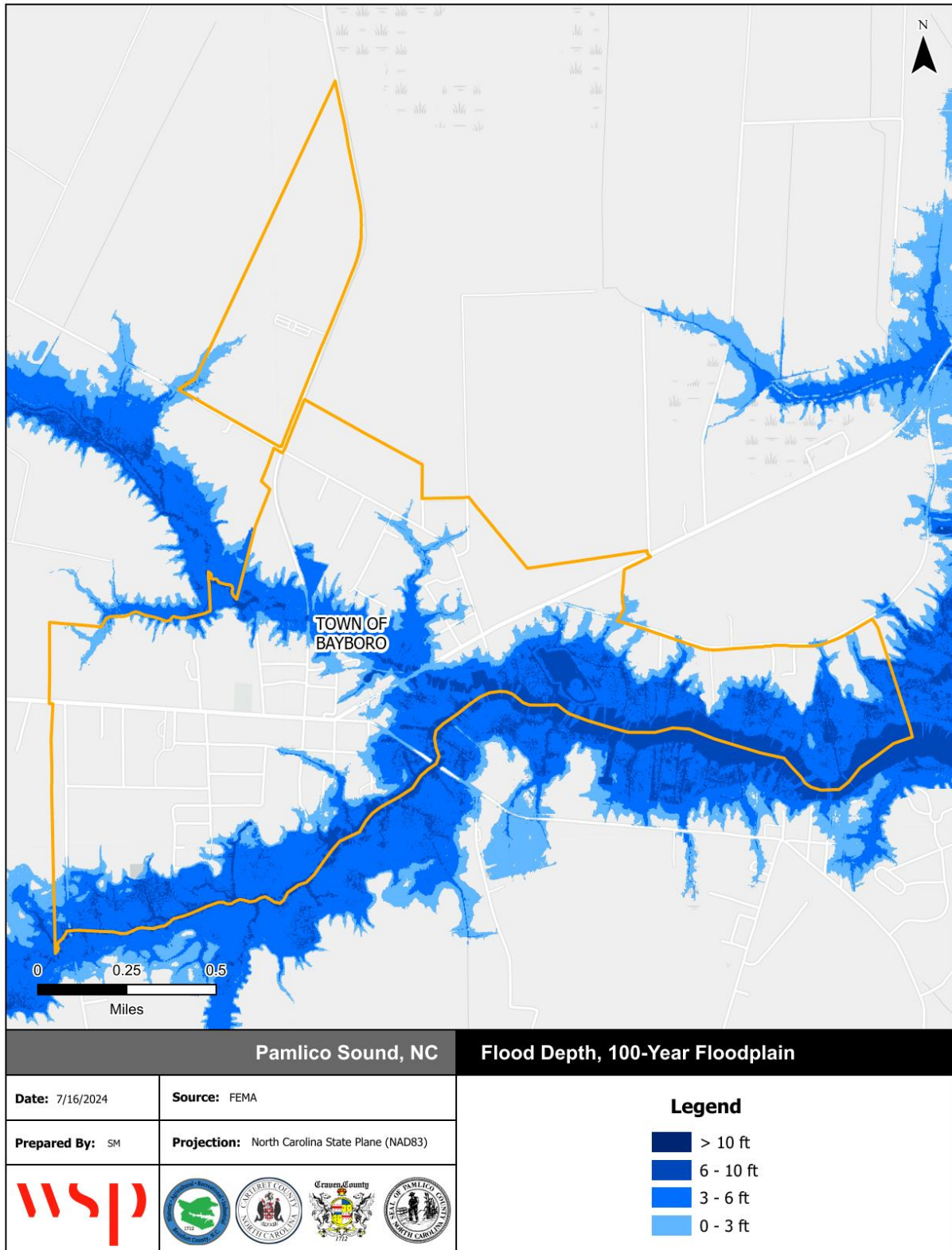
Source: FEMA Effective DFIRM

Figure D.23 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Arapahoe



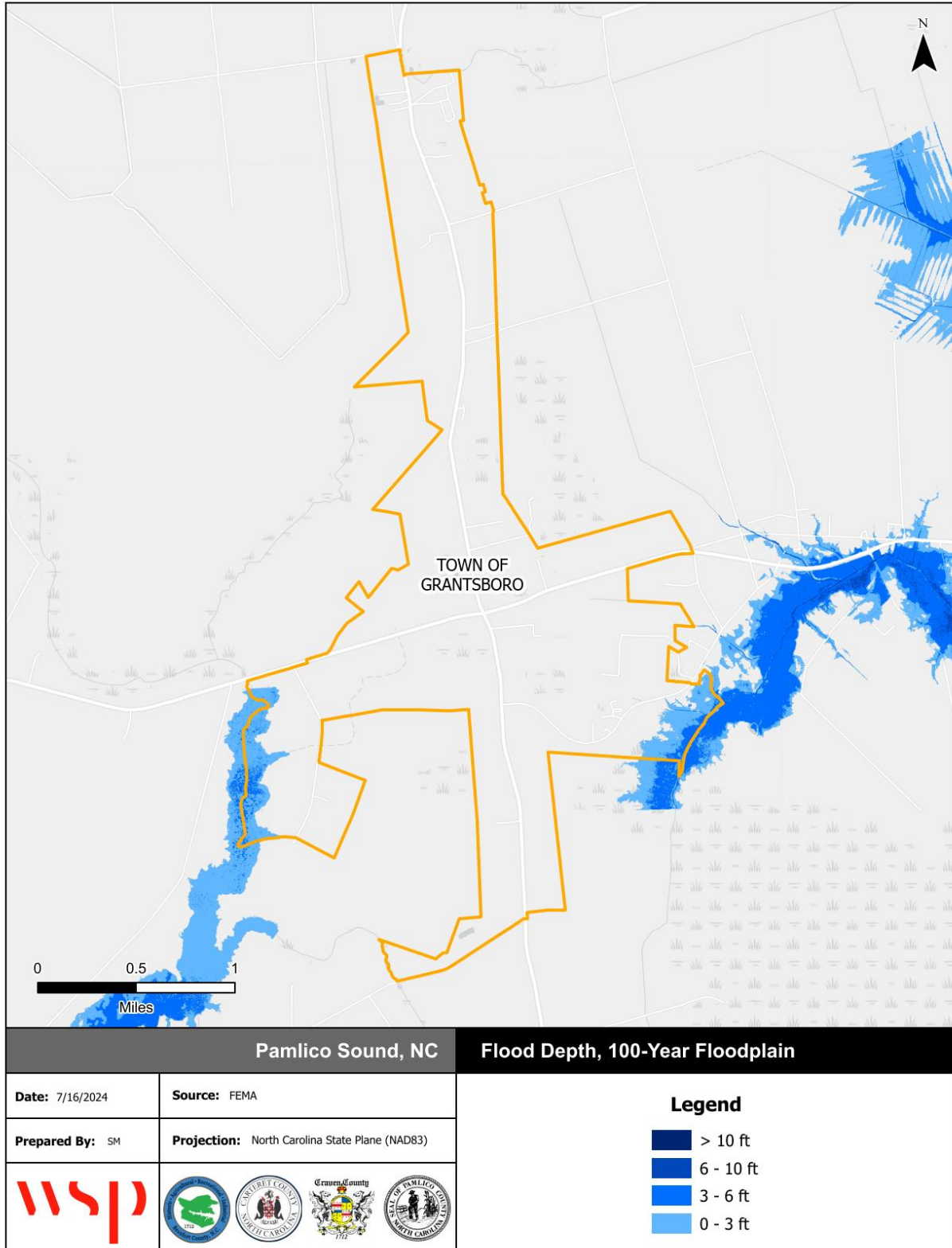
Source: FEMA Effective FIRM

Figure D.24 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Bayboro



Source: FEMA Effective DFIRM

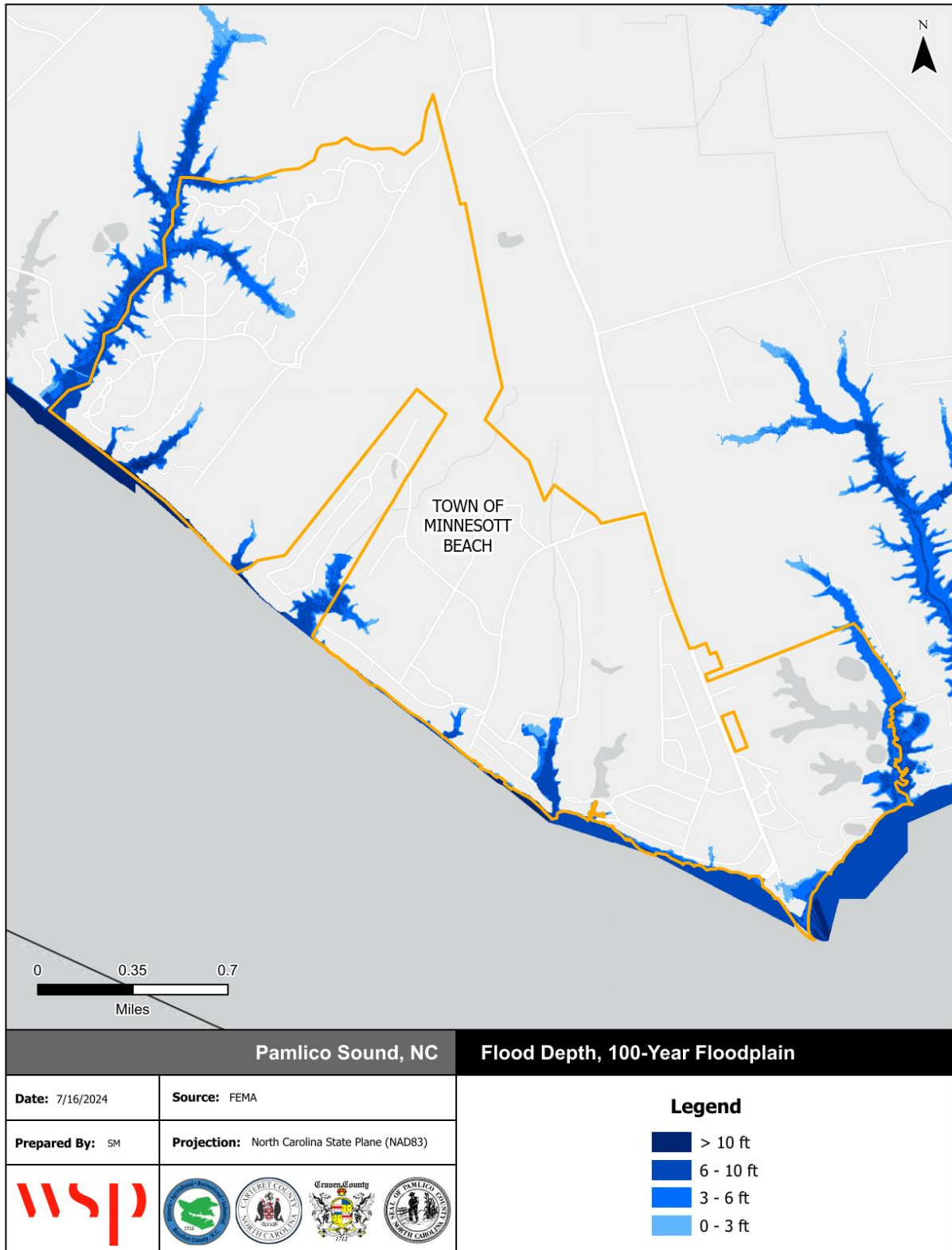
Figure D.25 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Grantsboro



Source: FEMA Effective DFIRM

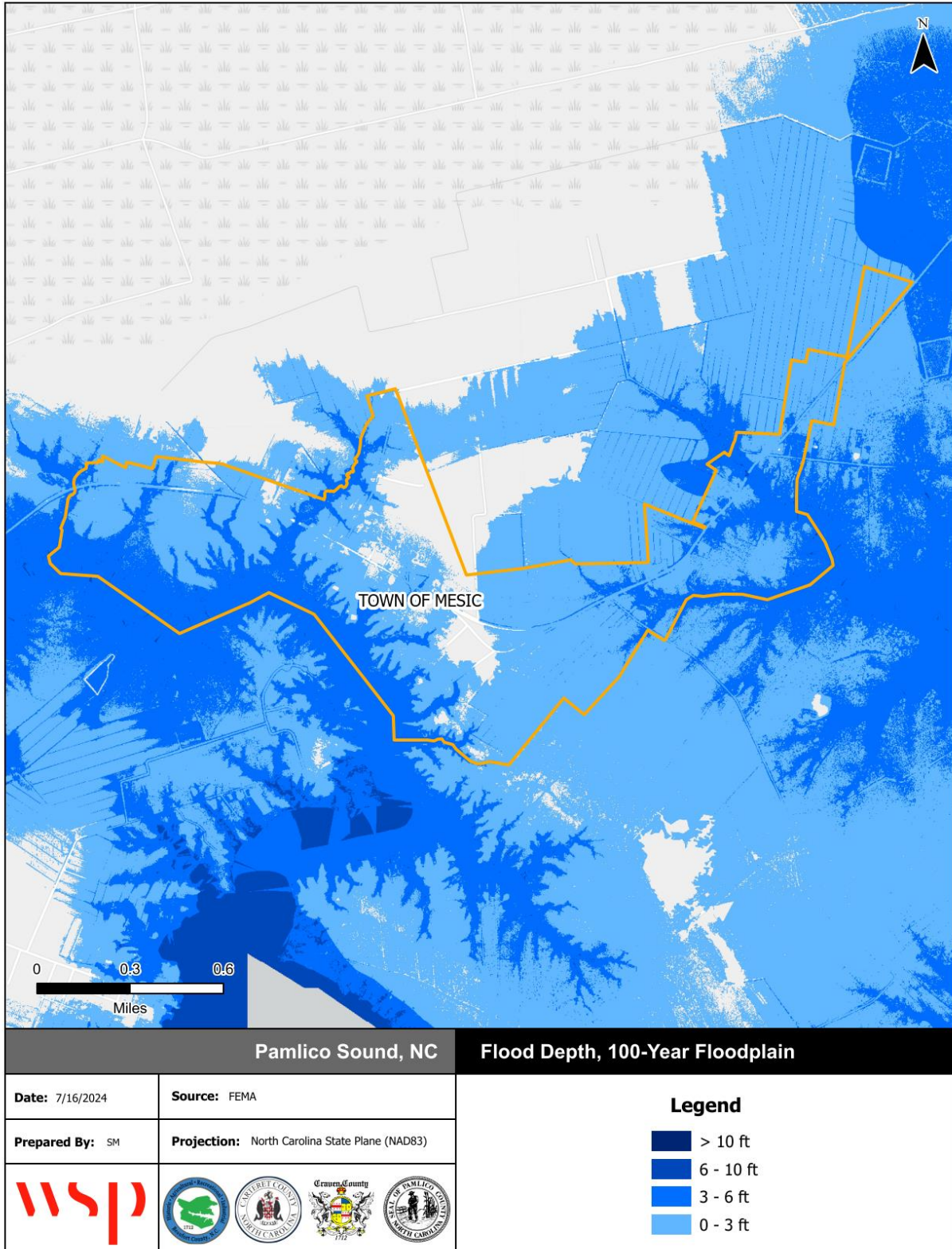


Figure D.26 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Minnesott Beach



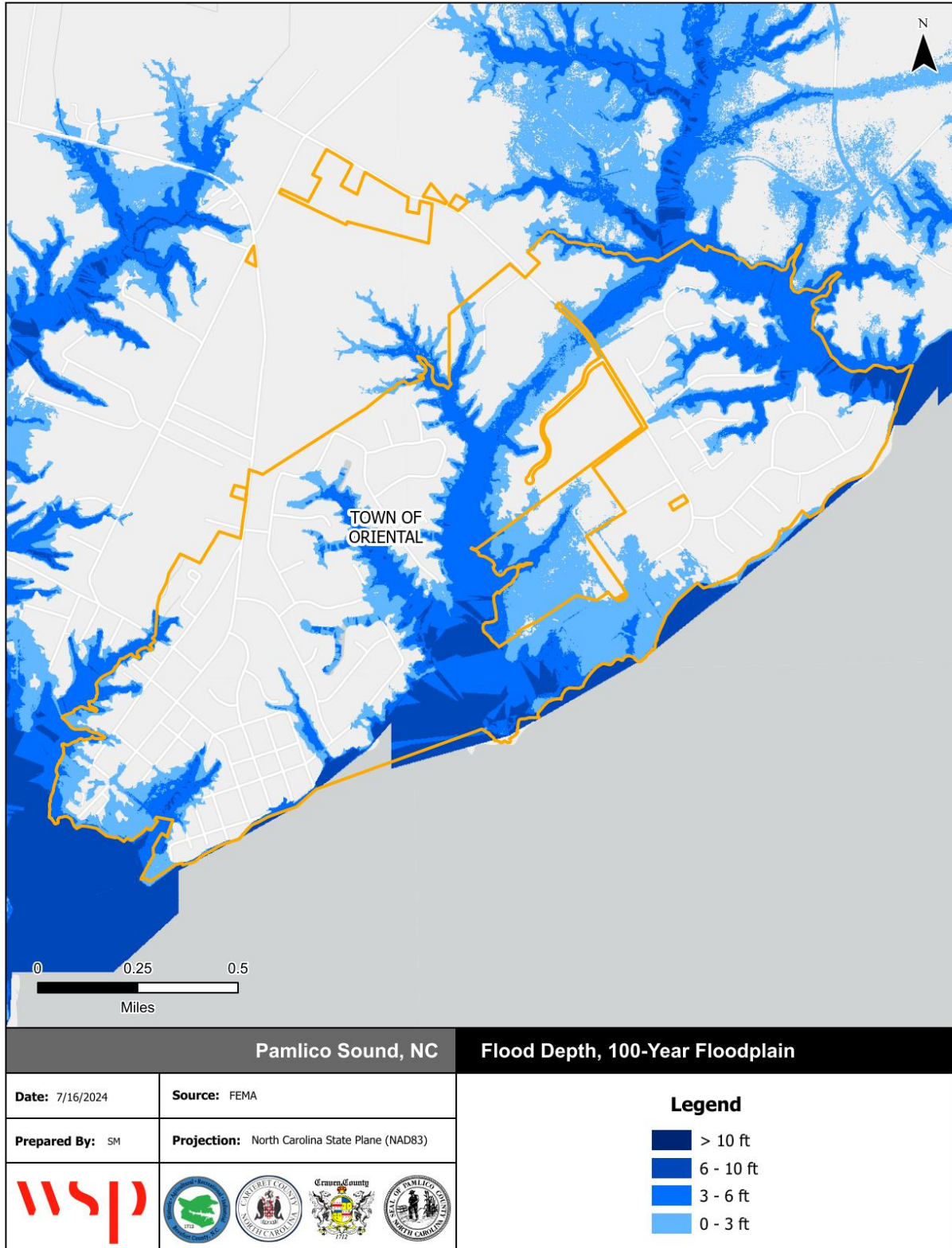
Source: FEMA Effective DFIRM

Figure D.27 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Mesic



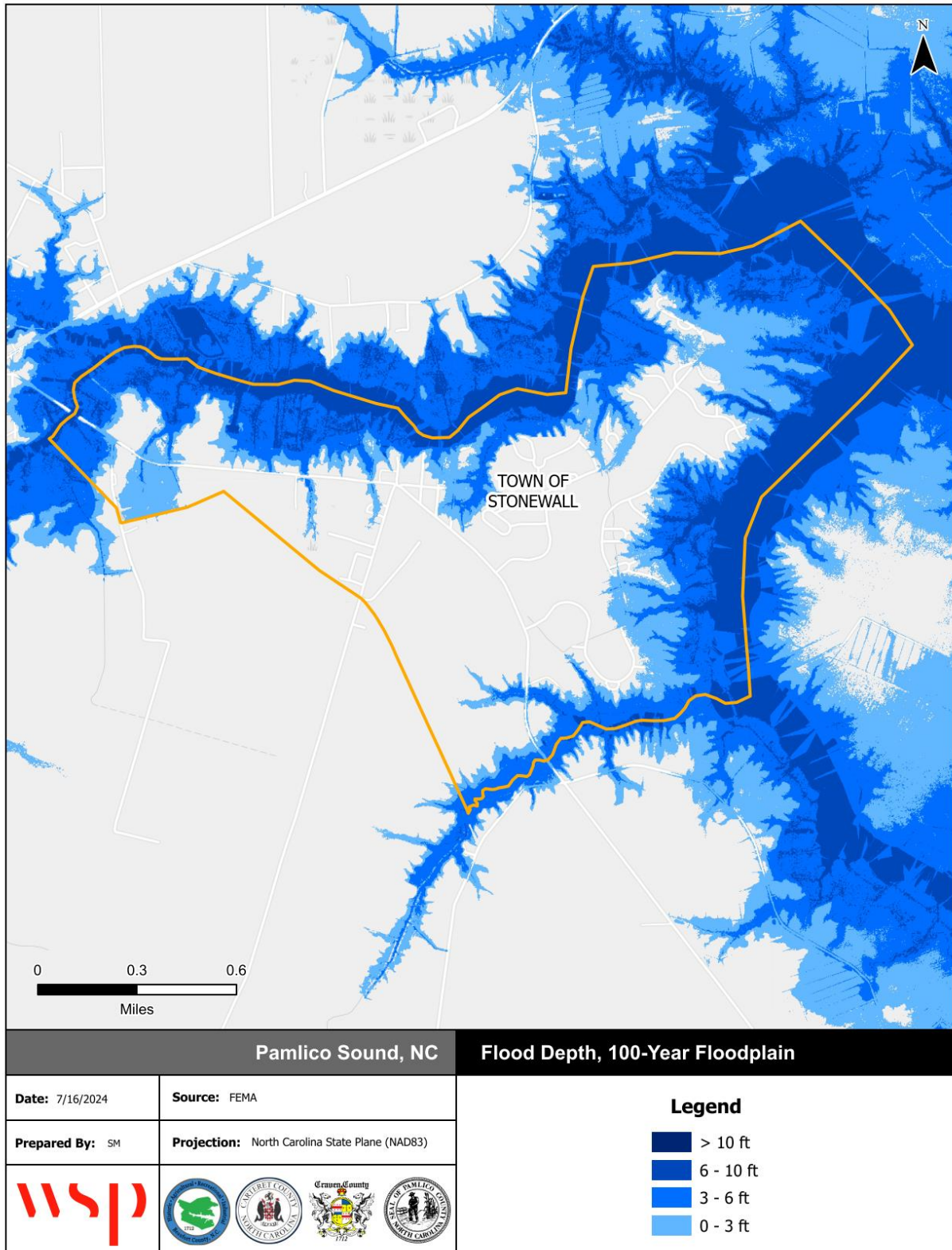
Source: FEMA Effective DFIRM

Figure D.28 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Oriental



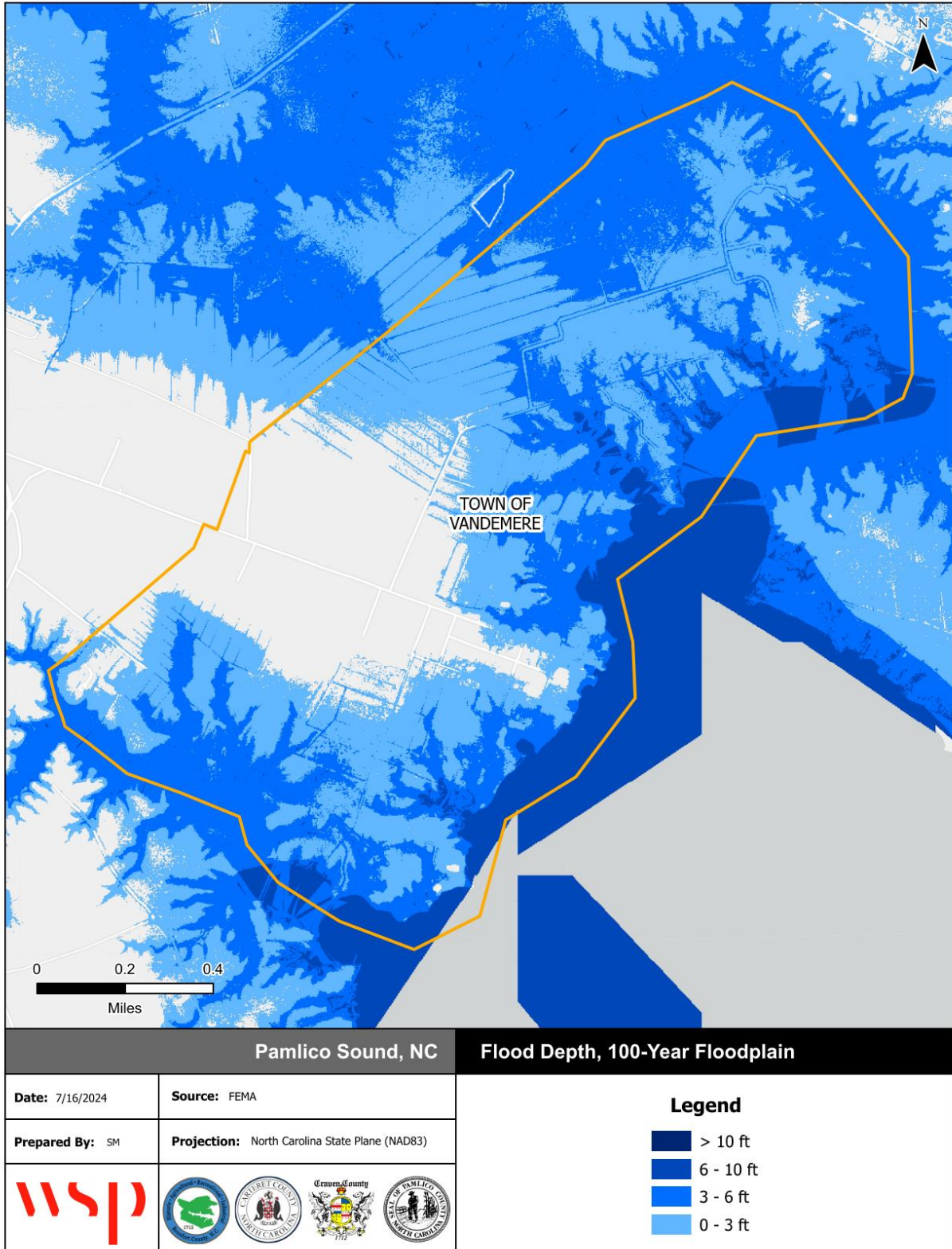
Source: FEMA Effective DFIRM

Figure D.29 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Stonewall



Source: FEMA Effective DFIRM

Figure D.30 - Flood Depth, 1%-Annual-Chance Floodplain, Town of Vandemere



Source: FEMA Effective DFIRM

## D.2.1.1 FLOOD INSURANCE DATA

The following tables reflect NFIP emergency and regular entry dates as well as policy and claims data for Pamlico County and incorporated categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

Table D.14 – NFIP Program Entry Dates

| Community                            | Emergency Entry Date | Regular Entry Date |
|--------------------------------------|----------------------|--------------------|
| Pamlico County (Unincorporated Area) | May 17, 1973         | September 4, 1985  |
| Town of Alliance                     | November 9, 1977     | August 5, 1985     |
| Town of Arapahoe                     | N/A                  | Not Participating  |
| Town of Bayboro                      | May 17, 1973         | December 4, 1985   |
| Town of Grantsboro                   | N/A                  | Not Participating  |
| Town of Mesic                        | N/A                  | September 4, 1985  |
| Town of Minnesott Beach              | September 23, 1985   | September 23, 1985 |
| Town of Oriental                     | May 17, 1973         | December 4, 1985   |
| Town of Stonewall                    | May 17, 1973         | December 4, 1985   |
| Town of Vandemere                    | May 17, 1973         | December 4, 1985   |

Table D.15 – NFIP Policy and Claims Data by Structure Type

| Structure Type                            | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|---|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Pamlico County Unincorporated Area</b> |                   |                  |                      |                              |                             |
| Single Family                             | 864               | \$567,709        | \$224,380,000        | 2,396                        | \$52,651,856.60             |
| 2-4 Family                                | 2                 | \$1,443          | \$556,000            | 5                            | \$42,453.14                 |
| All Other Residential                     | 7                 | \$2,883          | \$1,305,000          | 6                            | \$87,157.77                 |
| Non-Residential                           | 19                | \$32,385         | \$5,721,000          | 81                           | \$4,027,416.17              |
| <b>Total</b>                              | <b>892</b>        | <b>\$604,420</b> | <b>\$231,962,000</b> | <b>2,488</b>                 | <b>\$56,808,883.68</b>      |
| <b>Town of Alliance</b>                   |                   |                  |                      |                              |                             |
| Single Family                             | 6                 | \$3,168          | \$1,410,000          | 3                            | \$15,591.92                 |
| 2-4 Family                                | 1                 | \$620            | \$210,000            | 0                            | \$0.00                      |
| All Other Residential                     | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| Non-Residential                           | 3                 | \$5,216          | \$2,025,000          | 0                            | \$0.00                      |
| <b>Total</b>                              | <b>10</b>         | <b>\$9,004</b>   | <b>\$3,645,000</b>   | <b>3</b>                     | <b>\$15,591.92</b>          |
| <b>Town of Bayboro</b>                    |                   |                  |                      |                              |                             |
| Single Family                             | 18                | \$11,562         | \$3,919,000          | 63                           | \$1,196,336.30              |
| 2-4 Family                                | 0                 | \$0              | \$0                  | 1                            | \$0.00                      |
| All Other Residential                     | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| Non-Residential                           | 3                 | \$2,504          | \$1,386,000          | 2                            | \$88,822.27                 |
| <b>Total</b>                              | <b>21</b>         | <b>\$14,066</b>  | <b>\$5,305,000</b>   | <b>66</b>                    | <b>\$1,285,158.57</b>       |
| <b>Town of Mesic</b>                      |                   |                  |                      |                              |                             |
| Single Family                             | 32                | \$18,355         | \$6,139,000          | 50                           | \$1,713,580.66              |
| 2-4 Family                                | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| All Other Residential                     | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| Non-Residential                           | 1                 | \$2,913          | \$226,000            | 1                            | \$141,065.68                |
| <b>Total</b>                              | <b>33</b>         | <b>\$21,268</b>  | <b>\$6,365,000</b>   | <b>51</b>                    | <b>\$1,854,646.34</b>       |

**ANNEX D: PAMLICO COUNTY**

| Structure Type                 | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--------------------------------|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Town of Minnesott Beach</b> |                   |                  |                      |                              |                             |
| Single Family                  | 15                | \$9,704          | \$5,066,000          | 14                           | \$97,923.18                 |
| 2-4 Family                     | 1                 | \$531            | \$250,000            | 1                            | \$7,101.19                  |
| All Other Residential          | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| Non-Residential                | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                   | <b>16</b>         | <b>\$10,235</b>  | <b>\$5,316,000</b>   | <b>15</b>                    | <b>\$105,024.37</b>         |
| <b>Town of Oriental</b>        |                   |                  |                      |                              |                             |
| Single Family                  | 475               | \$357,147        | \$140,470,000        | 1,328                        | \$27,913,602.54             |
| 2-4 Family                     | 30                | \$10,631         | \$6,032,000          | 21                           | \$371,576.85                |
| All Other Residential          | 46                | \$19,917         | \$9,573,000          | 25                           | \$827,152.63                |
| Non-Residential                | 29                | \$77,840         | \$10,097,000         | 120                          | \$6,222,822.22              |
| <b>Total</b>                   | <b>580</b>        | <b>\$465,535</b> | <b>\$166,172,000</b> | <b>1,494</b>                 | <b>\$35,335,154.24</b>      |
| <b>Town of Stonewall</b>       |                   |                  |                      |                              |                             |
| Single Family                  | 8                 | \$5,208          | \$1,722,000          | 31                           | \$486,613.44                |
| 2-4 Family                     | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| All Other Residential          | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| Non-Residential                | 2                 | \$2,727          | \$293,000            | 5                            | \$834,493.14                |
| <b>Total</b>                   | <b>10</b>         | <b>\$7,935</b>   | <b>\$2,015,000</b>   | <b>36</b>                    | <b>\$1,321,106.58</b>       |
| <b>Town of Vandemere</b>       |                   |                  |                      |                              |                             |
| Single Family                  | 44                | \$31,277         | \$9,187,000          | 179                          | \$5,162,454.12              |
| 2-4 Family                     | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| All Other Residential          | 0                 | \$0              | \$0                  | 2                            | \$20,000.00                 |
| Non-Residential                | 2                 | \$1,706          | \$272,000            | 24                           | \$1,323,262.51              |
| <b>Total</b>                   | <b>46</b>         | <b>\$32,983</b>  | <b>\$9,459,000</b>   | <b>205</b>                   | <b>\$6,505,716.63</b>       |

Source: FEMA Community Information System, accessed January 2025

**Table D.16 - NFIP Policy and Claims Data by Flood Zone**

| Flood Zone                                | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|---|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Pamlico County Unincorporated Area</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                         | 801               | \$540,108        | \$207,054,000        | 2,273                        | \$52,592,116.68             |
| A Zones                                   | 5                 | \$6,167          | \$1,224,000          | 74                           | \$1,948,779.43              |
| V01-30 & VE Zones                         | 2                 | \$1,136          | \$214,000            | 4                            | \$102,524.80                |
| <b>B, C &amp; X Zone</b>                  |                   |                  |                      |                              |                             |
| Standard                                  | 83                | \$56,309         | \$23,190,000         | 32                           | \$779,175.07                |
| Preferred                                 | 0                 | \$0              | \$0                  | 60                           | \$1,249,015.97              |
| <b>Total</b>                              | <b>891</b>        | <b>\$603,720</b> | <b>\$231,682,000</b> | <b>2,443</b>                 | <b>\$56,671,611.95</b>      |
| <b>Town of Alliance</b>                   |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                         | 4                 | \$1,772          | \$710,000            | 3                            | \$15,591.92                 |
| <b>B, C &amp; X Zone</b>                  |                   |                  |                      |                              |                             |
| Standard                                  | 6                 | \$7,232          | \$2,935,000          | 0                            | \$0.00                      |
| Preferred                                 | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                              | <b>10</b>         | <b>\$9,004</b>   | <b>\$3,645,000</b>   | <b>3</b>                     | <b>\$15,591.92</b>          |

**ANNEX D: PAMLICO COUNTY**

| <b>Flood Zone</b>              | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|--------------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Bayboro</b>         |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones              | 15                       | \$10,170             | \$3,742,000               | 58                                  | \$1,189,477.01                     |
| B, C & X Zone                  |                          |                      |                           |                                     |                                    |
| Standard                       | 6                        | \$3,896              | \$1,563,000               | 2                                   | \$2,995.44                         |
| Preferred                      | 0                        | \$0                  | \$0                       | 6                                   | \$92,686.12                        |
| <b>Total</b>                   | <b>21</b>                | <b>\$14,066</b>      | <b>\$5,305,000</b>        | <b>66</b>                           | <b>\$1,285,158.57</b>              |
| <b>Town of Mesic</b>           |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones              | 32                       | \$20,562             | \$6,015,000               | 51                                  | \$1,854,646.34                     |
| B, C & X Zone                  |                          |                      |                           |                                     |                                    |
| Standard                       | 1                        | \$706                | \$350,000                 | 0                                   | \$0.00                             |
| Preferred                      | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>                   | <b>33</b>                | <b>\$21,268</b>      | <b>\$6,365,000</b>        | <b>51</b>                           | <b>\$1,854,646.34</b>              |
| <b>Town of Minnesott Beach</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones              | 2                        | \$1,304              | \$600,000                 | 11                                  | \$96,736.56                        |
| B, C & X Zone                  |                          |                      |                           |                                     |                                    |
| Standard                       | 14                       | \$8,931              | \$4,716,000               | 1                                   | \$0.00                             |
| Preferred                      | 0                        | \$0                  | \$0                       | 3                                   | \$8,287.81                         |
| <b>Total</b>                   | <b>16</b>                | <b>\$10,235</b>      | <b>\$5,316,000</b>        | <b>15</b>                           | <b>\$105,024.37</b>                |
| <b>Town of Oriental</b>        |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones              | 426                      | \$331,828            | \$119,479,000             | 1,366                               | \$32,636,507.39                    |
| B, C & X Zone                  |                          |                      |                           |                                     |                                    |
| Standard                       | 154                      | \$133,707            | \$46,693,000              | 47                                  | \$909,368.70                       |
| Preferred                      | 0                        | \$0                  | \$0                       | 84                                  | \$1,888,756.88                     |
| <b>Total</b>                   | <b>580</b>               | <b>\$465,535</b>     | <b>\$166,172,000</b>      | <b>1,497</b>                        | <b>\$35,434,632.97</b>             |
| <b>Town of Stonewall</b>       |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones              | 8                        | \$5,651              | \$1,528,000               | 33                                  | \$1,261,976.95                     |
| B, C & X Zone                  |                          |                      |                           |                                     |                                    |
| Standard                       | 2                        | \$2,284              | \$487,000                 | 0                                   | \$0.00                             |
| Preferred                      | 0                        | \$0                  | \$0                       | 3                                   | \$59,129.63                        |
| <b>Total</b>                   | <b>10</b>                | <b>\$7,935</b>       | <b>\$2,015,000</b>        | <b>36</b>                           | <b>\$1,321,106.58</b>              |
| <b>Town of Vandemere</b>       |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones              | 44                       | \$31,941             | \$9,097,000               | 201                                 | \$6,434,984.54                     |
| B, C & X Zone                  |                          |                      |                           |                                     |                                    |
| Standard                       | 2                        | \$1,042              | \$362,000                 | 4                                   | \$70,732.09                        |
| Preferred                      | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>                   | <b>46</b>                | <b>\$32,983</b>      | <b>\$9,459,000</b>        | <b>205</b>                          | <b>\$6,505,716.63</b>              |

Source: FEMA Community Information System, accessed January 2025



Table D.17 - NFIP Policy and Claims Data Pre-FIRM

| Flood Zone                                | Policies in Force | Total Premium    | Insurance in Force  | Number of Closed Paid Losses | Total of Closed Paid Losses |
|---|-------------------|------------------|---------------------|------------------------------|-----------------------------|
| <b>Pamlico County Unincorporated Area</b> |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                         | 170               | \$124,252        | \$35,934,000        | 984                          | \$28,522,589.95             |
| A Zones                                   | 1                 | \$919            | \$316,000           | 48                           | \$1,052,830.35              |
| V01-30 & VE Zones                         | 1                 | \$769            | \$187,000           | 1                            | \$102,297.40                |
| B, C & X Zone                             | 33                | \$22,015         | \$7,876,000         | 47                           | \$1,247,103.36              |
| Standard                                  | 33                | \$22,015         | \$7,876,000         | 27                           | \$668,824.40                |
| Preferred                                 | 0                 | \$0              | \$0                 | 21                           | \$586,415.46                |
| <b>Total</b>                              | <b>205</b>        | <b>\$147,955</b> | <b>\$44,313,000</b> | <b>1,080</b>                 | <b>\$30,924,821.06</b>      |
| <b>Town of Alliance</b>                   |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                         | 1                 | \$592            | \$66,000            | 2                            | \$13,503.17                 |
| B, C & X Zone                             | 3                 | \$1,676          | \$725,000           | 0                            | \$0.00                      |
| Standard                                  | 3                 | \$1,676          | \$725,000           | 0                            | \$0.00                      |
| Preferred                                 | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>                              | <b>4</b>          | <b>\$2,268</b>   | <b>\$791,000</b>    | <b>2</b>                     | <b>\$13,503.17</b>          |
| <b>Town of Bayboro</b>                    |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                         | 8                 | \$5,663          | \$1,831,000         | 37                           | \$831,702.93                |
| B, C & X Zone                             | 4                 | \$2,780          | \$1,143,000         | 7                            | \$95,681.56                 |
| Standard                                  | 4                 | \$2,780          | \$1,143,000         | 1                            | \$2,995.44                  |
| Preferred                                 | 0                 | \$0              | \$0                 | 6                            | \$92,686.12                 |
| <b>Total</b>                              | <b>12</b>         | <b>\$8,443</b>   | <b>\$2,974,000</b>  | <b>44</b>                    | <b>\$927,384.49</b>         |
| <b>Town of Mesic</b>                      |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                         | 16                | \$11,462         | \$2,975,000         | 25                           | \$1,068,190.45              |
| <b>Total</b>                              | <b>16</b>         | <b>\$11,462</b>  | <b>\$2,975,000</b>  | <b>25</b>                    | <b>\$1,068,190.45</b>       |
| <b>Town of Minnesott Beach</b>            |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                         | 1                 | \$531            | \$250,000           | 6                            | \$80,532.96                 |
| B, C & X Zone                             | 5                 | \$3,092          | \$1,731,000         | 1                            | \$0.00                      |
| Standard                                  | 5                 | \$3,092          | \$1,731,000         | 0                            | \$0.00                      |
| Preferred                                 | 0                 | \$0              | \$0                 | 1                            | \$0.00                      |
| <b>Total</b>                              | <b>6</b>          | <b>\$3,623</b>   | <b>\$1,981,000</b>  | <b>7</b>                     | <b>\$80,532.96</b>          |
| <b>Town of Oriental</b>                   |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                         | 116               | \$127,720        | \$32,336,000        | 550                          | \$16,421,902.41             |
| B, C & X Zone                             | 61                | \$54,063         | \$17,785,000        | 81                           | \$1,720,553.00              |
| Standard                                  | 61                | \$54,063         | \$17,785,000        | 30                           | \$448,613.19                |
| Preferred                                 | 0                 | \$0              | \$0                 | 52                           | \$1,278,837.55              |
| <b>Total</b>                              | <b>177</b>        | <b>\$181,783</b> | <b>\$50,121,000</b> | <b>631</b>                   | <b>\$18,142,455.41</b>      |
| <b>Town of Stonewall</b>                  |                   |                  |                     |                              |                             |
| A01-30 & AE Zones                         | 5                 | \$3,603          | \$862,000           | 28                           | \$1,175,328.30              |
| B, C & X Zone                             | 2                 | \$2,284          | \$487,000           | 0                            | \$0.00                      |
| Standard                                  | 2                 | \$2,284          | \$487,000           | 0                            | \$0.00                      |
| Preferred                                 | 0                 | \$0              | \$0                 | 0                            | \$0.00                      |
| <b>Total</b>                              | <b>7</b>          | <b>\$5,887</b>   | <b>\$1,349,000</b>  | <b>28</b>                    | <b>\$1,175,328.30</b>       |

**ANNEX D: PAMLICO COUNTY**

| Flood Zone               | Policies in Force | Total Premium   | Insurance in Force | Number of Closed Paid Losses | Total of Closed Paid Losses |
|--------------------------|-------------------|-----------------|--------------------|------------------------------|-----------------------------|
| <b>Town of Vandemere</b> |                   |                 |                    |                              |                             |
| A01-30 & AE Zones        | 16                | \$13,471        | \$2,820,000        | 135                          | \$4,473,586.44              |
| B, C & X Zone            | 2                 | \$1,042         | \$362,000          | 0                            | \$0.00                      |
| Standard                 | 2                 | \$1,042         | \$362,000          | 0                            | \$0.00                      |
| Preferred                | 0                 | \$0             | \$0                | 0                            | \$0.00                      |
| <b>Total</b>             | <b>18</b>         | <b>\$14,513</b> | <b>\$3,182,000</b> | <b>135</b>                   | <b>\$4,473,586.44</b>       |

Source: FEMA Community Information System, accessed January 2025

**Table D.18 - NFIP Policy and Claims Data Post-FIRM**

| Flood Zone                                | Policies in Force | Total Premium    | Insurance in Force   | Number of Closed Paid Losses | Total of Closed Paid Losses |
|---|-------------------|------------------|----------------------|------------------------------|-----------------------------|
| <b>Pamlico County Unincorporated Area</b> |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                         | 631               | \$415,856        | \$171,120,000        | 1,289                        | \$24,069,526.73             |
| A Zones                                   | 4                 | \$5,248          | \$908,000            | 26                           | \$895,949.08                |
| V01-30 & VE Zones                         | 1                 | \$367            | \$27,000             | 3                            | \$227.40                    |
| B, C & X Zone                             | 50                | \$34,294         | \$15,314,000         | 43                           | \$730,532.07                |
| Standard                                  | 50                | \$34,294         | \$15,314,000         | 5                            | \$110,350.67                |
| Preferred                                 | 0                 | \$0              | \$0                  | 39                           | \$662,600.51                |
| <b>Total</b>                              | <b>686</b>        | <b>\$455,765</b> | <b>\$187,369,000</b> | <b>1,361</b>                 | <b>\$25,696,235.28</b>      |
| <b>Town of Alliance</b>                   |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                         | 3                 | \$1,180          | \$644,000            | 1                            | \$2,088.75                  |
| B, C & X Zone                             | 3                 | \$5,556          | \$2,210,000          | 0                            | \$0.00                      |
| Standard                                  | 3                 | \$5,556          | \$2,210,000          | 0                            | \$0.00                      |
| Preferred                                 | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                              | <b>6</b>          | <b>\$6,736</b>   | <b>\$2,854,000</b>   | <b>1</b>                     | <b>\$2,088.75</b>           |
| <b>Town of Bayboro</b>                    |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                         | 7                 | \$4,507          | \$1,911,000          | 21                           | \$357,774.08                |
| B, C & X Zone                             | 2                 | \$1,116          | \$420,000            | 1                            | \$0.00                      |
| Standard                                  | 2                 | \$1,116          | \$420,000            | 1                            | \$0.00                      |
| Preferred                                 | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                              | <b>9</b>          | <b>\$5,623</b>   | <b>\$2,331,000</b>   | <b>22</b>                    | <b>\$357,774.08</b>         |
| <b>Town of Mesic</b>                      |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                         | 16                | \$9,100          | \$3,040,000          | 26                           | \$786,455.89                |
| B, C & X Zone                             | 1                 | \$706            | \$350,000            | 0                            | \$0.00                      |
| Standard                                  | 1                 | \$706            | \$350,000            | 0                            | \$0.00                      |
| Preferred                                 | 0                 | \$0              | \$0                  | 0                            | \$0.00                      |
| <b>Total</b>                              | <b>17</b>         | <b>\$9,806</b>   | <b>\$3,390,000</b>   | <b>26</b>                    | <b>\$786,455.89</b>         |
| <b>Town of Minnesott Beach</b>            |                   |                  |                      |                              |                             |
| A01-30 & AE Zones                         | 1                 | \$773            | \$350,000            | 5                            | \$16,203.60                 |
| B, C & X Zone                             | 9                 | \$5,839          | \$2,985,000          | 3                            | \$8,287.81                  |
| Standard                                  | 9                 | \$5,839          | \$2,985,000          | 1                            | \$0.00                      |
| Preferred                                 | 0                 | \$0              | \$0                  | 2                            | \$8,287.81                  |
| <b>Total</b>                              | <b>10</b>         | <b>\$6,612</b>   | <b>\$3,335,000</b>   | <b>8</b>                     | <b>\$24,491.41</b>          |

**ANNEX D: PAMLICO COUNTY**

| <b>Flood Zone</b>        | <b>Policies in Force</b> | <b>Total Premium</b> | <b>Insurance in Force</b> | <b>Number of Closed Paid Losses</b> | <b>Total of Closed Paid Losses</b> |
|--------------------------|--------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| <b>Town of Oriental</b>  |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones        | 310                      | \$204,108            | \$87,143,000              | 816                                 | \$16,214,604.98                    |
| B, C & X Zone            | 93                       | \$79,644             | \$28,908,000              | 47                                  | \$978,093.85                       |
| Standard                 | 93                       | \$79,644             | \$28,908,000              | 17                                  | \$460,755.51                       |
| Preferred                | 0                        | \$0                  | \$0                       | 32                                  | \$609,919.33                       |
| <b>Total</b>             | <b>403</b>               | <b>\$283,752</b>     | <b>\$116,051,000</b>      | <b>863</b>                          | <b>\$17,192,698.83</b>             |
| <b>Town of Stonewall</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones        | 3                        | \$2,048              | \$666,000                 | 5                                   | \$86,648.65                        |
| B, C & X Zone            | 0                        | \$0                  | \$0                       | 3                                   | \$59,129.63                        |
| Standard                 | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| Preferred                | 0                        | \$0                  | \$0                       | 3                                   | \$59,129.63                        |
| <b>Total</b>             | <b>3</b>                 | <b>\$2,048</b>       | <b>\$666,000</b>          | <b>8</b>                            | <b>\$145,778.28</b>                |
| <b>Town of Vandemere</b> |                          |                      |                           |                                     |                                    |
| A01-30 & AE Zones        | 28                       | \$18,470             | \$6,277,000               | 66                                  | \$1,961,398.10                     |
| B, C & X Zone            | 0                        | \$0                  | \$0                       | 4                                   | \$70,732.09                        |
| Standard                 | 0                        | \$0                  | \$0                       | 4                                   | \$70,732.09                        |
| Preferred                | 0                        | \$0                  | \$0                       | 0                                   | \$0.00                             |
| <b>Total</b>             | <b>28</b>                | <b>\$18,470</b>      | <b>\$6,277,000</b>        | <b>70</b>                           | <b>\$2,032,130.19</b>              |

Source: FEMA Community Information System, accessed January 2025

D.2.2 WILDFIRE

Table D.19 summarizes the acreage in Pamlico County that falls within the Wildland Urban Interface (WUI), categorized by housing density. Areas in the WUI are those where development may intermix with flammable vegetation. Over 81 percent of Pamlico County is not included in the WUI.

**Table D.19 - Wildland Urban Interface Acreage, Pamlico County**

|  | Housing Density      | Total Acreage  | Percent of Total Acreage |
|--|----------------------|----------------|--------------------------|
|  | Not in WUI           | 294,564        | 81.32%                   |
|  | LT 1hs/40ac          | 22,806         | 6.30%                    |
|  | 1hs/40ac to 1hs/20ac | 14,561         | 4.02%                    |
|  | 1hs/20ac to 1hs/10ac | 11,991         | 3.31%                    |
|  | 1hs/10ac to 1hs/5ac  | 9,321          | 2.57%                    |
|  | 1hs/5ac to 1hs/2ac   | 6,530          | 1.80%                    |
|  | 1hs/2ac to 3hs/1ac   | 2,420          | 0.67%                    |
|  | GT 3hs/1ac           | 47             | 0.01%                    |
|  | <b>Total</b>         | <b>362,240</b> | <b>100%</b>              |

Source: Southern Wildfire Risk Assessment

Figure D.31 depicts the WUI for Pamlico County and all participating jurisdictions. Figure D.32 and Figure D.33 depicts the Fire Intensity Scale, which indicates the potential severity of fire based on fuel loads, topography, and other factors. Figure D.34 depicts Burn Probability based on landscape conditions, percentile weather, historical ignition patterns, and historical prevention and suppression efforts.

Potential fire intensity is highest in the unincorporated Pamlico County, particularly in the northwest corner and southcentral portion of the county as well as along the northern border with Beaufort County. Burn probability is highest in the northwestern corner and along the northern border of the county. While the unincorporated area along the northern border and in the northwestern corner of the county has both high potential fire intensity and a high burn probability, much of this area is located outside of the WUI, so a fire here might not pose as high a risk to human settlement and the built environment.

Table D.20 through Table D.29 provides the count and estimated value of all structures that intersect with areas of unincorporated Pamlico County and participating jurisdictions that are rated moderate to high on the WUI Risk Index. Table D.30 through Table D.39 provides building counts and values for critical facilities by FEMA lifeline that are located in areas rated moderate to high on the WUI Risk Index.

**Table D.20 - Structures at Risk to Moderate-High WUI Risk Index, Unincorporated Pamlico County**

| Occupancy    | Structures at Risk | Structure Value         | Estimated Content Value | Total Value             |
|--------------|--------------------|-------------------------|-------------------------|-------------------------|
| Agriculture  | 53                 | \$1,685,335.00          | \$1,685,335.00          | \$3,370,670.00          |
| Commercial   | 142                | \$8,333,452.00          | \$8,333,452.00          | \$16,666,904.00         |
| Education    | 0                  | \$0                     | \$0                     | \$0                     |
| Government   | 3                  | \$486,874.00            | \$486,874.00            | \$973,748.00            |
| Industrial   | 25                 | \$3,218,376.00          | \$4,827,564.00          | \$8,045,940.00          |
| Religious    | 30                 | \$4,410,062.00          | \$4,410,062.00          | \$8,820,124.00          |
| Residential  | 3,691              | \$189,134,128.00        | \$94,567,064.00         | \$283,701,192.00        |
| <b>Total</b> | <b>3,944</b>       | <b>\$207,268,227.00</b> | <b>\$103,634,113.50</b> | <b>\$310,902,340.50</b> |

Source: Southern Wildfire Risk Assessment

**Table D.21 - Structures at Risk to Moderate-High WUI Risk Index, Town of Alliance**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 0                  | \$0                    | \$0                     | \$0                    |
| Commercial   | 60                 | \$5,416,376.00         | \$5,416,376.00          | \$10,832,752.00        |
| Education    | 2                  | \$8,881.00             | \$8,881.00              | \$17,762.00            |
| Government   | 8                  | \$10,534,250.00        | \$10,534,250.00         | \$21,068,500.00        |
| Industrial   | 1                  | \$85,044.00            | \$127,566.00            | \$212,610.00           |
| Religious    | 4                  | \$411,719.00           | \$411,719.00            | \$823,438.00           |
| Residential  | 323                | \$14,617,246.00        | \$7,308,623.00          | \$21,925,869.00        |
| <b>Total</b> | <b>398</b>         | <b>\$31,073,516.00</b> | <b>\$15,536,758.00</b>  | <b>\$46,610,274.00</b> |

Source: Southern Wildfire Risk Assessment

**Table D.22 - Structures at Risk to Moderate-High WUI Risk Index, Town of Arapahoe**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 0                  | \$0                    | \$0                     | \$0                    |
| Commercial   | 22                 | \$1,251,715.00         | \$1,251,715.00          | \$2,503,430.00         |
| Education    | 4                  | \$265,545.00           | \$265,545.00            | \$531,090.00           |
| Government   | 3                  | \$382,850.00           | \$382,850.00            | \$765,700.00           |
| Industrial   | 4                  | \$49,623.00            | \$74,434.50             | \$124,057.50           |
| Religious    | 6                  | \$1,440,522.00         | \$1,440,522.00          | \$2,881,044.00         |
| Residential  | 345                | \$11,663,939.00        | \$5,831,969.50          | \$17,495,908.50        |
| <b>Total</b> | <b>384</b>         | <b>\$15,054,194.00</b> | <b>\$7,527,097.00</b>   | <b>\$22,581,291.00</b> |

Source: Southern Wildfire Risk Assessment

**Table D.23 - Structures at Risk to Moderate-High WUI Risk Index, Town of Bayboro**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 8                  | \$501,871.00           | \$501,871.00            | \$1,003,742.00         |
| Commercial   | 50                 | \$6,318,124.00         | \$6,318,124.00          | \$12,636,248.00        |
| Education    | 10                 | \$6,303,991.00         | \$6,303,991.00          | \$12,607,982.00        |
| Government   | 7                  | \$27,302,675.00        | \$27,302,675.00         | \$54,605,350.00        |
| Industrial   | 2                  | \$49,459.00            | \$74,188.50             | \$123,647.50           |
| Religious    | 7                  | \$1,606,203.00         | \$1,606,203.00          | \$3,212,406.00         |
| Residential  | 345                | \$14,171,148.00        | \$7,085,574.00          | \$21,256,722.00        |
| <b>Total</b> | <b>429</b>         | <b>\$56,253,471.00</b> | <b>\$28,126,735.50</b>  | <b>\$84,380,206.50</b> |

Source: Southern Wildfire Risk Assessment

**Table D.24 - Structures at Risk to Moderate-High WUI Risk Index, Town of Grantsboro**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 0                  | \$0                    | \$0                     | \$0                    |
| Commercial   | 29                 | \$8,379,429.00         | \$8,379,429.00          | \$16,758,858.00        |
| Education    | 0                  | \$0                    | \$0                     | \$0                    |
| Government   | 4                  | \$10,290,295.00        | \$10,290,295.00         | \$20,580,590.00        |
| Industrial   | 0                  | \$0                    | \$0                     | \$0                    |
| Religious    | 10                 | \$1,252,590.00         | \$1,252,590.00          | \$2,505,180.00         |
| Residential  | 461                | \$11,824,380.00        | \$5,912,190.00          | \$17,736,570.00        |
| <b>Total</b> | <b>504</b>         | <b>\$31,746,694.00</b> | <b>\$15,873,347.00</b>  | <b>\$47,620,041.00</b> |

Source: Southern Wildfire Risk Assessment

**Table D.25 - Structures at Risk to Moderate-High WUI Risk Index, Town of Mesic**

| Occupancy    | Structures at Risk | Structure Value       | Estimated Content Value | Total Value           |
|--------------|--------------------|-----------------------|-------------------------|-----------------------|
| Agriculture  | 2                  | \$80,183.00           | \$80,183.00             | \$160,366.00          |
| Commercial   | 6                  | \$71,482.00           | \$71,482.00             | \$142,964.00          |
| Education    | 0                  | \$0                   | \$0                     | \$0                   |
| Government   | 1                  | \$88,180.00           | \$88,180.00             | \$176,360.00          |
| Industrial   | 1                  | \$19,309.00           | \$28,963.50             | \$48,272.50           |
| Religious    | 3                  | \$231,146.00          | \$231,146.00            | \$462,292.00          |
| Residential  | 132                | \$5,544,558.00        | \$2,772,279.00          | \$8,316,837.00        |
| <b>Total</b> | <b>145</b>         | <b>\$6,034,858.00</b> | <b>\$3,017,429.00</b>   | <b>\$9,052,287.00</b> |

Source: Southern Wildfire Risk Assessment

**Table D.26 - Structures at Risk to Moderate-High WUI Risk Index, Town of Minnesott Beach**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value            |
|--------------|--------------------|------------------------|-------------------------|------------------------|
| Agriculture  | 0                  | \$0                    | \$0                     | \$0                    |
| Commercial   | 9                  | \$1,311,497.00         | \$1,311,497.00          | \$2,622,994.00         |
| Education    | 0                  | \$0                    | \$0                     | \$0                    |
| Government   | 0                  | \$0                    | \$0                     | \$0                    |
| Industrial   | 0                  | \$0                    | \$0                     | \$0                    |
| Religious    | 1                  | \$455,840.00           | \$455,840.00            | \$911,680.00           |
| Residential  | 300                | \$30,161,889.00        | \$15,080,944.50         | \$45,242,833.50        |
| <b>Total</b> | <b>310</b>         | <b>\$31,929,226.00</b> | <b>\$15,964,613.00</b>  | <b>\$47,893,839.00</b> |

Source: Southern Wildfire Risk Assessment

**Table D.27 – Structures at Risk to Moderate-High WUI Risk Index, Town of Oriental**

| Occupancy    | Structures at Risk | Structure Value        | Estimated Content Value | Total Value             |
|--------------|--------------------|------------------------|-------------------------|-------------------------|
| Agriculture  | 2                  | \$15,951.00            | \$15,951.00             | \$31,902.00             |
| Commercial   | 50                 | \$5,210,051.00         | \$5,210,051.00          | \$10,420,102.00         |
| Education    | 0                  | \$0                    | \$0                     | \$0                     |
| Government   | 6                  | \$1,317,752.00         | \$1,317,752.00          | \$2,635,504.00          |
| Industrial   | 2                  | \$230,508.00           | \$345,762.00            | \$576,270.00            |
| Religious    | 5                  | \$1,335,401.00         | \$1,335,401.00          | \$2,670,802.00          |
| Residential  | 608                | \$71,648,285.00        | \$35,824,142.50         | \$107,472,427.50        |
| <b>Total</b> | <b>673</b>         | <b>\$79,757,948.00</b> | <b>\$39,878,974.00</b>  | <b>\$119,636,922.00</b> |

Source: Southern Wildfire Risk Assessment

**Table D.28 – Structures at Risk to Moderate-High WUI Risk Index, Town of Stonewall**

| Occupancy    | Structures at Risk | Structure Value       | Estimated Content Value | Total Value           |
|--------------|--------------------|-----------------------|-------------------------|-----------------------|
| Agriculture  | 2                  | \$37,016.00           | \$37,016.00             | \$74,032.00           |
| Commercial   | 15                 | \$435,319.00          | \$435,319.00            | \$870,638.00          |
| Education    | 0                  | \$0                   | \$0                     | \$0                   |
| Government   | 0                  | \$0                   | \$0                     | \$0                   |
| Industrial   | 2                  | \$3,186.00            | \$4,779.00              | \$7,965.00            |
| Religious    | 3                  | \$309,885.00          | \$309,885.00            | \$619,770.00          |
| Residential  | 136                | \$4,189,448.00        | \$2,094,724.00          | \$6,284,172.00        |
| <b>Total</b> | <b>158</b>         | <b>\$4,974,854.00</b> | <b>\$2,487,427.00</b>   | <b>\$7,462,281.00</b> |

Source: Southern Wildfire Risk Assessment

**Table D.29 – Structures at Risk to Moderate-High WUI Risk Index, Town of Vandemere**

| Occupancy    | Structures at Risk | Structure Value       | Estimated Content Value | Total Value            |
|--------------|--------------------|-----------------------|-------------------------|------------------------|
| Agriculture  | 0                  | \$0                   | \$0                     | \$0                    |
| Commercial   | 2                  | \$92,649.00           | \$92,649.00             | \$185,298.00           |
| Education    | 0                  | \$0                   | \$0                     | \$0                    |
| Government   | 4                  | \$348,299.00          | \$348,299.00            | \$696,598.00           |
| Industrial   | 1                  | \$79,723.00           | \$119,584.50            | \$199,307.50           |
| Religious    | 7                  | \$448,751.00          | \$448,751.00            | \$897,502.00           |
| Residential  | 151                | \$7,165,914.00        | \$3,582,957.00          | \$10,748,871.00        |
| <b>Total</b> | <b>165</b>         | <b>\$8,135,336.00</b> | <b>\$4,067,668.00</b>   | <b>\$12,203,004.00</b> |

Source: Southern Wildfire Risk Assessment

**Table D.30 - Critical Facilities Exposed to Wildfire, Unincorporated Pamlico County**

| Type                     | Critical Facility Count | Structure Value    |
|--------------------------|-------------------------|--------------------|
| Communications           | 0                       | \$0                |
| Energy                   | 0                       | \$0                |
| Food, Hydration, Shelter | 1                       | \$0                |
| Hazardous Materials      | 0                       | \$0                |
| Health and Medical       | 3                       | \$281,582          |
| Safety and Security      | 3                       | \$578,640          |
| Transportation           | 0                       | \$0                |
| Water Systems            | 5                       | \$1,306,874        |
| <b>Total</b>             | <b>12</b>               | <b>\$2,167,096</b> |

Source: Southern Wildfire Risk Assessment

**Table D.31 - Critical Facilities Exposed to Wildfire, Town of Alliance**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 0                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 4                       | \$202,522        |
| Safety and Security      | 0                       | \$0              |
| Transportation           | 0                       | \$0              |
| Water Systems            | 0                       | \$0              |
| <b>Total</b>             | <b>4</b>                | <b>\$202,522</b> |

Source: Southern Wildfire Risk Assessment

**Table D.32 - Critical Facilities Exposed to Wildfire, Town of Arapahoe**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 1                       | \$86,136         |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | \$0              |
| Safety and Security      | 2                       | \$106,590        |
| Transportation           | 0                       | \$0              |
| Water Systems            | 0                       | \$0              |
| <b>Total</b>             | <b>3</b>                | <b>\$192,726</b> |

Source: Southern Wildfire Risk Assessment



**Table D.33 – Critical Facilities Exposed to Wildfire, Town of Bayboro**

| Type                     | Critical Facility Count | Structure Value     |
|--------------------------|-------------------------|---------------------|
| Communications           | 0                       | \$0                 |
| Energy                   | 0                       | \$0                 |
| Food, Hydration, Shelter | 1                       | \$22,050,231        |
| Hazardous Materials      | 0                       | \$0                 |
| Health and Medical       | 1                       | \$312,390           |
| Safety and Security      | 3                       | \$9,495,311         |
| Transportation           | 0                       | \$0                 |
| Water Systems            | 1                       | \$1,288             |
| <b>Total</b>             | <b>6</b>                | <b>\$31,859,220</b> |

Source: Southern Wildfire Risk Assessment

**Table D.34 – Critical Facilities Exposed to Wildfire, Town of Grantsboro**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 1                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 3                       | \$614           |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 0                       | \$0             |
| <b>Total</b>             | <b>4</b>                | <b>\$614</b>    |

Source: Southern Wildfire Risk Assessment

**Table D.35 – Critical Facilities Exposed to Wildfire, Town of Mesic**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 0                       | \$0             |
| <b>Total</b>             | <b>0</b>                | <b>\$0</b>      |

Source: Southern Wildfire Risk Assessment

**Table D.36 – Critical Facilities Exposed to Wildfire, Town of Minnesott Beach**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 0                       | \$0             |
| <b>Total</b>             | <b>0</b>                | <b>\$0</b>      |

Source: Southern Wildfire Risk Assessment

**Table D.37 – Critical Facilities Exposed to Wildfire, Town of Oriental**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 0                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | \$0              |
| Safety and Security      | 1                       | \$209,027        |
| Transportation           | 0                       | \$0              |
| Water Systems            | 2                       | \$177,274        |
| <b>Total</b>             | <b>3</b>                | <b>\$386,301</b> |

Source: Southern Wildfire Risk Assessment

**Table D.38 – Critical Facilities Exposed to Wildfire, Town of Stonewall**

| Type                     | Critical Facility Count | Structure Value |
|--------------------------|-------------------------|-----------------|
| Communications           | 0                       | \$0             |
| Energy                   | 0                       | \$0             |
| Food, Hydration, Shelter | 0                       | \$0             |
| Hazardous Materials      | 0                       | \$0             |
| Health and Medical       | 0                       | \$0             |
| Safety and Security      | 0                       | \$0             |
| Transportation           | 0                       | \$0             |
| Water Systems            | 0                       | \$0             |
| <b>Total</b>             | <b>0</b>                | <b>\$0</b>      |

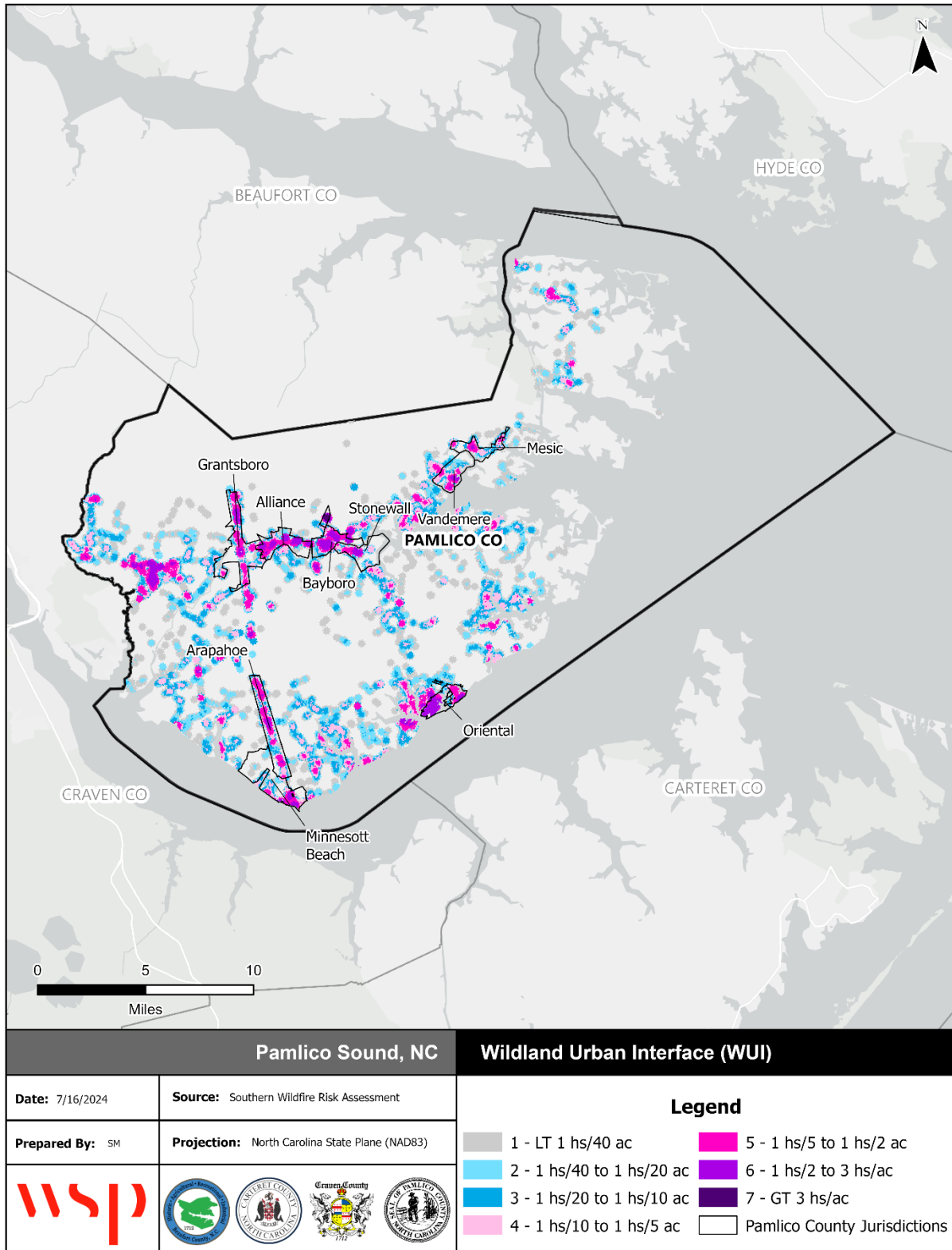
Source: Southern Wildfire Risk Assessment

**Table D.39 – Critical Facilities Exposed to Wildfire, Town of Vandemere**

| Type                     | Critical Facility Count | Structure Value  |
|--------------------------|-------------------------|------------------|
| Communications           | 0                       | \$0              |
| Energy                   | 0                       | \$0              |
| Food, Hydration, Shelter | 0                       | \$0              |
| Hazardous Materials      | 0                       | \$0              |
| Health and Medical       | 0                       | 40               |
| Safety and Security      | 1                       | \$220,270        |
| Transportation           | 0                       | \$0              |
| Water Systems            | 0                       | \$0              |
| <b>Total</b>             | <b>1</b>                | <b>\$220,270</b> |

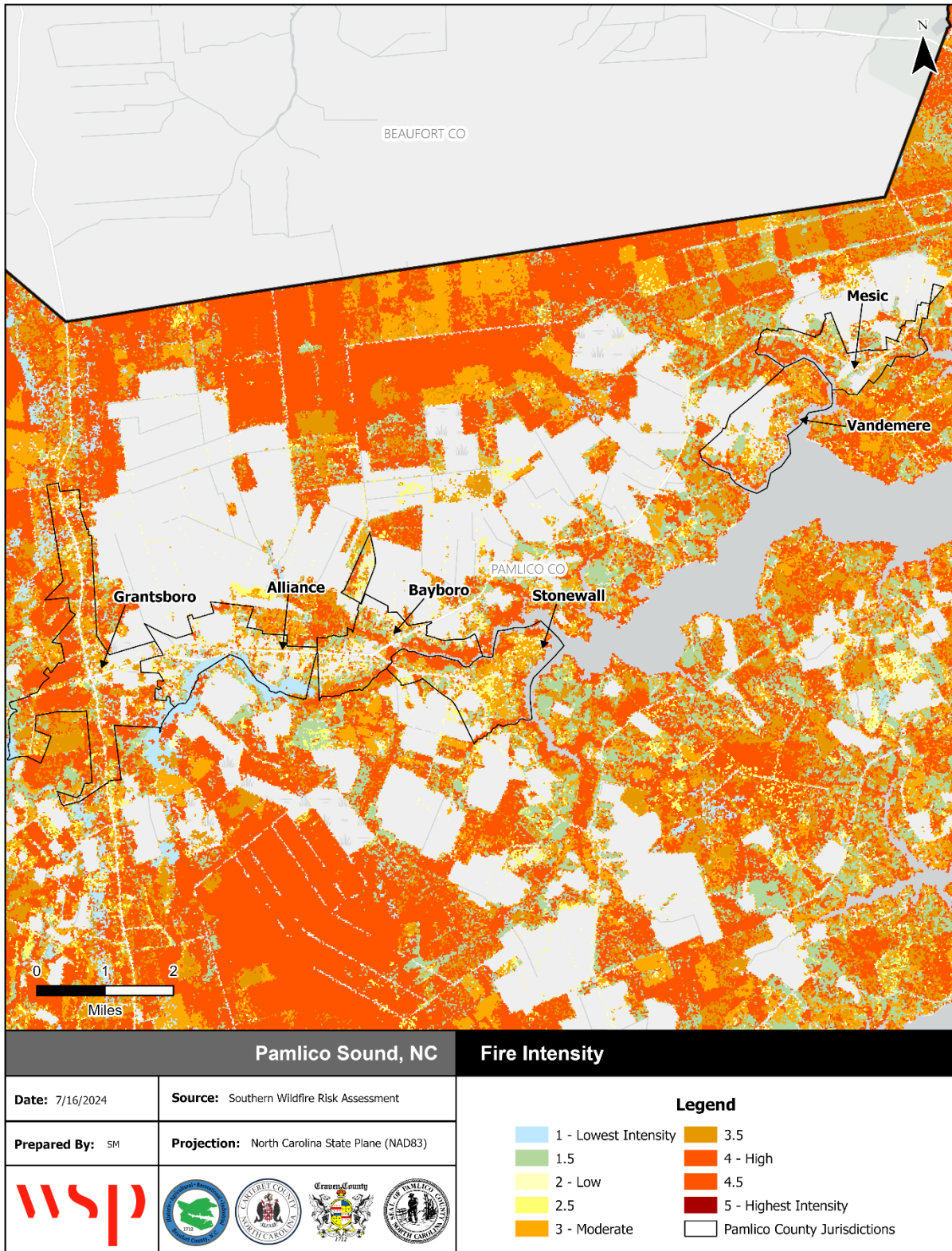
Source: Southern Wildfire Risk Assessment

Figure D.31 – Wildland Urban Interface, Pamlico County



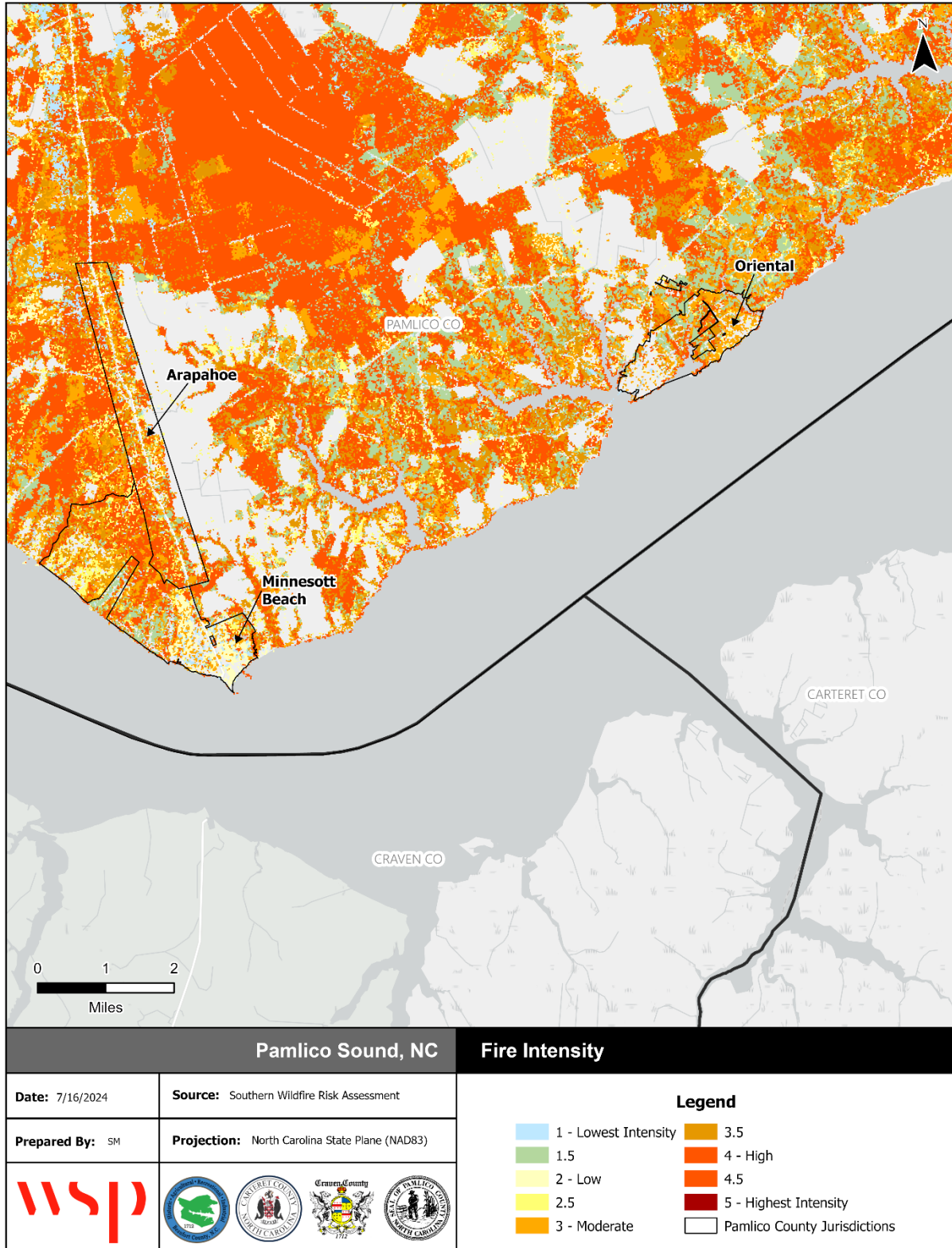
Source: Southern Wildfire Risk Assessment

Figure D.32 - Fire Intensity Scale, Pamlico County (Detail 1)



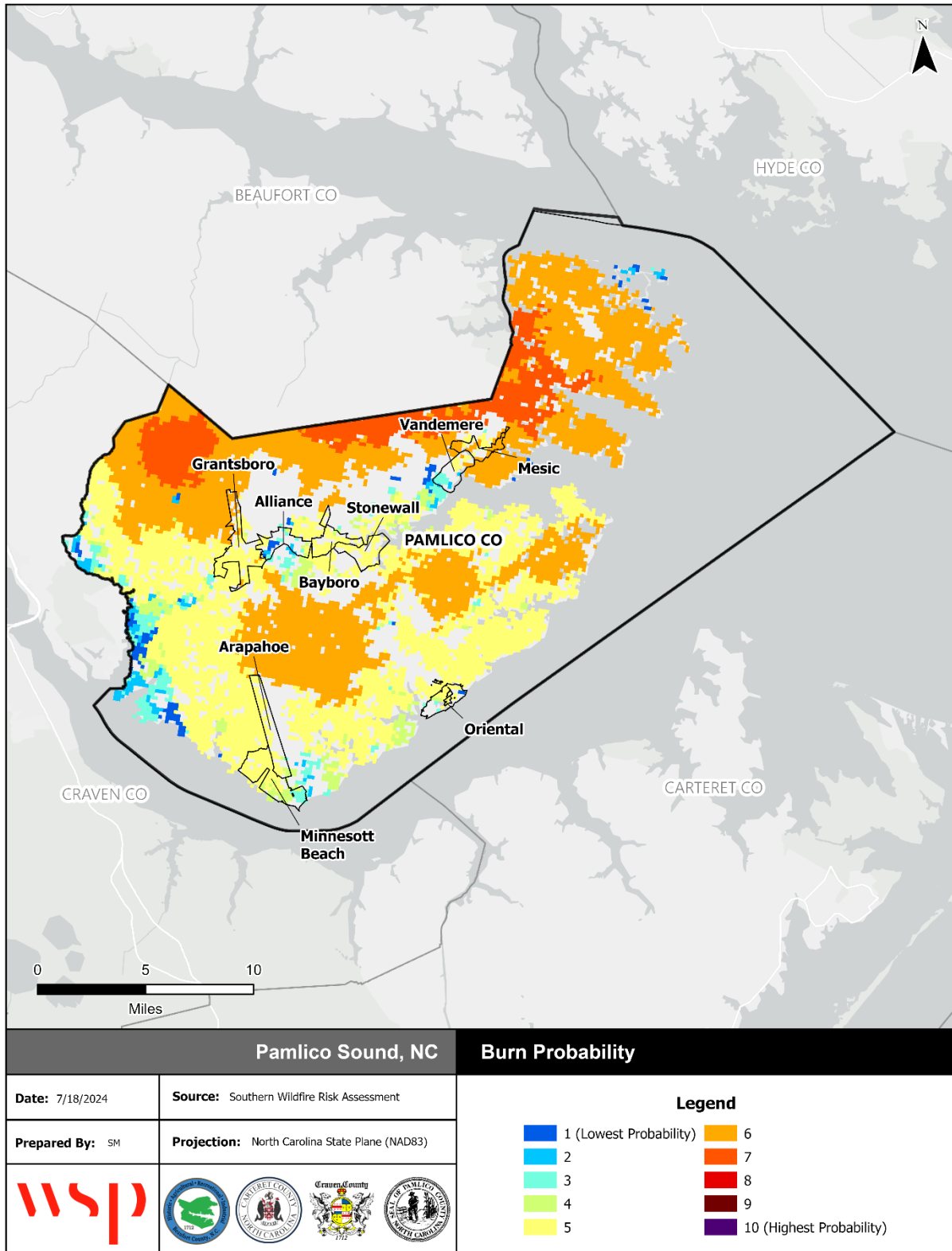
Source: Southern Wildfire Risk Assessment

Figure D.33 - Fire Intensity Scale, Pamlico County (Detail 2)



Source: Southern Wildfire Risk Assessment

Figure D.34 - Burn Probability, Pamlico County



Source: Southern Wildfire Risk Assessment

### D.3 MITIGATION STRATEGY

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/ Explanation  |
|----------|---|---|---|----------|------------------|----------|--|----------------|---------------------------|-------------------------|---------------|--|
| P1       | In the event of a substantial flooding event, or other natural hazard occurrence, perform damage assessments in coordination with NCEM. These assessments will assist the County in determining the extent of the damage caused by the respective disaster event. This data will be utilized as a tool for land use planning and future hazard mitigation plan updates and to gauge the effectiveness of the County's two-foot freeboard requirement. | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards   | Med      | 3.1              | PP       | <b>Pamlico County Emergency Services,</b><br>Pamlico County Administration,<br>Municipal Administrations | Staff Time     | GF, NCDPS                 | Ongoing - as necessary  | Carry Forward | Post-Florence there were gaps in collection of building level damage assessments. The County is working to improve capability and procedures for damage assessments and to track the resulting data. Outside partnerships and resources are needed. CAMA land use plan update currently underway.  |
| P2       | Continue to monitor drainage conditions throughout the County, in particular, issues associated with drainage ditches and agricultural runoff canals situated throughout the County. Once issues are identified, the County will work with municipal jurisdictions and State agencies to identify short- and long-term solutions to these issues.   | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Wildfire, Dam & Levee Failure | High     | 1.3              | NRP      | <b>Pamlico County Administration,</b><br>Pamlico County Emergency Services,<br>Municipal Administrations | Staff Time     | GF, NCDEQ, NCDOT          | Ongoing - In Process    | Carry Forward | Living shoreline project at Whittaker Pointe in Oriental has been completed. Water and Soil Department has received grants and is working on drainage maintenance across the county. Lowland and Hobucken still need ditch maintenance, especially along Hwy 304N. Current issues cause roadway flooding, which affects access to a Coast Guard station that responds to Pamlico Sound. Coastal Dynamics Design Lab is working with Pamlico County. CDDL has done a hydraulics study of the county and completing a Flood Print evaluation of flood vulnerability in the County and opportunities for mitigation, including living shorelines. |



| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost | Potential Funding Sources               | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|---|----------|------------------|----------|---|----------------|---|-------------------------|---------------|--|
| P3       | Continue to proactively seek grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLP's) and other high-risk properties from future flooding events. The County will maintain a list of RLP's, and on an annual basis, will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Pamlico County will assist all municipal jurisdictions in working through the structural mitigation grant funding process.   | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure                         | Med      | 3.1              | PP       | <b>Pamlico County Planning Department,</b><br>Pamlico County Board of Commissioners, Municipal Administrations, United Way, NC Volunteers Active in Disasters | Staff Time     | GF, NCDPS, HMGP, BRIC, UHMA, United Way | Ongoing - as needed     | Carry Forward | One acquisition completed in the last five years. Multiple elevations have been completed and a new round will begin soon; approximately 70 applicants are interested. The County is working with the Eastern Carolina COG to manage these projects. Pamlico County has coordinated with the Pamlico County Disaster Recovery Coalition (PCDRC) and partners to support post-event repairs to preserve structures and prepare them for elevation.  |
| P4       | Continue to educate County residents about flood-related health hazards, including the linkage between flooding (standing water) and the proliferation of mosquitos, as well as mold intrusion.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Dam & Levee Failure | Med      | 2.2              | PIO      | <b>Pamlico County Administration,</b><br>Pamlico County Emergency Services, Pamlico County Health Department, Municipal Administrations                       | Staff Time     | GF, NCDEQ, NCDPS                        | Ongoing - in process    | Carry Forward | Pamlico County Health Department maintains an educational program regarding mosquito abatement and provides some resources for abatement. Duke students worked with PCDRC to study health impacts of mold. PCDRC has held some workshops on mold remediation.  |
| P5       | Make a range of materials related to flood insurance, flood protection, floodplain management, information on floodplains, and how to find a qualified contractors/ realtors familiar with floodproofing and elevation techniques, available through various avenues including: <ul style="list-style-type: none"> <li>Placing materials in the local library</li> <li>Maintaining documents at the County Planning and Economic Development office</li> <li>Disseminating information to local contractors</li> <li>Distributing information to churches and other community-based organizations</li> <li>Establishing a means to distribute information to schoolchildren</li> </ul> | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Dam & Levee Failure | High     | 2.2              | PIO      | <b>Pamlico County Planning Department,</b><br>Pamlico County Board of Commissioners, Municipal Administrations  | Staff Time     | GF                                      | Ongoing - next 5 years  | Carry Forward | Grant funded Lead for NC Fellow in place in Pamlico County is supporting public information coordination. The County annually coordinates outreach before hurricane season. Pamlico County collaborates with other partner agencies and organizations to share relevant information & resources. The Town of Oriental independently provides educational information sessions on hazard mitigation and preparedness. Town of Vandemere created an Emergency Management board to share information from the County. |

| Action # | Description  | Applicable Jurisdictions  | Hazards Addressed  | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost | Potential Funding Sources     | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|--|---|--|----------|------------------|----------|--|----------------|-------------------------------|-------------------------|---------------|--|
| P6       | Review and update the County Emergency Operations Plan on an annual basis. This update will involve coordination with all municipalities to ensure that all emergency contacts are accurate and that all jurisdictions are adequately prepared.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards  | Med      | 3.2              | ES       | <b>Pamlico County Emergency Services,</b><br>Municipal Administrations                                       | Staff Time     | GF, NCDPS                     | Ongoing - as needed     | Carry Forward | The County EOP is reviewed annually and updated as necessary. The County is in the process of completing a full update to the EOP.   |
| P7       | Continue to work with the North Carolina Department of Environmental Quality to enforce standards outlined within the statewide stormwater management program. Currently, this program generally addresses stormwater management for projects disturbing an area equal to or greater than one acre. Additionally, the County will monitor localized flooding issues and, where feasible, address these issues through the installation of stormwater best management practices (BMPs). | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure  | Med      | 1.3              | P        | <b>Pamlico County Administration</b><br>Municipal Administration   | Staff Time     | GF, NCDPS, NCDEQ              | Ongoing - In Process    | Carry Forward | Pamlico County Inspections Department provides development review services throughout the County and works with NCDEQ to enforce state stormwater regulations.             |
| P8       | Develop a formal system and plan for evaluating and assessing the availability and effectiveness of all critical facilities outlined within this plan and acquire any additional equipment or backup power to ensure continuity of operations at these facilities. Pamlico County will coordinate with NCEM, Red Cross, Salvation Army, local animal shelters, local care homes etc., in making determinations relating to need and capacity.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Tornado & Thunderstorm, Severe Winter Weather, Excessive Heat, Earthquake, Wildfire, Dam & Levee Failure | High     | 2.1              | P        | <b>Pamlico County Emergency Services,</b><br>Pamlico County Board of Commissioners, Municipal Elected Boards | Staff Time     | GF, NCDPS, American Red Cross | 2 to 3 years            | Carry Forward | Pamlico County coordinates with partner organizations and all participating municipal jurisdictions on critical facility protection. New County EOC is under construction. |

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed     | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)   | Estimated Cost         | Potential Funding Sources    | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation   |
|----------|---|---|-----------------------|----------|------------------|----------|--|------------------------|------------------------------|-------------------------|---------------|--|
| P9       | Ensure that there is adequate capacity for snow and ice removal in the event of a major snowstorm. The County will work with the North Carolina Department of Transportation (NCDOT) and North Carolina Emergency Management (NCEM) to ensure that all resources necessary are available to carry out this effort. Additionally, the County will work closely with the County school system, as well as other entities, to make determinations regarding closures and delays. | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Severe Winter Weather | Med      | 1.1              | P        | <b>Pamlico County Emergency Services,</b> Municipal Administrations, NCDOT                                 | Staff Time             | GF, NCDPS, NCDOT             | Ongoing - In Process    | Carry Forward | Pamlico County and Towns do not own equipment for snow and ice removal but Emergency Management coordinates with NCDOT on road pre-treatment, road clearing, and communicating road safety to the public.        |
| P10      | Continue to maintain all development regulations, emergency and land use related plans, and applications for permits on the respective jurisdictions' website. This information will be maintained and updated as deemed necessary. If a local website does not exist, municipal jurisdictions will consider developing one through implementation of this plan.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards           | High     | 1.3              | PIO      | <b>Pamlico County Administration,</b> Municipal Administrations  | Staff Time/<br>\$3,500 | GF                           | 3 to 5 years            | Carry Forward | Pamlico County continues to maintain current plans and development regulations on the County website. Vandemere developed a website within the last year. Oriental and Grantsboro maintain town websites.        |
| P11      | Continue to coordinate annually with the NC Forest Service to address the threat of wildfire throughout the County. These efforts will involve posting of the daily fire risk present within the County on the County website daily. Additionally, the County will distribute and make information available regarding County methods for mitigating fire hazards.  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Wildfire              | High     | 4.1              | PP       | <b>Pamlico County Emergency Services,</b> Pamlico County Board of Commissioners, Municipal Administrations | Staff Time             | GF, NC Forest Service, NCDPS | Other - Annually        | Carry Forward | NC Forest Service notifies the County of daily fire risk as well as controlled burns and other wildfire mitigation.  |
| P12      | Maintain reciprocal mutual aid agreements with all neighboring communities. Additionally, all jurisdictions will provide preventive maintenance efforts to ensure the fire hydrants and equipment are working properly.   | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards           | High     | 4.2              | ES       | <b>Pamlico County Emergency Services,</b> Municipal Administrations, Volunteer Fire Departments            | Staff Time             | GF, NCDPS                    | Ongoing - next 5 years  | Carry Forward | Pamlico County is part of the statewide mutual aid agreement and has mutual aid agreements with all municipalities and neighboring counties. Fire departments have mutual aid agreements with NC Forest Service. |

| Action # | Description   | Applicable Jurisdictions  | Hazards Addressed   | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold)  | Estimated Cost   | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|---|---|---|----------|------------------|----------|---|------------------|---------------------------|-------------------------|---------------|---|
| P13      | Maintain Debris Removal and Monitoring Services Contracts for post disaster response. These services should focus on preparing documentation necessary to ensure full reimbursement of cost associated with community cleanup and immediate infrastructure restoration. | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | All Hazards   | Med      | 1.1              | PP       | <b>Pamlico County Emergency Services,</b><br>Pamlico County Board of Commissioners, Municipal Administrations | To Be Determined | GF, NCDPS, FEMA           | Ongoing - As needed     | Carry Forward | Debris Removal and Monitoring Services Contracts are in place. A statewide agreement is underway.   |
| P14      | Maintain all property acquired through annual and post disaster mitigation funding as open space in perpetuity. Additionally, appropriate reuse strategies will be developed regarding this dedicated open space.   | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Flooding, Hurricanes & Coastal Hazards, Dam & Levee Failure | High     | 1.2              | PP       | <b>Pamlico County Administration,</b><br>Municipal Administrations  | To Be Determined | GF, NCDPS                 | Ongoing - in process    | Carry Forward | Pamlico County is coordinating with NC Department of Commerce's Creating Outdoor Recreational Economies program. Looking into creating a kayak trail, parks, natural habitat areas, and other passive recreation opportunities on preserved coastal open space properties. Derelict/abandoned structures present an ongoing risk but funding is needed to mitigate these buildings. |
| P15      | Create or Update Community Wildfire Protection Plans in each fire district  | Pamlico County, Alliance, Arapahoe, Bayboro, Grantsboro, Mesic, Minnesott Beach, Oriental, Stonewall, Vandemere | Wildfire  | Med      | 4.1              | P, PIO   | <b>Pamlico County Fire Departments,</b><br>NC Forest Service  | To Be Determined | Grant Funds               | 3-5 years               | New           |   |
| P16      | Encourage planting native vegetation to support infiltration, reduce runoff, and protect property and water quality. Provide resources from NC State Cooperative Extension to educate the public on the benefits of native plantings.                                   | Pamlico County  | Flooding, Hurricanes & Coastal Hazards                      | Med      | 2.2              | PIO      | <b>Pamlico County Administration,</b><br>NC State Cooperative Extension                                       | Staff Time       | GF                        | 1-2 years               | New           |   |
| P17      | Identify and equip a facility to serve as a new emergency shelter.  | Pamlico County  | All Hazards   | High     | 2.1              | ES, PP   | <b>Pamlico County Emergency Services</b>  | To Be Determined | GF, Grant Funds           | 3-5 years               | New           |   |
| P18      | Integrate hazard mitigation into land use planning.   | Pamlico County  | All Hazards   | Med      | 1.2, 1.3, 1.4    | P        | <b>Pamlico County Planning Department</b>   | Staff Time       | GF                        | 1-2 years               | New           | CAMA Land Use Plan update is currently underway.  |
| P19      | Develop a backup communications system in the event of cell tower failure.  | Pamlico County  | All Hazards   | High     | 4.2              | ES       | <b>Pamlico County Administration</b>  | To Be Determined | GF                        | 2-3 years               | New           |   |

| Action # | Description  | Applicable Jurisdictions | Hazards Addressed                      | Priority | Goal & Objective | Category | Lead/Participating Agencies (Lead in bold) | Estimated Cost             | Potential Funding Sources | Implementation Schedule | 2025 Status   | 2025 Status Comments/Explanation  |
|----------|--|--------------------------|--|----------|------------------|----------|--|----------------------------|---------------------------|-------------------------|---------------|---|
| OR1      | Annual outreach to residents for hurricane season preparations, quarterly meetings with Church reps to disseminate prep materials, instructions for before, during, and following disasters. Keep seasonal information in Town Hall and disseminate to businesses. Distribute through mailings (newsletter), social media, traditional media materials. Disseminate info on elevation for new construction, restrict building in floodplain. | Oriental                 | Flooding, Hurricanes & Coastal Hazards | High     | 2.2              | PIO      | <b>Town of Oriental Administration</b>     | \$2,000                    | General fund              | Ongoing annually        | Carry Forward | Annual Outreach done May 2024 for Hurricane Season 2024 with representatives from NOAA, NWS, churches. Hurricane packages updated and distributed in same time frame. Social media used extensively. New TextMyGov service enabled for emergency messaging. All building elevation information distributed with permitting paperwork. |
| OR2      | Annual outreach to realtors to make sure most updated building restrictions in GMO are disseminated to all potential buyers.   | Oriental                 | Flooding, Hurricanes & Coastal Hazards | High     | 2.2              | PIO      | <b>Town of Oriental Administration</b>     | \$100                      | General fund              | Ongoing annually        | Carry Forward | Monthly updates on any changes to GMO distributed through website, social media, news outlets   |
| OR3      | Annual review by Planning Board and Town Board and make changes to GMO that prevent recurrent flooding and enhance drainage capacity.  | Oriental                 | Flooding, Hurricanes & Coastal Hazards | High     | 1.3              | P        | <b>Town of Oriental Administration</b>     | \$500                      | General fund              | Ongoing annually        | Carry Forward | Priority drainage through budgeting process in order of severity. Substantial dedicated funds annually.   |
| OR4      | Annual ditch clearing and assessment of town-maintained open and covered culverts. Annual education of residents/businesses about the flow of drainage (culverts not there to take water away, but to settle solids), Priority list established and reviewed for clearing/blockage of street culverts, education about ownership of land vs. rights-of-way, necessity of clearing residentially maintained ditches.                          | Oriental                 | Flooding, Hurricanes & Coastal Hazards | High     | 1.3              | PP       | <b>Town of Oriental Administration</b>     | \$16,000-\$20,000 annually | General fund              | Ongoing annually        | Carry Forward | Residential education, drainage plan, green waste disposal to assist in removing vegetation- funded at \$20,000.  |
| VM1      | Annual outreach to residents for hurricane season preparations. Distribute through website, newsletter, social media, and/or traditional media materials.  | Vandemere                | Flooding, Hurricanes & Coastal Hazards | High     | 2.2              | PIO      | <b>Town of Vandemere Administration</b>    | \$2,000                    | General fund              | Ongoing annually        | New           |   |

# APPENDIX A PLAN REVIEW TOOL

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# Local Mitigation Plan Review Tool

## Cover Page

The Local Mitigation Plan Review Tool (PRT) demonstrates how the local mitigation plan meets the regulation in 44 CFR § 201.6 and offers states and FEMA Mitigation Planners an opportunity to provide feedback to the local governments, including special districts.

1. The Multi-Jurisdictional Summary Sheet is a worksheet that is used to document how each jurisdiction met the requirements of the plan elements (Planning Process; Risk Assessment; Mitigation Strategy; Plan Maintenance; Plan Update; and Plan Adoption).
2. The Plan Review Checklist summarizes FEMA’s evaluation of whether the plan has addressed all requirements.

*For greater clarification of the elements in the Plan Review Checklist, please see Section 4 of this guide. Definitions of the terms and phrases used in the PRT can be found in Appendix E of this guide.*

| Plan Information              |  |
|-------------------------------|--|
| Jurisdiction(s)               | Beaufort County, Carteret County, Craven County, and Pamlico County and incorporated jurisdictions |
| Title of Plan                 | Pamlico Sound Regional Hazard Mitigation Plan  |
| New Plan or Update            | Update   |
| Single- or Multi-Jurisdiction | Multi-jurisdiction   |
| Date of Plan                  | 2/14/2025  |
| Local Point of Contact        |  |
| Title                         | David Stroud   |
| Agency                        | WSP  |
| Address                       | 4021 Stirrup Creek Drive, Suite 100, Durham, NC 27703  |
| Phone Number                  | 919-325-6497   |
| Email                         | david.stroud@wsp.com   |

| <b>Additional Point of Contact</b> |  |
|------------------------------------|--|
| <b>Title</b>                       |  |
| <b>Agency</b>                      |  |
| <b>Address</b>                     |  |
| <b>Phone Number</b>                |  |
| <b>Email</b>                       |  |

| <b>Review Information</b>               |                                  |
|---|----------------------------------|
| <b>State Review</b>                     |                                  |
| <b>State Reviewer(s) and Title</b>      | Click or tap here to enter text. |
| <b>State Review Date</b>                | Click or tap to enter a date.    |
| <b>FEMA Review</b>                      |                                  |
| <b>FEMA Reviewer(s) and Title</b>       | Click or tap here to enter text. |
| <b>Date Received in FEMA Region</b>     | Click or tap to enter a date.    |
| <b>Plan Not Approved</b>                | Click or tap to enter a date.    |
| <b>Plan Approvable Pending Adoption</b> | Click or tap to enter a date.    |
| <b>Plan Approved</b>                    | Click or tap to enter a date.    |



# Multi-Jurisdictional Summary Sheet

| #  | Jurisdiction Name | Requirements Met (Y/N) |                    |                        |                     |                |                  |                       |
|----|-------------------|------------------------|--------------------|------------------------|---------------------|----------------|------------------|-----------------------|
|    |                   | A. Planning Process    | B. Risk Assessment | C. Mitigation Strategy | D. Plan Maintenance | E. Plan Update | F. Plan Adoption | G. State Requirements |
| 1  | Beaufort County   |                        |                    |                        |                     |                |                  |                       |
| 2  | Aurora            |                        |                    |                        |                     |                |                  |                       |
| 3  | Bath              |                        |                    |                        |                     |                |                  |                       |
| 4  | Belhaven          |                        |                    |                        |                     |                |                  |                       |
| 5  | Chocowinity       |                        |                    |                        |                     |                |                  |                       |
| 6  | Pantego           |                        |                    |                        |                     |                |                  |                       |
| 7  | Washington        |                        |                    |                        |                     |                |                  |                       |
| 8  | Washington Park   |                        |                    |                        |                     |                |                  |                       |
| 9  | Carteret County   |                        |                    |                        |                     |                |                  |                       |
| 10 | Atlantic Beach    |                        |                    |                        |                     |                |                  |                       |
| 11 | Beaufort          |                        |                    |                        |                     |                |                  |                       |
| 12 | Bogue             |                        |                    |                        |                     |                |                  |                       |
| 13 | Cape Carteret     |                        |                    |                        |                     |                |                  |                       |
| 14 | Cedar Point       |                        |                    |                        |                     |                |                  |                       |
| 15 | Emerald Isle      |                        |                    |                        |                     |                |                  |                       |
| 16 | Indian Beach      |                        |                    |                        |                     |                |                  |                       |
| 17 | Morehead City     |                        |                    |                        |                     |                |                  |                       |
| 18 | Newport           |                        |                    |                        |                     |                |                  |                       |
| 19 | Peletier          |                        |                    |                        |                     |                |                  |                       |

| #  | Jurisdiction Name | Requirements Met (Y/N) |                    |                        |                     |                |                  |                       |
|----|-------------------|------------------------|--------------------|------------------------|---------------------|----------------|------------------|-----------------------|
|    |                   | A. Planning Process    | B. Risk Assessment | C. Mitigation Strategy | D. Plan Maintenance | E. Plan Update | F. Plan Adoption | G. State Requirements |
| 20 | Pine Knoll Shores |                        |                    |                        |                     |                |                  |                       |
| 21 | Craven County     |                        |                    |                        |                     |                |                  |                       |
| 22 | Bridgeton         |                        |                    |                        |                     |                |                  |                       |
| 23 | Cove City         |                        |                    |                        |                     |                |                  |                       |
| 24 | Dover             |                        |                    |                        |                     |                |                  |                       |
| 25 | Havelock          |                        |                    |                        |                     |                |                  |                       |
| 26 | New Bern          |                        |                    |                        |                     |                |                  |                       |
| 27 | River Bend        |                        |                    |                        |                     |                |                  |                       |
| 28 | Trent Woods       |                        |                    |                        |                     |                |                  |                       |
| 29 | Vanceboro         |                        |                    |                        |                     |                |                  |                       |
| 30 | Pamlico County    |                        |                    |                        |                     |                |                  |                       |
| 31 | Alliance          |                        |                    |                        |                     |                |                  |                       |
| 32 | Arapahoe          |                        |                    |                        |                     |                |                  |                       |
| 33 | Bayboro           |                        |                    |                        |                     |                |                  |                       |
| 34 | Grantsboro        |                        |                    |                        |                     |                |                  |                       |
| 35 | Mesic             |                        |                    |                        |                     |                |                  |                       |
| 36 | Minnesott Beach   |                        |                    |                        |                     |                |                  |                       |
| 37 | Oriental          |                        |                    |                        |                     |                |                  |                       |
| 38 | Stonewall         |                        |                    |                        |                     |                |                  |                       |
| 39 | Vandemere         |                        |                    |                        |                     |                |                  |                       |

# Plan Review Checklist

The Plan Review Checklist is completed by FEMA. States and local governments are encouraged, but not required, to use the PRT as a checklist to ensure all requirements have been met prior to submitting the plan for review and approval. The purpose of the checklist is to identify the location of relevant or applicable content in the plan by element/sub-element and to determine if each requirement has been “met” or “not met.” FEMA completes the “required revisions” summary at the bottom of each element to clearly explain the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is “not met.” Sub-elements in each summary should be referenced using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each element and sub-element are described in detail in Section 4: Local Plan Requirements of this guide.

Plan updates must include information from the current planning process.

If some elements of the plan do not require an update, due to minimal or no changes between updates, the plan must document the reasons for that.

Multi-jurisdictional elements must cover information unique to all participating jurisdictions.

## Element A: Planning Process

| Element A Requirements  | Location in Plan<br>(section and/or page number)  | Met /<br>Not Met |
|---|---|------------------|
| <b>A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))</b>   |   |                  |
| A1-a. Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan’s development, as well as who was involved?   | Section 2, p.7-20;<br>Appendix B  | Choose an item.  |
| A1-b. Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process?  | Section 1.3, p.2;<br>Section 2.3-2.9, p.7-25;<br>Appendix B   | Choose an item.  |
| <b>A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))</b> |   |                  |
| A2-a. Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?  | Section 2.4, p.11-17;<br>Section 2.5, p.17-18;<br>Section 2.7-2.8, p.19-20, Appendix B, p.B.66-B.68 | Choose an item.  |

| Element A Requirements   | Location in Plan<br>(section and/or page number)     | Met /<br>Not Met |
|--|--|------------------|
| <b>A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))</b>                       |  |                  |
| A3-a. Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?  | Section 2.4-2.7, p.10-20;<br>Appendix B, p.B.28-B.65 | Choose an item.  |
| <b>A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))</b>                                    |  |                  |
| A4-a. Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document? | Section 2.3.1, p.9                                   | Choose an item.  |
| <b>ELEMENT A REQUIRED REVISIONS</b>  |  |                  |
| Required Revision:<br><a href="#">Click or tap here to enter text.</a>   |  |                  |

## Element B: Risk Assessment

| Element B Requirements  | Location in Plan<br>(section and/or page number)   | Met /<br>Not Met |
|---|--|------------------|
| <b>B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))</b> |  |                  |
| B1-a. Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?   | Section 4.2, p.89-93,<br>Section 4.5, p.109-315 (Hazard Description, Location, Extent, Hazard Summary by Jurisdiction) | Choose an item.  |
| B1-b. Does the plan include information on the location of each identified hazard?  | Section 4.5, p.109-315 (“Location” subheadings)  | Choose an item.  |

| Element B Requirements   | Location in Plan<br>(section and/or page number)   | Met /<br>Not Met |
|--|--|------------------|
| B1-c. Does the plan describe the extent for each identified hazard?  | Section 4.5, p.109-315 (“Extent” subheadings)  | Choose an item.  |
| B1-d. Does the plan include the history of previous hazard events for each identified hazard?  | Section 4.5, p.109-315 (“Historical Occurrences” subheadings)  | Choose an item.  |
| B1-e. Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards? | Section 4.5, p.109-315 (“Probability of Future Occurrence” subheadings)  | Choose an item.  |
| B1-f. For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?  | Section 4.5, p.109-315 (“Hazard Summary by Jurisdiction” subheadings); Annexes, p.425-724  | Choose an item.  |
| <b>B2. Does the plan include a summary of the jurisdiction’s vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))</b>  |  |                  |
| B2-a. Does the plan provide an overall summary of each jurisdiction’s vulnerability to the identified hazards?   | Section 4.3, p.94-97; Section 4.4, p.98-108; Section 4.5, p.109-315 (“Vulnerability Assessment” subheadings); Annexes, p.425-724 | Choose an item.  |
| B2-b. For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?  | Section 4.5, p.109-315; Annexes, p.425-724   | Choose an item.  |
| B2-c. Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?  | Section 4.5.4, p.198-199   | Choose an item.  |

| Element B Requirements                                 | Location in Plan<br>(section and/or page<br>number) | Met /<br>Not Met |
|--|---|------------------|
| <b>ELEMENT B REQUIRED REVISIONS</b>                    |   |                  |
| Required Revision:<br>Click or tap here to enter text. |   |                  |

## Element C: Mitigation Strategy

| Element C Requirements  | Location in Plan<br>(section and/or page<br>number) | Met /<br>Not Met |
|---|---|------------------|
| <b>C1. Does the plan document each participant’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))</b>   |   |                  |
| C1-a. Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?  | Section 5, p.318-354                                | Choose an item.  |
| C1-b. Does the plan describe each participant’s ability to expand and improve the identified capabilities to achieve mitigation?  | Section 5, p.318-354                                | Choose an item.  |
| <b>C2. Does the plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))</b>  |   |                  |
| C2-a. Does the plan contain a narrative description or a table/list of their participation activities?  | Section 5.3.1.3, p.326-354, Table 5.2, Table 5.3    | Choose an item.  |
| <b>C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))</b>   |   |                  |
| C3-a. Does the plan include goals to reduce the risk from the hazards identified in the plan?   | Section 6.1, p.355-356                              | Choose an item.  |
| <b>C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))</b> |   |                  |
| C4-a. Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?  | Section 7, p.359-389; Appendix C                    | Choose an item.  |

| Element C Requirements   | Location in Plan<br>(section and/or page number) | Met /<br>Not Met |
|--|--|------------------|
| C4-b. Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?  | Section 7, p.359-389                             | Choose an item.  |
| <b>C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))</b> |  |                  |
| C5-a. Does the plan describe the criteria used for prioritizing actions?   | Section 6.2, p. 357-358                          | Choose an item.  |
| C5-b. Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?  | Section 7, p.359-389                             | Choose an item.  |
| <b>ELEMENT C REQUIRED REVISIONS</b>  |  |                  |
| Required Revision:<br>Click or tap here to enter text.   |  |                  |

## Element D: Plan Maintenance

| Element D Requirements   | Location in Plan<br>(section and/or page number) | Met /<br>Not Met |
|--|--|------------------|
| <b>D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))</b>   |  |                  |
| D1-a. Does the plan describe how communities will continue to seek future public participation after the plan has been approved?   | Section 8.3, p.396-397                           | Choose an item.  |
| <b>D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))</b>  |  |                  |
| D2-a. Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?                          | Section 8.2, p.394-396                           | Choose an item.  |
| D2-b. Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible. | Section 8.2, p.394-396                           | Choose an item.  |

| Element D Requirements  | Location in Plan<br>(section and/or page number)   | Met /<br>Not Met |
|---|--|------------------|
| D2-c. Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?   | Section 8.2, p.394-396                             | Choose an item.  |
| <b>D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))</b> |  |                  |
| D3-a. Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?  | Section 8.1, p. 390-394;<br>Section 8.2, p.394-396 | Choose an item.  |
| D3-b. Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?   | Section 8.1, p. 390-394;<br>Section 8.2, p.394-396 | Choose an item.  |
| D3-c. For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?  | Section 8.1, p. 390-394;<br>Section 8.2, p.394-396 | Choose an item.  |
| <b>ELEMENT D REQUIRED REVISIONS</b>   |  |                  |
| Required Revision:<br>Click or tap here to enter text.  |  |                  |

## Element E: Plan Update

| Element E Requirements   | Location in Plan<br>(section and/or page number)                          | Met /<br>Not Met |
|--|---|------------------|
| <b>E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))</b>  |   |                  |
| E1-a. Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved? | Section 3.2-3.5, p.32-87 ("Land Development Trends" sections)             | Choose an item.  |
| <b>E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))</b>  |   |                  |
| E2-a. Does the plan describe how it was revised due to changes in community priorities?  | Section 2.1-2.2, p.5-7;<br>Section 6, p.355-358,<br>Section 7, p. 359-389 | Choose an item.  |



| Element E Requirements   | Location in Plan<br>(section and/or page number) | Met /<br>Not Met |
|--|--|------------------|
| E2-b. Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?               | Section 7, p. 359-389;<br>Section 2.9, p.20-25   | Choose an item.  |
| E2-c. Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms? | Section 8.1, p.390-394                           | Choose an item.  |
| <b>ELEMENT E REQUIRED REVISIONS</b>  |  |                  |
| Required Revision:<br>Click or tap here to enter text.   |  |                  |

## Element F: Plan Adoption

| Element F Requirements  | Location in Plan<br>(section and/or page number) | Met /<br>Not Met |
|---|--|------------------|
| <b>F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))</b>   |  |                  |
| F1-a. Does the participant include documentation of adoption?   | Section 9, p.397-438                             | Choose an item.  |
| <b>F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))</b> |  |                  |
| F2-a. Did each participant adopt the plan and provide documentation of that adoption?   | Section 9, p.397-438                             | Choose an item.  |
| <b>ELEMENT F REQUIRED REVISIONS</b>   |  |                  |
| Required Revision:<br>Click or tap here to enter text.  |  |                  |

## Element G: High Hazard Potential Dams (Optional)

| HHPD Requirements  | Location in Plan<br>(section and/or page number) | Met /<br>Not Met |
|--|--|------------------|
| <b>HHPD1. Did the plan describe the incorporation of existing plans, studies, reports and technical information for HHPDs?</b> |  |                  |
| HHPD1-a. Does the plan describe how the local government worked with local dam owners and/or the state dam safety agency?      | N/A  | Choose an item.  |

| HHPD Requirements  | Location in Plan<br>(section and/or page number) | Met /<br>Not Met |
|--|--|------------------|
| HHPD1-b. Does the plan incorporate information shared by the state and/or local dam owners?  | N/A  | Choose an item.  |
| <b>HHPD2. Did the plan address HHPDs in the risk assessment?</b>   |  |                  |
| HHPD2-a. Does the plan describe the risks and vulnerabilities to and from HHPDs?   | N/A  | Choose an item.  |
| HHPD2-b. Does the plan document the limitations and describe how to address deficiencies?  | N/A  | Choose an item.  |
| <b>HHPD3. Did the plan include mitigation goals to reduce long-term vulnerabilities from HHPDs?</b>  |  |                  |
| HHPD3-a. Does the plan address how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies?                                | N/A  | Choose an item.  |
| HHPD3-b. Does the plan link proposed actions to reducing long-term vulnerabilities that are consistent with its goals?   | N/A  | Choose an item.  |
| <b>HHPD4-a. Did the plan include actions that address HHPDs and prioritize mitigation actions to reduce vulnerabilities from HHPDs?</b>                                    |  |                  |
| HHPD4-a. Does the plan describe specific actions to address HHPDs?   | N/A  | Choose an item.  |
| HHPD4-b. Does the plan describe the criteria used to prioritize actions related to HHPDs?  | N/A  | Choose an item.  |
| HHPD4-c. Does the plan identify the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs? | N/A  | Choose an item.  |
| <b>HHPD Required Revisions</b>   |  |                  |
| Required Revision:<br>Click or tap here to enter text.   |  |                  |

### Element H: Additional State Requirements

| Element H Requirements   | Location in Plan<br>(section and/or page<br>number) | Met /<br>Not Met       |
|--|---|------------------------|
| <p><b>This space is for the State to include additional requirements</b></p> |   |                        |
| <p>Click or tap here to enter text.</p>                                      | <p>Click or tap here to enter text.</p>             | <p>Choose an item.</p> |

## Plan Assessment

These comments can be used to help guide your annual/regularly scheduled updates and the next plan update.

### Element A. Planning Process

#### Strengths

- [insert comments]

#### Opportunities for Improvement

- [insert comments]

### Element B. Risk Assessment

#### Strengths

- [insert comments]

#### Opportunities for Improvement

- [insert comments]

### Element C. Mitigation Strategy

#### Strengths

- [insert comments]

#### Opportunities for Improvement

- [insert comments]

### Element D. Plan Maintenance

#### Strengths

- [insert comments]

#### Opportunities for Improvement

- [insert comments]

### Element E. Plan Update

#### Strengths

- [insert comments]

#### Opportunities for Improvement

- [insert comments]

## Element G. HHPD Requirements (Optional)

### Strengths

- [insert comments]

### Opportunities for Improvement

- [insert comments]

## Element H. Additional State Requirements (Optional)

### Strengths

- [insert comments]

### Opportunities for Improvement

- [insert comments]

# APPENDIX B PLANNING PROCESS DOCUMENTATION

## B.1 PLANNING STEP 1: ORGANIZE TO PREPARE THE PLAN

**Table B.1 - HMPC Meeting Topics, Dates, and Locations**

| Meeting Title                     | Meeting Topic   | Meeting Date     | Meeting Location   |
|-----------------------------------|---|------------------|--|
| HMPC Mtg. #1<br>- Project Kickoff | <ol style="list-style-type: none"> <li>1) Introduction to DMA and CRS requirements and the planning process</li> <li>2) Review of HMPC responsibilities and the project schedule</li> </ol>   | June 12, 2024    | Craven County Cooperative Extension Building, 300 Industrial Dr, New Bern NC 28562 & Microsoft Teams |
| HMPC Mtg. #2                      | <ol style="list-style-type: none"> <li>1) Review the draft Hazard Identification &amp; Risk Assessment</li> <li>2) Discuss updates to local capabilities</li> <li>3) Review problem statements and mitigation action ideas</li> </ol> | October 29, 2024 | Crystal Coast Civic Center, 3505 Arendell Street, Morehead City, NC 28557 & Microsoft Teams          |
| HMPC Mtg. #3                      | <ol style="list-style-type: none"> <li>1) Review draft goals and objectives</li> <li>2) Review mitigation alternatives and draft mitigation strategies</li> </ol>   | December 4, 2024 | Microsoft Teams  |
| HMPC Mtg. #4                      | <ol style="list-style-type: none"> <li>1) Review the draft Hazard Mitigation Plan</li> <li>2) Solicit comments and feedback</li> </ol>  | January 28, 2025 | Microsoft Teams  |

Note: All HMPC Meetings were open to the public.

Meeting agendas, minutes, and sign in sheets are provided on the following pages. Presentations referenced in the minutes can be provided upon request.

## HMPC MEETING MINUTES AND ATTENDANCE RECORDS

### HMPC MEETING 1: JUNE 12, 2024

**Pamlico Sound 2025 Regional Hazard Mitigation Plan Update  
Stakeholder Kickoff Meeting  
6/12/24, 10 AM – 11 AM**

**[Draft Notes]**

**[Online Participants]** – Abigail Moore, Annie Bunnell, Beth Bucksot, Carolyn, Charlie Rocci, Charles Tripp, Chris Crew, Chris Newkirk, Dan Allen, David Stroud, Drew Kennedy, Elisabeth Webster, Gregg Hartman, Gene Foxworth, Jason Baker, Jennifer Ansell, John Nevel, John Rouse, Jimmie Beckom, Judy Thaanum, Julie Shambaugh, Lynn Davis Belhaven, Melanie Dixon, Melissa Beacham, Mike Dail, Paul Payne, Sandi Watkins, Sarah Spiegler, Scott Harvey, Sharron Wilson, Tim White, Will Sanderson

**[In-person Participants]** – See sign-in sheet

1. **PLEASE NOTE:** minutes recording delayed due to last-minute meeting logistics needs
2. [Nathan Slaughter, presenting] Purpose of Update – Compliance and Funding
  - a. Ensure compliance with federal/state requirements (DMA, NC GS 166A); we are 15+ years into the hazard planning processes
  - b. Maintain eligibility for disaster mitigation funding and assistance programs – HMGP, FMA, BRIC, CRS; many communities in this plan update are CRS communities
3. Purpose of Update – Ensure Preparedness
  - a. Ensure better preparedness to better protect lives and property and mitigate disasters
4. Plan Update Process: Step 1 Organize Resources
  - a. Planning for public involvement
  - b. Coordinating with departments/agencies
  - c. Finalizing a list of HMPC stakeholders for involvement; need to consider underserved and socially vulnerable populations for greater participation in update process
5. Plan Update Process: Step 2: Risk Assessment
  - a. Hazard ID – what can happen here?
  - b. Vulnerability assessment – what will be impacted?
  - c. Capability assessment – how prepared are we?
6. Previously Identified Hazards (2020)
  - a. PRI scores and organization by high, moderate, and low risk
  - b. [QUESTION]: are you going to email this information to everybody?
    - i. [NS]: Yes.
7. Plan Update Process: Step 3 Develop a Mitigation Plan
  - a. Setting planning goals
  - b. Reviewing mitigation alternatives
    - i. Each jurisdiction has a previous list of what you are trying to get accomplished; FEMA requires that we provide some type of implementation status update on each action
    - ii. This is the perfect time to develop new actions for the mitigation action plan, this will be discussed further at another future meeting (mitigation strategy meeting)
  - c. Drafting an action plan
8. Plan Update Process: Step 4 Adoption and Implementation

- a. There is a checklist of everything that must go into these plans from a FEMA regulatory perspective, we will be working with each of your jurisdictions to participate in the plan and adopt by resolution to remain eligibility for funding

9. Project Schedule

- a. Project kickoff date – 2/26/24
- b. Stakeholder kickoff meeting – 6/12/24
- c. Public meeting 1 – date TBD
- d. Proposed delivery of draft – 12/15/24
- e. Public meeting 2 – date TBD
- f. Existing plan expiration date – 6/15/25 (the most important date)
- g. [QUESTION]: So we want to have the plan adopted before the June 15 deadline?
  - i. [NS]: Yes, ideally you can adopt the plan before the FEMA review to get in front of it.
- h. [QUESTION]: Would your agency be responsible for notifying us of passing state review?
  - i. [NS]: Yes, we will let everyone know about any passing updates.
- i. ACTION ITEMS FOR ATTENDEES: (1) mitigation action plans and associated information and (2) updated critical facility lists

10. Plan Website

- a. Project team requests counties/municipalities post relevant information and updates about project
- b. Can be used as a tool for HMPC coordination and public outreach
- c. Ideas shared for website content
  - i. Upcoming meeting announcements
  - ii. Meeting agendas
  - iii. Public survey
  - iv. Draft documents
  - v. Opportunities to provide feedback

11. Next Steps

- a. Record and analyze input received during Stakeholder Meeting
- b. Share public survey
- c. Select date of public meeting 1 (online or in-person)
- d. Update risk assessment (underway)
- e. Update capability assessment (underway)
- f. Mitigation strategy development meeting (date TBD)
- g. Actionable items for stakeholders:
  - i. Begin reviewing mitigation action plan and updating status of each action (FEMA requirements)
  - ii. Brainstorm dates for public meeting 1 (online or in-person)
  - iii. Brainstorm dates/locations for Mitigation Strategy meeting

12. Complete and Share the Public Survey

- a. Will send out the QR code and link in follow-up materials
- b. [QUESTION]: An issue we have had before in Oriental is multiple surveys coming from the same people using the same IP. Any solutions here?



- i. [NS]: Biggest thing we are looking for is where people are located at. We can have paper copies available at local departments or something similar.

13. Questions

- a. [NS]: With this update, FEMA is requiring that vulnerable and underserved groups have the opportunity participate in it. Looking to county social services, county health department, planning departments, emergency management, churches, food pantries, etc. looking at who is connected to community voices and interests.
  - i. [QUESTION]: Would it be worth reaching out to CDRA zones?
    - 1. [NS]: Yes.
  - ii. [COMMENT]: Think you will find that reaching out through the churches will get the outreach you are looking for.
  - iii. [QUESTION]: Would you want the demographic of the church identified?
    - 1. [NS]: Yes, that would help us address the requirements.
- b. [QUESTION]: Last time we had a designated website with all this information? Will we use that again or something else?
  - i. [NS]: We are working with the contractor that set it up to see if we can use it. Plan B is to send through county/local websites if we need it. There is no specific FEMA requirement for this though.

14. Meeting adjourned and sign-in sheets collected

- a. We will be sending follow-up materials including slides and survey, begin thinking about mitigation action plans and updated critical facility lists
- b. Project team will be responding to any questions as needed

Pamlico Sound Regional Hazard Mitigation Plan  
Stakeholder Kickoff Meeting

June 12, 2024  
10:00AM - Noon

| Name             | Jurisdiction                        | Title                                    | Phone Number | E-mail Address   |
|------------------|-------------------------------------|--|--------------|--|
| JANIS KIRKLAND   | RIVER BEND                          | Mayor                                    | 252 259 8033 | Skirkland@riverbendnc.com                                      |
| ROBERT EDWARDS   | <del>RIVER BEND</del><br>River Bend | <del>GENERAL MANAGER</del><br>River Bend | 252 321 5721 | <del>Robert.Edwards@riverbendnc.com</del><br>edw1858@gmail.com |
| Delane Jackson   | River Bend                          | Town Manager                             | 252-638-3870 | Manager@riverbendnc.org  |
| David M. Rief    | Cedar Point                         | Town Manager                             | 252-393-7898 | drie@cedarpointnc.org  |
| Alisha Dehart    | Cedar Point                         | Code Enforcement OFFICER                 | 252-393-7898 | adehart@cedarpointnc.org                                       |
| Jimmie Beckom    | Pine Knoll Shores                   | Strategic Planning Representative        | 919-906-2174 | jimmiebeckom@hotmail.com                                       |
| Chad Strawn      | Craven County                       | Planning Director                        | 252-636-6618 | cstrawn@cravencountync.gov                                     |
| Katrina Marshall | City of Havelock                    | Planning Director                        | 252-444-6411 | Kmarshall@havelocknc.us  |

Pamlico Sound Regional Hazard Mitigation Plan  
Stakeholder Kickoff Meeting

June 12, 2024  
10:00AM - Noon

| Name            | Jurisdiction | Title                           | Phone Number                         | E-mail Address             |
|-----------------|--------------|---------------------------------|--------------------------------------|----------------------------|
| Bill Kepp       | Oriental     |                                 | 712-395-0489                         | billkepp@outbk.com         |
| Bill Marlowe    | ORIENTAL     |                                 | 252-725-4676                         | WM12@EMBARQ.MA1            |
| Diane H. Miller | Oriental     | Town Manager                    | 252-671-2821 (c)<br>252-249-0555 (w) | manager@townoforiental.com |
| Ann Marie Root  | Oriental     | Board of Adjustment<br>Oriental | 852 249 0117<br>340 573 3011         | annroot@weisslaw-vi.net    |
|                 |              |                                 |                                      |                            |
|                 |              |                                 |                                      |                            |
|                 |              |                                 |                                      |                            |
|                 |              |                                 |                                      |                            |
|                 |              |                                 |                                      |                            |

Pamlico Sound Regional Hazard Mitigation Plan  
Stakeholder Kickoff Meeting

June 12, 2024  
10:00AM - Noon

| Name            | Jurisdiction  | Title                     | Phone Number | E-mail Address                |
|-----------------|---------------|---------------------------|--------------|-------------------------------|
| Jason Frederick | Craven County | Assist. Planning Director | 252-636-6618 | jfrederick@cravencountync.gov |
| William Flynn   | Craven County | Planner                   | ↑            | w.flynn@cravencountync.gov    |
| Don Little      | Craven County | Planner II                | " "          | d.little@cravencountync.gov   |
|                 |               |                           |              |                               |
|                 |               |                           |              |                               |
|                 |               |                           |              |                               |
|                 |               |                           |              |                               |
|                 |               |                           |              |                               |
|                 |               |                           |              |                               |
|                 |               |                           |              |                               |

Pamlico Sound Regional Hazard Mitigation Plan  
Stakeholder Kickoff Meeting

June 12, 2024  
10:00AM - Noon

| Name             | Jurisdiction    | Title                               | Phone Number | E-mail Address              |
|------------------|-----------------|-------------------------------------|--------------|-----------------------------|
| Bill Stumpf      | M.H.C.          | BOARD of<br>ADVISERS                | 252-744-1965 | BSTUMP@<br>EMAL.H.COM       |
| Chris Seaberg    | Emerald<br>Isle | Planning<br>Director                | 757-354-3338 | Cseaberg@emeraldisle.nc.gov |
| ERNEST E. CUTLER | HAVELOCK        | HAVELOCK PLANNING<br>BOARD CHAIRMAN | 252-675-9100 | ecutler12@gmail.com         |
| Tim Buck         | Pamlico County  | County<br>Manager                   | 252-745-3133 | tim.buck@pamlico-county.org |
|                  |                 |                                     |              |                             |
|                  |                 |                                     |              |                             |
|                  |                 |                                     |              |                             |
|                  |                 |                                     |              |                             |
|                  |                 |                                     |              |                             |

**APPENDIX B: PLANNING PROCESS DOCUMENTATION**

|  |  |                      |                     |
|--|--|----------------------|---------------------|
| <b>1. Summary</b>                          |  |                      |                     |
| Meeting title                              | Pamlico Sound Regional Hazard Mitigation Plan Update Kickoff |                      |                     |
| Attended participants                      | 29   |                      |                     |
| Start time                                 | 6/12/24, 9:31:50 AM  |                      |                     |
| End time                                   | 6/12/24, 1:03:09 PM  |                      |                     |
| Meeting duration                           | 3h 31m 19s   |                      |                     |
| Average attendance time                    | 55m 11s  |                      |                     |
| <b>2. Participants</b>                     |  |                      |                     |
| Name                                       | First Join   | Last Leave           | In-Meeting Duration |
| Nathan Slaughter                           | 6/12/24, 9:53:06 AM  | 6/12/24, 10:59:23 AM | 1h 6m 17s           |
| Julie Shambaugh (External)                 | 6/12/24, 9:53:13 AM  | 6/12/24, 10:58:48 AM | 1h 5m 34s           |
| DC Linton (Unverified)                     | 6/12/24, 9:53:24 AM  | 6/12/24, 10:03:14 AM | 9m 49s              |
| Melissa Beacham                            | 6/12/24, 9:53:24 AM  | 6/12/24, 10:58:16 AM | 1h 4m 51s           |
| Dan Allen, Oriental (Unverified)           | 6/12/24, 9:53:25 AM  | 6/12/24, 10:58:31 AM | 1h 5m 6s            |
| Charlie Rocci (External)                   | 6/12/24, 9:53:49 AM  | 6/12/24, 10:58:17 AM | 1h 4m 27s           |
| John Nevel (External)                      | 6/12/24, 9:54:24 AM  | 6/12/24, 10:58:07 AM | 1h 3m 42s           |
| Lynn Davis, Belhaven (Unverified)          | 6/12/24, 9:54:26 AM  | 6/12/24, 10:58:15 AM | 1h 3m 49s           |
| Tim White (External)                       | 6/12/24, 9:54:50 AM  | 6/12/24, 10:57:05 AM | 1h 2m 14s           |
| Chris Newkirk                              | 6/12/24, 9:55:36 AM  | 6/12/24, 10:57:33 AM | 1h 1m 57s           |
| Melanie Dixon (External)                   | 6/12/24, 9:55:46 AM  | 6/12/24, 1:03:09 PM  | 3h 7m 22s           |
| Scott Harvey (Unverified)                  | 6/12/24, 9:56:28 AM  | 6/12/24, 10:58:08 AM | 1h 1m 39s           |
| Moore, Abigail                             | 6/12/24, 9:56:30 AM  | 6/12/24, 10:58:09 AM | 1h 1m 39s           |
| Elisabeth Webster (External)               | 6/12/24, 9:57:33 AM  | 6/12/24, 10:58:07 AM | 1h 33s              |
| Stroud, David                              | 6/12/24, 9:57:35 AM  | 6/12/24, 10:58:10 AM | 1h 34s              |
| Gregg Hartman & Gene Foxworth (Unverified) | 6/12/24, 9:57:36 AM  | 6/12/24, 10:58:45 AM | 1h 1m 9s            |
| Annie Bunnell                              | 6/12/24, 9:59:26 AM  | 6/12/24, 10:58:13 AM | 58m 46s             |
| Jennifer Ansell (External)                 | 6/12/24, 9:59:46 AM  | 6/12/24, 10:58:11 AM | 58m 24s             |
| Mike Dail (Unverified)                     | 6/12/24, 10:00:21 AM   | 6/12/24, 11:01:19 AM | 1h 57s              |
| Tripp, Charles (NCEM) (External)           | 6/12/24, 10:00:37 AM   | 6/12/24, 10:57:08 AM | 56m 30s             |
| Sarah Spiegler                             | 6/12/24, 10:01:09 AM   | 6/12/24, 10:59:40 AM | 58m 30s             |
| Sharron Wilson (Unverified)                | 6/12/24, 10:01:49 AM   | 6/12/24, 10:58:26 AM | 56m 36s             |
| Beth Bucksot (External)                    | 6/12/24, 10:02:06 AM   | 6/12/24, 10:58:09 AM | 56m 2s              |
| +19192186557 (Unverified)                  | 6/12/24, 10:07:37 AM   | 6/12/24, 10:12:56 AM | 3m 46s              |
| Crew, John (NCEM) (Guest)                  | 6/12/24, 10:12:53 AM   | 6/12/24, 10:22:56 AM | 10m 3s              |
| +12526229665 (Unverified)                  | 6/12/24, 10:13:35 AM   | 6/12/24, 10:20:27 AM | 6m 52s              |
| Jason Baker (External)                     | 6/12/24, 10:20:05 AM   | 6/12/24, 10:58:13 AM | 38m 7s              |
| Carolyn (Unverified)                       | 6/12/24, 10:29:41 AM   | 6/12/24, 10:55:17 AM | 25m 35s             |
| John Flores                                | 6/12/24, 10:32:12 AM   | 6/12/24, 11:01:29 AM | 29m 16s             |

## HMPC MEETING 2: OCTOBER 29, 2024

### Pamlico Sound HIRA Meeting

October 29th, 2024  
10am-12pm

#### Resourced Shared

1. Email Attachments
  - a. Menti Results
  - b. HIRA Presentation
  - c. Mitigation Strategies Handout (PDF)
  - d. Meeting Attendees
2. Online Resources
  - a. Express Maps - [Pamlico Sound Hazard Mitigation Plan: Key Areas](#)
  - b. Plan Website - [Pamlico Sound Regional HMP](#)

#### Welcome & Introductions

##### Welcome

Nathan Slaughter from ESP Associates facilitated the meeting and began by introducing WSP (lead consultant) and ESP Associates (sub-consultant). He thanked all participants for their attendance and noted that the meeting was expected to utilize the full two-hour schedule. Nathan highlighted that the team was incorporating new elements into the presentation to encourage participants to start thinking about the upcoming Mitigation Strategy Meeting.

##### Participants

There were over 30 people in attendance of the HIRA meeting. See attached spreadsheet.

##### Meeting Objectives

###### *HIRA Purpose in Mitigation*

The relationship between hazard identification and risk assessment (HIRA) and the overall mitigation strategy was explained. Understanding hazards is crucial for developing effective mitigation measures that can reduce risk and enhance community resilience.

###### *Build Consensus*

The meeting was intended to encourage open dialogue among participants and build consensus on the identified hazards was encouraged. It was noted that collective agreement is important for the success of the mitigation plan.

#### *Confirm PRI*

The group discussed the Priority Risk Index (PRI), confirming its relevance and applicability in ranking the hazards faced by the region. Participants were also offered an opportunity to adjust the PRI criteria based on personal knowledge and expertise. The aim was to ensure everyone is aligned on the criteria and ranking.

#### *Link Mitigation*

The conversation shifted to linking identified hazards with potential mitigation strategies. Participants were encouraged and prompted to brainstorm mitigation strategies in preparation for the upcoming mitigation strategy meeting.

### **HIRA Overview**

#### **Compliance and Eligibility**

To provide context at the front end of the meeting, the role of HIRA in mitigation was reviewed in great depth. HIRA, which stands for Hazard Identification and Risk Assessment, serves as the foundation for developing effective mitigation plans. It is essential not only for state and federal compliance, but also guides the entire planning process. By understanding the risks associated with various hazards and having an HMP in place, communities can better position themselves for important funding sources, such as the Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), and the Flood Mitigation Assistance (FMA) program.

#### **Best Practices and Standards**

The meeting highlighted the increasing frequency and intensity of hazards, as shown by recent storms in areas like Brunswick County and Western NC. This reality prompts questions about how communities should adapt their planning strategies. Participants discussed the need for an all-hazards approach that recognizes both natural and human-caused threats, aligning with the State HMP as well as the general shift toward comprehensive emergency response planning.

The meeting underscored the importance of a robust and inclusive approach to hazard mitigation planning. By engaging a diverse group of stakeholders, particularly those from historically underserved populations, and incorporating insights from various communities, the HMP can more effectively address local risks and enhance overall resilience. As the group moves forward, the focus will remain on evaluating capabilities and developing practical mitigation measures.



## HIRA Process

Essential steps in the HIRA process were summarized. The HIRA process begins with the identification of hazards that may impact the communities, using data and information from various sources, including existing regional plans and the North Carolina Hazard Mitigation Plan. Hazard impacts and the susceptibility of local assets and infrastructure are then assessed to estimate the associated risks to property, people, and infrastructure. The Priority Risk Index (PRI) is developed to help prioritize risks, using a scoring matrix, to inform mitigation efforts.

In addition to assessing hazards and their impacts, community capability is considered. This involves identifying existing gaps, conflicts, and opportunities within current systems, while also highlighting past achievements in mitigation. Documentation is an essential component of the plan update as FEMA emphasizes the need to maintain a clear record of the findings, methodologies, and processes involved.

## Previous Assessment

The Pamlico Sound Region has been participating in the regional hazard mitigation update for at least 15 years. The group reviewed findings from the 2020 HMP assessment, with a focus on previously identified hazards, community capabilities, and PRI scores. The previous assessment only included natural hazards where many of the identified hazards fell into the "high risk" category according to the PRI scoring matrix.

The previous capability assessment results were also discussed, which is currently undergoing updates. From the 2020 plan, 20 communities scored low capacity, 17 with moderate capacity, and 2 with high capacity. It was noted that the 2025 plan is subject to change, as several communities are anticipated to increase from low to moderate capacity. Ideally, the best-case scenario would be to achieve high capacity with low risk. However, the current situation reflects a reality of higher risk coupled with moderate capacity.

## Updated Assessment

### High-Risk Hazards Identified and Profiled

The initial assessment findings for the 2025 plan update were shared with a focus on the high-risk hazards and the risk assessment methodology. The process began with a review of past disaster declarations to understand the historical context of hazards affecting our region. Each significant hazard was profiled in line with FEMA requirements and

summarized during the meeting. The presentation focused on profiles of high-risk hazards which included:

1. Excessive heat (emerging as the greatest risk considering heat-related death and illness)
2. Hurricane and coastal hazards
3. Flooding (extensive floodplain areas contribute to vulnerability)
4. Tornadoes and thunderstorms
5. Wildfires (warmer temperatures and prolonged drought conditions have been shown to exacerbate wildfire risks, especially in our wildland-urban interface)
6. Winter weather (particularly related to transportation challenges)

These updated findings will be used to guide upcoming mitigation planning efforts and help prioritize strategies to reduce risk and enhance community resilience against the identified hazards faced by the Pamlico Sound Region.

## Interactive Session – Problem Statements

### General Concerns

Interactive sessions were incorporated as a new element within the HIRA meeting to actively engage participants, foster discussion, and capture input. Initial public survey results (461 responses) were reviewed and analyzed to identify problems statements including general concerns and key hazard areas. General concerns were developed based on arising themes found in survey responses intended to broadly depict the issues of the Region. General concerns included:

1. Inadequate drainage systems
2. Development in flood-prone areas
3. Natural habitat degradation
4. Limited community awareness and readiness
5. Aging and undersized infrastructure
6. Insufficient communication and resources (during and post event)

A Menti Poll was created and integrated into the meeting for live polling feature that displayed participant responses as they were submitted. Participants were asked to rank the significance of each general concern where significance was based on the need to address the concern in order to mitigate risk and enhance resilience in the Region.

Participants were also encouraged to identify hazard areas, propose strategies, and share previous and/or ongoing efforts within their community to address the general concern. The following information summarizes any additional information shared/collected during

the activity. Menti Poll results are included as an attachment in the follow-up email as requested by participants.

1. Inadequate drainage
  - a. The planning team will do GIS follow-up to locate and identify any areas mentioned at this time.
  - b. Goose Creek Island was identified in the virtual meeting chat.
  - c. Town of Vandemere was identified in the virtual meeting chat.
  - d. Front Street in Downtown Beaufort was identified in the virtual meeting chat.
2. Development in flood-prone areas
  - a. The Non-Intensification Zone in Beaufort was discussed with the group. This effort gained traction and support through the land use and resilience plan. It is not regulatory yet, but Beaufort is currently updating its UDO. The aim is to incorporate zones within the updated ordinances. The Town received funding through the RCPP and is working with White and Smith to update ordinances, which is anticipated to be a year-long process.
  - b. Impervious surface restrictions were suggested in-person at the meeting.
3. Natural habitat degradation
  - a. The public survey responses largely align with key stakeholders in the Region.
  - b. The Town of Oriental shared a recent effort.
4. Limited community awareness and readiness
  - a. A community recently coordinated with real-estate firms to discuss and educate on implications of Coastal A zones and changes involved. Overall, the firms found it helpful, and others inquired about the information.
  - b. A participant suggested sharing information at a scheduled event (e.g. a festival or parade) that is likely to have community turnout versus scheduling a separate event.
  - c. The facilitator also noted that interactive pieces and visualization components are effective tools to engage the community.
  - d. Places suggested to host and share mitigation-related materials include municipal websites, municipal buildings (e.g. town hall or libraries), and monthly newsletters.
5. Aging and undersized infrastructure
  - a. Storm drains through the Town of Belhaven were called out. Located in an AE flood zone, the Town is a RCPP community and has received funding to develop a town-wide comprehensive stormwater management plan.
  - b. Undersized drainage outfalls in Morehead City were identified.

6. Insufficient communication and resources (during and post event)
  - a. A heat action plan was mentioned during the meeting to help communities gain access to resources (e.g. heat action plans and ordinances). The NCORR Resilience Exchange was shared as a useful resource.

### Key Hazard Areas (Express Maps)

In addition to general concerns, the planning team also collected specific geographical locations and/or assets from survey responses to map key hazard areas. This information was then entered into ARC GIS Express Maps to pinpoint and visualize locations. The team will continue to update this map based on input received throughout the process including the HIRA meeting. It is intended to serve as a living catalogue of problem areas along with mitigation actions to address vulnerabilities. The Express Map will be linked to the project website to serve as a valuable public facing resource.

### Initial PRI Findings

The initial priority risk index (PRI) scores were reviewed, noting that the latest assessment closely resembles the previous update from 2020. There was a consensus among attendees to consider adding man-made hazards, such as cyber threats and infectious diseases, to the classification.

Discussion arose regarding whether mitigation actions are necessary for these new hazards. It was clarified by Carl Baker that mitigation for man-made hazards was not a review element, but this will be confirmed. It was pointed out that infectious diseases could be classified as either natural or human-caused.

The group re-examined the probability for coastal hazards and flooding, both of which were updated to "Highly Likely." It was noted that any adjustments to these categories would affect the overall PRI scores. Participants were invited to share any questions or comments regarding the rankings.

### Linking to Mitigation Strategies

The connection between the HIRA and mitigation strategies was outlined. A handout was distributed that included preliminary mitigation strategies derived from public survey responses, setting the stage for a focused discussion on potential solutions. With a clearer understanding of risks, the conversation shifted towards developing informed, effective, and practical mitigation measures.

The mitigation action plan, which spans over 15 years, includes existing actions from each jurisdiction. The implementation status of each action must be reviewed to ensure

compliance with FEMA requirements. Additionally, there is an opportunity to incorporate new projects as part of the mitigation action plan for RCPP communities. To keep stakeholders informed, both the handout and the existing mitigation action plan will be shared in the meeting follow-up communication.

### **Interactive Sessions – Initial Mitigation Strategies**

The second interactive session was intended to get participants to start thinking about problem solutions. In addition to problem statement identification from survey results, the planning team also collected and reviewed proposed mitigation strategies from the public survey. Meeting participants were then asked to rank mitigation measures to address the previously identified general concerns (covered in the first activity summarized above). The Menti Poll results are included as an attachment to meeting follow-up. During this discussion, it was noted that people move to the Region without understanding the risk.

### **Next Steps**

The next steps in the planning process were shared. Participants were encouraged to review the mitigation strategies handout as well as the existing Mitigation Action Plan considering new mitigation actions and potential projects. Emphasis was placed on leveraging funding opportunities from RCPP and BRIC to enhance mitigation efforts.

A Mitigation Strategy Meeting needs to be scheduled soon, ideally before Christmas. The Town of Oriental volunteered to host the next meeting.

**APPENDIX B: PLANNING PROCESS DOCUMENTATION**

HMPC Meeting 2 Attendance

| <b>Virtual Attendees</b>   |                                 |
|----------------------------|---------------------------------|
| <b>Name</b>                | <b>Organization</b>             |
| Abigail Moore              | WSP (Lead Contractor)           |
| Alisha Dahart              | Town of Cedarpoint              |
| Annie Bunnell              | Morehead City                   |
| Autumn Hardison            | Pamlico County                  |
| Bill Kepp                  | Town of Oriental                |
| Bob Edwards                | Town of Riverbend               |
| Carl Baker                 | NCEM                            |
| Chad Strawn                | Craven County                   |
| Charlie Rocci              | Pine Knoll Shores               |
| Chris Seaberg              | Emerald Isle                    |
| David Rief                 | Town of Cedarpoint              |
| David Stroud               | WSP (Lead Contractor)           |
| Delane Jackson             | Town of Riverbend               |
| Donnie LaVelle             | Craven County                   |
| Egon Lippert               | Town of Riverbend               |
| Foster Hughes              | City of New Bern                |
| Frankie Winberry           | Town of Cedarpoint              |
| Hannah DeLude              | ESP Associates (Sub-Contractor) |
| Jason Baker                | Pine Knoll Shores               |
| John Flores                | ESP Associates (Sub-Contractor) |
| Jonathon Russel            | Town of Washington              |
| Julie Shambaugh            | Cape Carteret                   |
| Lynn Davis                 | Town of Belhaven                |
| Sandi Watkins              | Morehead City                   |
| Sarah Spiegler             | Beaufort/NC Sea Grant           |
| Tim White                  | Town of Indian Beach            |
| William Flynn              | Craven County                   |
| <b>In-Person Attendees</b> |                                 |
| <b>Name</b>                | <b>Organization</b>             |
| Aaron Stryker              | Carteret County                 |
| Ann Marie Rost             | Town of Oriental                |
| Bill Stomf                 | MHC                             |
| Cole Borrow                | Carteret County                 |
| Diana Tootle               | City of Morehead                |
| Diane Miller               | Town of Oriental                |
| Gregg Hartman              | Carteret County                 |
| Michelle Eitner            | Beaufort                        |
| Sue Steinhauser            | City of Havelock                |

HMPC MEETING 3: DECEMBER 4, 2024

PAMLICO SOUND MITIGATION STRATEGY MEETING

December 4<sup>th</sup>, 2024  
 Teams Meeting  
 10:00am – 12:00pm

*Participants*

| Name                  | Role                              | Organization         |
|-----------------------|-----------------------------------|----------------------|
| Erin Striker          | EM Coordinator                    | Carteret County      |
| Bill Kepp             |                                   | Town of Oriental     |
| Chad Strawn           | Planning Director                 | Craven County        |
| Charlie Rocci         | Town Planner                      | Pine Knoll Shores    |
| Chris Seaberg         | Planning Director                 | Emerald Isle         |
| Brad Connel           | Program Consultant                | NCDEQ Blueprint      |
| Nathan Slaughter      | Project Team (Subconsultant)      | ESP Associates       |
| Diana Tootle          | Planning Board                    | Morehead City        |
| Chris Dreps           | Program Consultant                | NCDEQ Blueprint      |
| Kenny Handson         | Project Team (Lead Consultant)    | WSP                  |
| Jason Baker           | Fire Chief                        | Pine Knoll Shores    |
| Jason Frederick       | Assistant Planning Director       | Craven County        |
| Jeremy Ganey          | Zoning Manager                    | Town of Beaufort     |
| Katrina Marshall      | Planning Director                 | City of Havelock     |
| John Mello            | Hazard Mitigation Planner         | NCEM                 |
| Michelle Eitner       | Planner/Code Enforcement Officer  | Town of Beaufort     |
| Mike Haber            | Maintenance and Zoning Supervisor | Town of Trent Woods  |
| Abigail Moore         | Project Team (Lead Consultant)    | WSP                  |
| Sandy Watkins         | Planning and Inspections Director | Morehead City        |
| Annie Bunnell         | Planner                           | Morehead City        |
| David Stroud          | Project Team (Lead Consultant)    | WSP                  |
| Sue Steinhouser       | Planner                           | City of Havelock     |
| Hannah Thompson Welch | Wildfire Mitigation Specialist    | NC Forest Service    |
| Tim White             | Town Manager                      | Town of Indian Beach |
| Delane Jackson        | Town Manager                      | Town of Riverbend    |
| Egon Lippert          | Planning Board Chairman           | Town of Riverbend    |
| Bob Edwards           |                                   | Town of Riverbend    |
| Helene Wetherington   | Resilient Communities Specialist  | NCORR                |
| Holly White           | Resilience Planner                | NCORR                |
| Jake Brown            | Planning Department               | Pamlico County       |
| Diane Miller          | Town Manager                      | Town of Oriental     |
| Chris Crew            | State Hazard Mitigation Officer   | NCEM                 |
| Hannah DeLude         | Project Team (Subconsultant)      | ESP Associates       |

PAMLICO SOUND MITIGATION STRATEGY MEETING

*Introduction*

The Mitigation Strategy Meeting for the Pamlico Sound Regional Hazard Mitigation Plan Update 2025 was held virtually to facilitate efficient collaboration aiming for draft completion in approximately one month. The project team was introduced and includes WSP, the lead consultant, as well as ESP Associates, the sub-consultant. The project team welcomed all participants including several new stakeholders. The discussion centered on the importance of mitigation actions to reduce future hazards based on priority risks, identified problems, and evolving needs.

*Mitigation Overview*

During the meeting, the participants discussed the concept of mitigation, which refers to *proactive measures taken to reduce the impact of hazards before they occur*, with the goal of minimizing future risks and damages. Several key components of effective mitigation were outlined, including solution identification, maintaining eligibility for funding, and the continuous revision of mitigation actions based on stakeholder feedback. The project team explained the importance of updating the Mitigation Action Plan, which prioritizes and implements specific actions to reduce hazard risks.

It was noted that all mitigation actions are categorized into two major groups (existing development and future development) and fall under one of the six techniques summarized (prevention, preparedness, natural resource protection, emergency services, property protection, and education and awareness). The evolution of the Hazard Mitigation Plan (HMP) was reviewed, which previously operated at the county level and now operates at the regional level. The plan is required to be updated every five years, although some communities revise it more frequently in response to emerging risks.

The project team sought feedback on existing mitigation goals. The conversation highlighted the necessity of revising these goals based on community input and ensuring that future planning reduces vulnerability in local communities. Existing mitigation goals were found to be aligned with current priorities with very minor revisions needed. The strong momentum mitigation and resilience was acknowledged highlighting the significant funding opportunities available. It was noted that for every dollar spent on mitigation, there is a savings of six dollars in future recovery efforts.

*Interactive Session #1*

During the Pamlico Sound Mitigation Strategy Meeting for the Regional Hazard Mitigation Plan Update, participants engaged in an interactive session discussing various goals, previous successes, challenges and opportunities related to hazard mitigation in the region.



PAMLICO SOUND MITIGATION STRATEGY MEETING

Challenges mentioned include:

- Diane Miller emphasized the need for increased funding for actual construction projects rather than just planning, highlighting the ongoing struggle with complacency among new residents unfamiliar with coastal hazards.
- A sense of planning fatigue was noted and the necessity to connect funding to actionable projects.
- Challenges such as contractor availability and bidding processes were discussed, particularly in Pine Knoll Shores, where contractor solicitation for grant-funded projects has been difficult.
- Participants raised concerns about the adequacy of current flood maps, advocating for updated data to reflect recent disasters.
- There is a level of complacency among residents considering coastal hazards. The recent effects of Hurricane Helene emphasize the need for continued planning and preparedness efforts.

Opportunities discussed include:

- John Mello introduced the Building Resilient Infrastructure and Communities (BRIC) grant funding, which supports multi-jurisdictional projects.
- The session underscored the importance of collaboration between state and local governments and the potential of the NC Resilience Exchange to connect communities with vital resources.
- In response to concerns raised about FEMA flood maps, Chris Crew explained that there may be opportunities to calculate benefit cost in areas that have a history of multiple flood events although not located in the SFHA. Additionally, fundings for stormwater management projects has become more accessible through BRIC and these funds may be applicable to areas outside of the SFHA.
- There is collaboration between the State and local government when updating the flop maps. Local governments are given the opportunity to identify specific areas of concern or to request additional studies.

Refer to the Menti Poll results PDF shared as part of the follow-up materials to view results.

*Key HIRA Findings*

Key findings from the Hazard Identification and Risk Assessment (HIRA) were reviewed, sharing revisions or notable adjustments based on input received during the previous meeting. This included successful efforts shared by communities, additional general concerns and hazard areas added to the Story Maps, changes in the Priority Risk Index (PRI) scoring criteria, as well as new hazards considered in the plan (human-caused).

Additional success stories shared at this time include:

PAMLICO SOUND MITIGATION STRATEGY MEETING

- Craven County shared successful mitigation actions, including home elevations completed under the Hazard Mitigation Grant Program (HMGP) following Tropical Storm Michael and Hurricane Dorian as well as generator installation at critical facilities. The County went from a Class 8 to Class 7 CRS classification rating.
- Carteret County hosts an annual hurricane expo to heighten awareness and educate residents on storm surge, king tides, and coastal flooding. This is particularly important for new residents are not familiar with coastal hazards.
- The Town of Riverbend moved the public works facility a half mile down the road to safeguard the facility and equipment, where is now has a 27 ft. elevation.
- The City of Havelock adopted a 2' freeboard since the last plan update and is now a Class 7 CRS community.
- Morehead City is now a Class 5 CRS community, implementing several stormwater projects (on Shepherd, Bay, and Avery) as well as a large restoration project for Sugarloaf Island.

*Interactive Session #2*

In a second interactive session, participants brainstormed potential new mitigation actions, focusing on problem statements discussed/confirmed during the previous HIRA meeting. These actions primarily focused on infrastructure improvements and community awareness initiatives. There was a consensus on the importance of including specific projects in the mitigation plan and the necessity for collaboration among municipalities to effectively update action plans. Refer to the Menti Poll results PDF shared as part of the follow-up materials to view results.

*Mitigation Action Plan Development*

The meeting emphasized the importance of reviewing existing mitigation actions and assessing their implementation status, which included determining whether actions were completed, deleted, or carried forward for further development. A collaborative effort is needed to refine and integrate new mitigation actions, with many county initiatives encompassing broader municipal concerns. Discussions highlighted the need to differentiate between mitigation and capability projects, acknowledging that some initiatives may not directly lead to mitigation outcomes. Enforcement of these actions was also a focal point.

Holly White contributed insights on leveraging the NC Resilience Exchange's Identify Actions tab and stressed the importance of incorporating findings from land use and capital improvement plans, particularly in anticipating future conditions such as increased rainfall impacts on stormwater drainage systems. John Mello reiterated the common challenges faced in the grant approval process, encouraging patience and resubmission efforts, as many stakeholders navigate similar hurdles.

PAMLICO SOUND MITIGATION STRATEGY MEETING

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*Next Steps*

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Critical next steps were outlined to advance the planning process. A key suggestion was to establish a specific date for addressing remaining items, including the identification of necessary mitigation actions and the adoption of the plan. Additionally, a new requirement was introduced, which involves pulling Standard Data Elements (SDE) procedures for each participating community. This task is primarily the responsibility of floodplain managers, who will ensure that the required data is compiled efficiently to support the overall mitigation strategy.

The meeting concluded with a call for collaborative updates among counties and municipalities, emphasizing the necessity of brainstorming across departments to foster a unified approach to hazard mitigation.

HMPC MEETING 4: JANUARY 28, 2025

**Pamlico Sound Regional Hazard Mitigation Plan Update**

**4<sup>th</sup> HMPC Meeting**

1/28/25, 1 PM – 2 PM

Virtual, Microsoft Teams

**[Online Attendees; 36]:** Nathan Slaughter, Chris Crew, Tim White, Linda Marshall, Delane Jackson, Egon Lippert, Bob Edwards, DC Linton, Stephen Rea, April Alligood, Charlie Rocci, Shawne Southard, Ray Lewis, Chris Dreps. Michelle Eitner, Aaron Stryker, Kimberly Hansen, Abby Moore, Austin Brinkley, David Reif, Alisha Dahart, Lynn Davis, Jayne Calhoun, Jake Brown, Hannah Thompson-Welch, Beth Bucksot, John Mello, Brad Connell, Cole Barrow, Greg Gartman, Elisabeth Webster, Annie, Bunnell, Jason Frederick, Chris Seaberg

- I. Welcome and Introductions
  - a. Trying to wrap up the draft plan update
    - i. Draft will be available very soon
    - ii. It will be available on Pamlico Sound HMP website and sent directly to HMPC members
    - iii. Plan will be available as a PDF
    - iv. trying to track down some missing pieces
  - b. Attendee introductions
- II. Meeting Objectives (3 key objectives)
  - a. Educate and inform
  - b. Review Draft Plan Items
  - c. Discuss Finding
- III. Planning Process Steps
  - a. 10 step process (See ppt. for comprehensive list)
    - i. Step 7 – Review possible activities (current)
    - ii. Step 8 – Draft an Action Plan (current)
- IV. Structure and Components Review
  - a. Plan structure – TOC will look like this
  - b. Plan components
    - i. Hazard profiles
      - 1. Included some additional hazards in this version
      - 2. Made changes to the risk assessment summary
        - a. Review/make sure it reflects what’s been discussed
      - 3. PRI results reviewed and revised based on mitigation meeting
    - ii. Capability assessment

- 1. Revised slightly – stakeholders to review
  - iii. Goals and objectives in mitigation strategy
    - 1. No revision requests currently
  - iv. Mitigation action plan
    - 1. Large component of plan update
    - 2. Still missing from several participating communities
    - 3. Implementation status update narrative
    - 4. Handful of actions that stakeholders proposed for inclusion – make sure this information is accurately captured
      - a. Want to make sure these items are included
  - c. Sections overview including annexes/appendices
- V. Plan Implementation and Maintenance
  - a. Role this group plays in implementation/maintenance
    - i. Potentially meet annually
    - ii. CRS communities – regular reviews are important to maximize credit
  - b. Pursue implementation of actions
  - c. Procedures to continue public involvement
  - d. Integrate with other planning efforts
    - i. How the previous plan has been integrated within jurisdiction
      - 1. Section within maintenance section
    - ii. Comprehensive plan, CIP, EOP, other ordinances/policies
      - 1. Making mitigation more of a day-to-day activity
    - iii. How to improve integration with future efforts
      - 1. Reflect any efforts you’re hoping to do
  - e. Update in 2030
- VI. Next Steps
  - a. Track/report plan integration efforts
  - b. Finalize mitigation actions
  - c. Final Public Meeting tonight
  - d. Review draft plan
  - e. Adoptions can begin as soon as we get green light from NCEM (simultaneous review)
    - i. Revise based on all feedback
    - ii. Send along to FEMA
      - 1. Approval pending adoption
      - 2. Now provide approval letter and list those who have already adopted plan
    - iii. All jurisdictions must adopt

VII. Questions/Comments

- a. AM: Still need updated mitigation actions from two counties. Municipalities please feel free to add local actions if you'd like.
- b. DJ: River Bend identified specific actions for our municipality because we want to pursue federal grant funding and actions need to be included in the plan to be eligible for that funding.
- c. AM: We will include an action for every community to update or create a community wildfire protection plan.
- d. NS: Also still need to collect substantial damage estimate procedures from each jurisdiction if available.
  - i. HW: Can small communities fall under the County's SDE procedures? And can you share an example of these procedures?
    - 1. NS: Yes, where we know that information, we've included it and yes, we did share an example previously.
- e. BB: Pamlico County has been integrating the HMP with our Community Economic Development Strategy. Looking at how we build and where.
- f. BC and CD: We are pulling mitigation actions for consideration with the NC Flood Resiliency Blueprint.
- g. JF: Craven County using the HMP to inform infrastructure decisions, generator decisions, EOC mitigation, living shoreline project etc.
- h. CC: UNC School of City and Regional planning mentioned there is a national interest in the capability assessments in these plans.

**APPENDIX B: PLANNING PROCESS DOCUMENTATION**

HMPC Meeting 4 Attendance

|   |  |                      |                     |
|---|--|----------------------|---------------------|
| <b>1. Summary</b>                           |  |                      |                     |
| Meeting title                               | 4th Pamlico Sound Regional Hazard Mitigation Planning Team Meeting |                      |                     |
| Attended participants                       | 36   |                      |                     |
| Start time                                  | 1/28/25, 12:33:34 PM   |                      |                     |
| End time                                    | 1/28/25, 1:56:54 PM  |                      |                     |
| Meeting duration                            | 1h 23m 20s   |                      |                     |
| Average attendance time                     | 50m 27s  |                      |                     |
| <b>2. Participants</b>                      |  |                      |                     |
| Name  | First Join   | Last Leave           | In-Meeting Duration |
| Nathan Slaughter                            | 1/28/25, 12:48:43 PM   | 1/28/25, 1:51:19 PM  | 1h 2m 36s           |
| Crew, John (NCEM) (External)                | 1/28/25, 12:48:37 PM   | 1/28/25, 1:51:11 PM  | 1h 2m 33s           |
| Tim White (External)                        | 1/28/25, 12:48:46 PM   | 1/28/25, 1:49:50 PM  | 1h 1m 3s            |
| Linda Marshall                              | 1/28/25, 12:49:07 PM   | 1/28/25, 1:51:30 PM  | 1h 2m 22s           |
| Town of River Bend (Unverified)             | 1/28/25, 12:49:08 PM   | 1/28/25, 12:53:30 PM | 4m 22s              |
| David Linton                                | 1/28/25, 12:49:16 PM   | 1/28/25, 1:51:30 PM  | 1h 2m 13s           |
| Stephen Rea (External)                      | 1/28/25, 12:49:46 PM   | 1/28/25, 1:47:24 PM  | 48m 32s             |
| April Alligood (Unverified)                 | 1/28/25, 12:51:41 PM   | 1/28/25, 1:51:11 PM  | 59m 30s             |
| Charlie Rocci (External)                    | 1/28/25, 12:52:56 PM   | 1/28/25, 1:51:11 PM  | 58m 15s             |
| Shawne Southard (Unverified)                | 1/28/25, 12:52:57 PM   | 1/28/25, 1:49:45 PM  | 56m 47s             |
| Delane Jackson (Unverified)                 | 1/28/25, 12:53:49 PM   | 1/28/25, 1:51:06 PM  | 57m 16s             |
| Town of Grantsboro (Ray Lewis) (Unverified) | 1/28/25, 12:54:44 PM   | 1/28/25, 1:51:25 PM  | 56m 40s             |
| Dreps, Christopher L (External)             | 1/28/25, 12:54:48 PM   | 1/28/25, 1:51:46 PM  | 56m 57s             |
| Michelle Eitner (External)                  | 1/28/25, 12:55:04 PM   | 1/28/25, 1:51:17 PM  | 56m 12s             |
| Aaron Stryker (External)                    | 1/28/25, 12:56:45 PM   | 1/28/25, 1:51:21 PM  | 54m 36s             |
| Hansen, Kimberly                            | 1/28/25, 12:57:09 PM   | 1/28/25, 1:51:09 PM  | 54m                 |
| Moore, Abigail                              | 1/28/25, 12:57:34 PM   | 1/28/25, 1:51:25 PM  | 53m 51s             |
| Austin Brinkley (External)                  | 1/28/25, 12:57:39 PM   | 1/28/25, 1:51:08 PM  | 53m 29s             |
| David Rief (External)                       | 1/28/25, 12:57:48 PM   | 1/28/25, 1:51:12 PM  | 53m 24s             |
| Alisha Dahart (External)                    | 1/28/25, 12:58:18 PM   | 1/28/25, 1:51:39 PM  | 53m 20s             |
| Lynn Davis                                  | 1/28/25, 12:59:25 PM   | 1/28/25, 1:51:16 PM  | 51m 51s             |
| Jayne Calhoun (External)                    | 1/28/25, 1:00:30 PM  | 1/28/25, 1:51:18 PM  | 50m 48s             |
| Fireflies.ai Notetaker William (Unverified) | 1/28/25, 1:00:48 PM  | 1/28/25, 1:56:54 PM  | 56m 6s              |
| read.ai meeting notes (Unverified)          | 1/28/25, 1:00:48 PM  | 1/28/25, 1:55:12 PM  | 54m 23s             |
| Jake Brown (Unverified)                     | 1/28/25, 1:00:51 PM  | 1/28/25, 1:51:07 PM  | 50m 16s             |
| Thompson, Hannah (External)                 | 1/28/25, 1:01:17 PM  | 1/28/25, 1:51:13 PM  | 49m 56s             |
| Beth Bucksot (Unverified)                   | 1/28/25, 1:01:22 PM  | 1/28/25, 1:22:13 PM  | 20m 51s             |
| Mello, John (NCEM) (External)               | 1/28/25, 1:01:28 PM  | 1/28/25, 1:51:15 PM  | 49m 46s             |
| White, Holly B (External)                   | 1/28/25, 1:01:33 PM  | 1/28/25, 1:51:13 PM  | 49m 39s             |
| Connell, Brad (External)                    | 1/28/25, 1:02:16 PM  | 1/28/25, 1:51:11 PM  | 48m 54s             |
| Cole Barrow (Unverified)                    | 1/28/25, 1:02:57 PM  | 1/28/25, 1:51:09 PM  | 48m 12s             |
| Elisabeth Webster (External)                | 1/28/25, 1:03:02 PM  | 1/28/25, 1:54:41 PM  | 51m 39s             |
| Annie Bunnell                               | 1/28/25, 1:03:14 PM  | 1/28/25, 1:51:11 PM  | 47m 56s             |
| Jason Frederick (External)                  | 1/28/25, 1:04:21 PM  | 1/28/25, 1:51:11 PM  | 46m 50s             |
| Beth Bucksot (External)                     | 1/28/25, 1:20:00 PM  | 1/28/25, 1:51:16 PM  | 31m 16s             |
| Chris Seaberg (Unverified)                  | 1/28/25, 1:31:20 PM  | 1/28/25, 1:51:11 PM  | 19m 50s             |

## **JURISDICTIONAL PARTICIPATION AGREEMENTS**

The following letters detail participation agreements and acknowledgements for jurisdictions that were unable to attend formal HMPC meetings or required County support for the planning process.

Needed for Aurora, Chocowinity, Pantego, Peletier, Cove City, Dover, Vanceboro, Arapahoe, Bayboro, Mesic, Stonewall



## B.2 PLANNING STEP 2: INVOLVE THE PUBLIC

**Table B.2 - Public Meeting Topics, Dates, Locations**

| <b>Meeting Title</b> | <b>Meeting Topic</b>   | <b>Meeting Date</b> | <b>Meeting Location</b> |
|----------------------|--|---------------------|-------------------------|
| Public Meeting #1    | 1) Introduction to the planning process and project schedule<br>2) Explanation of mitigation<br>3) Review of hazard identification | August 27, 2024     | Microsoft Teams         |
| Public Meeting #2    | 1) Review draft Hazard Mitigation Plan<br>2) Solicit comments and feedback   | January 28, 2025    | Microsoft Teams         |

PUBLIC MEETING MINUTES, SIGN-IN SHEETS, AND ANNOUNCEMENTS

PUBLIC MEETING 1: AUGUST 27, 2024

**Pamlico Sound**  
2024 Regional Hazard Mitigation Plan Update  
August 27th, 2024

WSP

Pamlico Sound HMP Update | Public Meeting #1 | August 27, 2024

ESP

**APPENDIX B: PLANNING PROCESS DOCUMENTATION**

| 1. Summary                     |  |                     |                     |
|--------------------------------|--|---------------------|---------------------|
| Meeting title                  | Pamlico Sound Regional Hazard Mitigation Plan - Public Meeting |                     |                     |
| Registration page views        | 0  |                     |                     |
| Registered participants        | 0  |                     |                     |
| Canceled registrations         | 0  |                     |                     |
| Attended participants          | 17   |                     |                     |
| Start time                     | 8/27/24, 5:51:12 PM  |                     |                     |
| End time                       | 8/27/24, 6:40:36 PM  |                     |                     |
| Meeting duration               | 49m 23s  |                     |                     |
| Average attendance time        | 26m 34s  |                     |                     |
|                                |  |                     |                     |
| 2. Participants                |  |                     |                     |
| Name                           | First Join   | Last Leave          | In-Meeting Duration |
| Nathan Slaughter               | 8/27/24, 5:57:07 PM  | 8/27/24, 6:40:36 PM | 43m 28s             |
| John Nevel (External)          | 8/27/24, 5:52:02 PM  | 8/27/24, 6:02:53 PM | 10m 50s             |
| Charlie Burgess (External)     | 8/27/24, 5:54:18 PM  | 8/27/24, 6:30:29 PM | 36m 11s             |
| Baker, Carl (NCEM) (External)  | 8/27/24, 5:57:13 PM  | 8/27/24, 6:34:10 PM | 36m 57s             |
| John Flores                    | 8/27/24, 5:57:44 PM  | 8/27/24, 6:34:28 PM | 36m 44s             |
| Ruffins, Ranger                | 8/27/24, 5:58:23 PM  | 8/27/24, 6:30:52 PM | 32m 29s             |
| Austin Brinkley (External)     | 8/27/24, 6:00:03 PM  | 8/27/24, 6:30:47 PM | 30m 44s             |
| Diana Tootle (Unverified)      | 8/27/24, 6:00:14 PM  | 8/27/24, 6:31:14 PM | 30m 59s             |
| Ciara Blosser                  | 8/27/24, 6:01:29 PM  | 8/27/24, 6:06:02 PM | 4m 33s              |
| Katrina Marshall (Unverified)  | 8/27/24, 6:02:07 PM  | 8/27/24, 6:32:26 PM | 30m 19s             |
| Nevel, John                    | 8/27/24, 6:02:35 PM  | 8/27/24, 6:31:13 PM | 28m 37s             |
| Elisabeth Webster (Unverified) | 8/27/24, 6:04:28 PM  | 8/27/24, 6:31:31 PM | 27m 3s              |
| Scott Harvey (Unverified)      | 8/27/24, 6:05:37 PM  | 8/27/24, 6:08:53 PM | 3m 15s              |
| WCTI (Unverified)              | 8/27/24, 6:05:58 PM  | 8/27/24, 6:33:37 PM | 27m 39s             |
| Michelle Eitner (Unverified)   | 8/27/24, 6:06:47 PM  | 8/27/24, 6:32:33 PM | 25m 46s             |
| Jason Frederick (External)     | 8/27/24, 6:06:54 PM  | 8/27/24, 6:31:12 PM | 24m 17s             |
| Scott Harvey (Unverified)      | 8/27/24, 6:09:08 PM  | 8/27/24, 6:31:02 PM | 21m 53s             |

# Pamlico Sound

## Regional Hazard Mitigation Plan

### PUBLIC MEETING

Be part of shaping our future.  
**YOUR VOICE MATTERS!**



VIRTUAL ONLINE EVENT

Register for Free:



Tuesday

**August 27<sup>th</sup>**

6:00 – 7:00 pm  
Online Event

Join us for the first public meeting for the **Pamlico Sound Regional Hazard Mitigation Plan Update**. Your participation is vital to help identify risks, discuss past efforts, and shape the 2024 Plan to improve our community's resilience. Don't miss this chance to contribute your insights and feedback.

#### **Purpose:**

Engage with the community, provide project background, and gather input on hazards and risks.

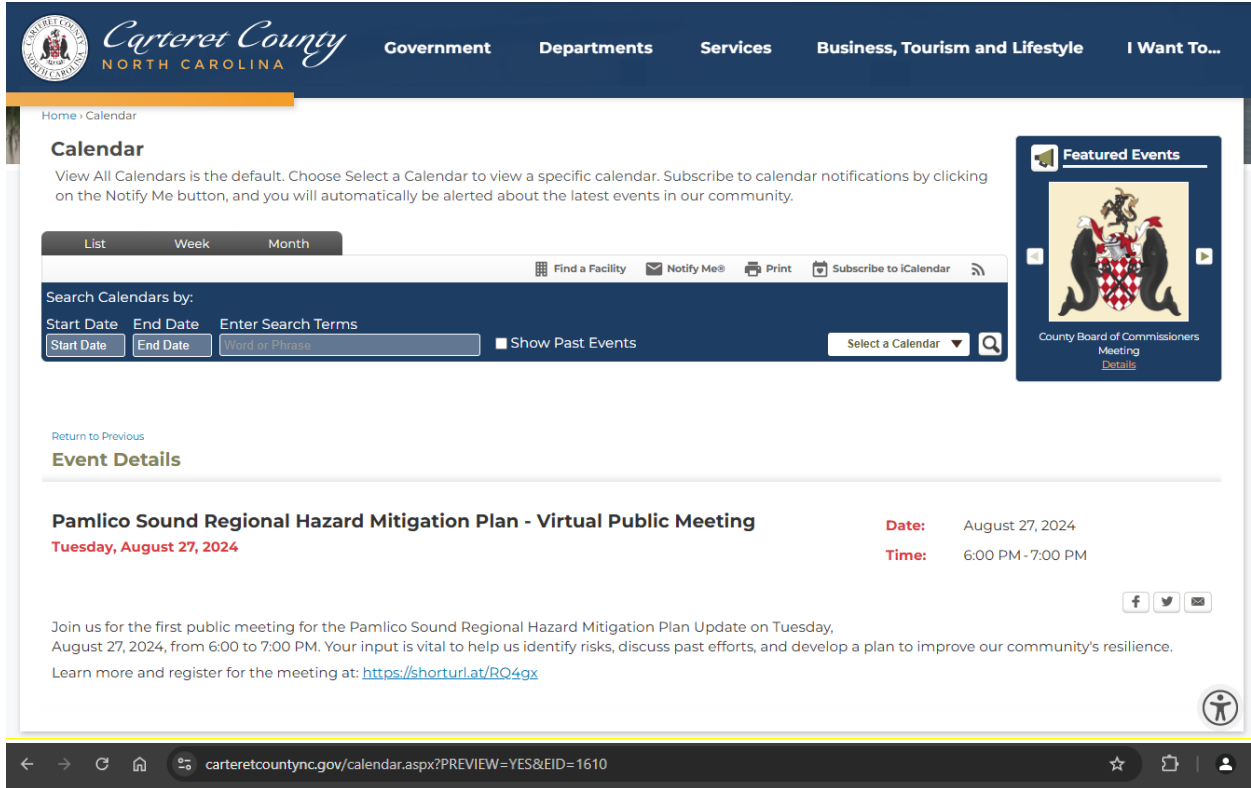
#### **Your Role:**

Share experiences, identify recurring risks, and discuss mitigation actions.

#### **Impact:**

Your feedback is crucial for a plan that reflects our community's needs and enhances the Pamlico Sound Region's resiliency.

REGISTER HERE: [HTTPS://SHORTURL.AT/RQ4GX](https://shorturl.at/RQ4GX)



**Event Details**

**Pamlico Sound Regional Hazard Mitigation Plan - Virtual Public Meeting**  
Tuesday, August 27, 2024

**Date:** August 27, 2024  
**Time:** 6:00 PM - 7:00 PM

Join us for the first public meeting for the Pamlico Sound Regional Hazard Mitigation Plan Update on Tuesday, August 27, 2024, from 6:00 to 7:00 PM. Your input is vital to help us identify risks, discuss past efforts, and develop a plan to improve our community's resilience.  
Learn more and register for the meeting at: <https://shorturl.at/RQ4gx>

# Pamlico Sound

## Regional Hazard Mitigation Plan

**PUBLIC MEETING**

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townofcapecarteret • Follow

townofcapecarteret Help Shape the Future of Our Community!  
Join us for the first public meeting for the Pamlico Sound Regional Hazard Mitigation Plan Update on Tuesday, August 27, 2024, from 6:00 to 7:00 PM. Your input is vital to help identify risks, discuss past efforts, and develop a plan to improve our community's resilience. Learn more and register for the virtual meeting at <https://shorturl.at/RQ4gx>  
20 weeks ago

Likes : 3  
August 21, 2024

Please log in to like and comment.

**Pamlico Sound**  
Regional Hazard Mitigation Plan

**PUBLIC MEETING**  
Be part of shaping our future.  
**YOUR VOICE MATTERS!**

**VIRTUAL ONLINE EVENT**  
Register for Free:  
[QR Code]

**Tuesday August 27<sup>th</sup>**  
6:00 – 7:00 pm  
Online Event

Join us for the first public meeting for the **Pamlico Sound Regional Hazard Mitigation Plan Update**. Your participation is vital to help identify risks, discuss past efforts, and shape the 2024 Plan to improve our community's resilience. Don't miss this chance to contribute your insights and feedback.

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REGISTER HERE: [HTTPS://SHORTURL.AT/RQ4GX](https://shorturl.at/RQ4GX)

Town of Emerald Isle, NC  
August 21, 2024

Virtual Public Meeting: Pamlico Sound Regional Hazard Mitigation Plan

Join us next Tuesday, August 27, 2024, from 6:00 – 7:00 PM for a virtual public meeting to discuss the Pamlico Sound Regional Hazard Mitigation Plan. This is an important opportunity for residents and community members to learn more about the plan, provide input, and ensure that everyone's voice is heard in this process.

Date: Tuesday, August 27, 2024  
Time: 6:00 – 7:00 PM  
Register Here: <https://shorturl.at/RQ4gx>

Let's work together to build a safer, more resilient community! 🙌

#PamlicoSound #HazardMitigation #PublicMeeting #CommunitySafety #emeraldisle See less

**Pamlico Sound**  
Regional Hazard Mitigation Plan

**PUBLIC MEETING**  
Be part of shaping our future.  
**YOUR VOICE MATTERS!**

**VIRTUAL ONLINE EVENT**

**Register for Free:**

**Tuesday August 27<sup>th</sup>**  
6:00 – 7:00 pm  
Online Event

Join us for the first public meeting for the Pamlico Sound Regional Hazard Mitigation Plan Update. Your participation is vital to help identify risks, discuss past efforts, and shape the 2024 Plan to improve our community's resilience. Don't miss this chance to contribute your insights and feedback.

**Purpose:**  
Engage with the community, provide project background, and gather input on hazards and risks.

**Your Role:**  
Share experiences, identify recurring risks, and discuss mitigation actions.

**Impact:**  
Your feedback is crucial for a plan that reflects our community's needs and enhances the Pamlico Sound Region's resiliency.

REGISTER HERE: [HTTPS://SHORTURL.AT/RQ4GX](https://shorturl.at/RQ4GX)

townemeraldisle • Follow

townemeraldisle Virtual Public Meeting: Pamlico Sound Regional Hazard Mitigation Plan

Join us next Tuesday, August 27, 2024, from 6:00 – 7:00 PM for a virtual public meeting to discuss the Pamlico Sound Regional Hazard Mitigation Plan. This is an important opportunity for residents and community members to learn more about the plan, provide input, and ensure that everyone's voice is heard in this process.

**Date:** Tuesday, August 27, 2024  
**Time:** 6:00 – 7:00 PM  
**Register Here:**  
<https://shorturl.at/RQ4gx>

Let's work together to build a safer, more resilient community! 🤝

1 like  
August 21, 2024



## City of Washington, NC's Post



City of Washington, NC  
August 27, 2024 · 🌐



All are invited to join a virtual public meeting for the Pamlico Sound Regional Hazard Mitigation Plan this evening, Tuesday, August 27, 2024, from 6:00 – 7:00 PM.

The purpose of this meeting is to engage with the community, provide project background, and gather input on hazards and risks.

Register for this public meeting here <https://bit.ly/3Z3HLPk>

**Pamlico Sound**  
**Regional Hazard Mitigation Plan**

**PUBLIC MEETING**  
Be part of shaping our future.  
**YOUR VOICE MATTERS!**

**VIRTUAL ONLINE EVENT**

**Register for Free:**

**Tuesday**  
**August 27<sup>th</sup>**  
6:00 – 7:00 pm  
Online Event

Join us for the first public meeting for the **Pamlico Sound Regional Hazard Mitigation Plan Update**. Your participation is vital to help identify risks, discuss past efforts, and shape the 2024 Plan to improve our community's resilience. Don't miss this chance to contribute your insights and feedback.


**Purpose:**  
Engage with the community, provide project background, and gather input on hazards and risks.

**Your Role:**  
Share experiences, identify recurring risks, and discuss mitigation actions.

**Impact:**  
Your feedback is crucial for a plan that reflects our community's needs and enhances the Pamlico Sound Region's resiliency.

REGISTER HERE: [HTTPS://SHORTURL.AT/RQ4GX](https://shorturl.at/RQ4GX)

← **Post**

 **Morehead City, NC**  
@MoreheadCityGov

Join us for the first public meeting for the Pamlico Sound Regional Hazard Mitigation Plan Update on Aug. 27, from 6-7 p.m. Your input will help identify risks, discuss past efforts, and develop a plan.


Learn more and register for the virtual meeting: [shorturl.at/RQ4gx](https://shorturl.at/RQ4gx)

# Pamlico Sound

## Regional Hazard Mitigation Plan


### PUBLIC MEETING

Be part of shaping our future.  
**YOUR VOICE MATTERS!**



VIRTUAL ONLINE EVENT

**Register for Free:**



Tuesday  
**August 27<sup>th</sup>**  
6:00 - 7:00 pm  
Online Event

Join us for the first public meeting for the **Pamlico Sound Regional Hazard Mitigation Plan Update**. Your participation is vital to help identify risks, discuss past efforts, and shape the 2024 Plan to improve our community's resilience. Don't miss this chance to contribute your insights and feedback.

**Purpose:**  
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Share experiences, identify recurring risks, and discuss mitigation actions.

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Your feedback is crucial for a plan that reflects our community's needs and enhances the Pamlico Sound Region's resiliency.

REGISTER HERE: [HTTPS://SHORTURL.AT/RQ4GX](https://shorturl.at/RQ4GX)

PUBLIC MEETING 2: JANUARY 28, 2025

**Pamlico Sound Regional Hazard Mitigation Plan – Public Meeting**

January 28, 2025  
Virtual – Microsoft Teams

NOTE: THIS MAP IS FOR REFERENCE ONLY

Legend

- Beaufort County
- Carteret County
- Craven County
- Pamlico County

WSP

ESP

Pamlico Sound HMP Update | Public Meeting | January 28, 2025

Pamlico Sound Regional Hazard Mitigation Plan

Public Meeting 1/28/25 - Public Meeting

Virtual/Teams Meeting

- Participants:
  - Nathan Slaughter, ESP
  - David Bone – Eastern Carolina COG
  - Marie Spain – Town of Stonewall
- Contracted by NCEM as prime contractor
- Working in this region for 15+ years
- List of participating municipalities
- Meeting purpose
- Mitigation overview (definition, 2 types, techniques)
- Mitigation technique examples
- Why do we do the update?
  - Changing risk
  - Evolving risks
  - Maintaining compliance
  - Enhancing resilience & preparedness
- Communities are continuing to grow = more people and assets at risk
- Including man-made, technological hazards
- Anticipated increase in frequency and magnitude (FEMA requires) - what does this mean for the community
- Growth trends – where and how are we growing? Increased development also increases specific challenges
- Remain eligible – DMA 2000 (federal legislation that ties FEMA pots of money to hazard mitigation plans)
  - FMA
  - BRIC
  - HMGP – After a disaster, NC is looking at significant amount of funding post-Helene; every county is going to eligible; \$1.5 billion available
    - Well positioned for funding
- Improved preparedness – Sustained continuity
- Planning process
  - Planning Committee
  - Public outreach
  - Public meeting

- Planning process continue now
  - Wrapping up in the next few weeks
- Hazard ID – what can happen here? What do they do? What’s our capacity to do anything about these hazards?
- PRI Index – a few lower risk hazards
- Next steps
  - Draft plan coming soon – will be on regional plan website
  - Communities will start working to adopt
- Questions:
  - DB: how can the COG help?
    - NS: Review plan and provide comments from regional coordination perspective, share with stakeholders that you think would be interested
  - DB: are there regional actions?
    - NS: most are local but there may be a few regional in nature – definitely take a look
  - DB: how can we see existing mitigation actions
    - NS: Pulled up Pamlico Sound HMP website and showed how to view previous plan
  - MS: will you please send the sample adoption resolution
    - NS: Yes as soon as we have the draft plan available

## Town of Oriental, NC's Post



Town of Oriental, NC

January 28 at 3:05 PM · 🌐



We will be hosting a virtual public meeting for the Pamlico Sound Regional Hazard Mitigation Plan on the evening of Tuesday, January 28, 2025 from 6:00-7:00 PM.

Registration information is provided below:

<https://events.teams.microsoft.com/.../62c4a159-6172-40e5...>

The purpose of this meeting will be to provide an overview of the draft plan and provide more information about how the public can view the draft and provide feedback on the document.



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### Community

- Beaufort Emergency Alerts
- Golf Carts
- Hurricane/Flood Preparedness
- Rental Facilities
- Report a Streetlight Repair
- Request Maintenance

### Upcoming Events

- Easter Sunday**  
Sun, Apr 20 2025, All day
- Last Day of School**  
Fri, Jun 6 2025, 5 - 6pm

[View the Calendar](#)

### Contact Information



**Phone Number**  
(252) 728-2141

## Pamlico Sound Regional Hazard Mitigation Plan Public Meeting

News Release Date: 01-27-2025

[Back to News](#)

Tue, Jan 28 2025, 6 - 7pm

[Add to your calendar +](#)

[Back to Calendar](#)

### Pamlico Sound Regional Hazard Mitigation Plan



### Pamlico Sound Regional Hazard Mitigation Plan Public Meeting

The Pamlico Sound Regional Hazard Mitigation Plan is a comprehensive document for Carteret, Beaufort, Craven, and Pamlico counties and their municipalities to prepare for, respond to, and recover from disasters and emergencies. This plan is created in accordance with FEMA requirements to remain eligible for federal disaster assistance and is updated every five years.

The 2025 plan is nearing completion, and the planning consultants are hosting a virtual public meeting for the Pamlico Sound Regional Hazard Mitigation Plan on the evening of Tuesday, **January 28, 2025 from 6:00-7:00 PM.**

Registration information is provided below:

<https://events.teams.microsoft.com/event/62c4a159-6172-40e5-9611-704ee7102dd8@f7f3568d-363f-4e58-a4d8-1c07143b09fb>

The purpose of this meeting will be to provide an overview of the draft plan and provide more information about how the public can view the draft and provide feedback on the document.



## Beaufort County NC Emergency Services's Post

**Beaufort County NC Emergency Services**  
January 24 at 2:01 PM · 🌐

There will be a be a virtual public meeting for the Pamlico Sound Regional Hazard Mitigation Plan on the evening of Tuesday, January 28, 2025 from 6:00-7:00 PM.

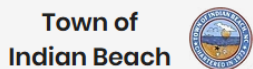
Registration information is provided below:  
<https://events.teams.microsoft.com/.../62c4a159-6172-40e5...>

The purpose of this meeting will be to provide an overview of the draft plan and provide more information about how the public can view the draft and provide feedback on the document.

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Microsoft Virtual Events Powered by Teams

Send message

1 1 share



Home Town Services Emergency Preparation Contact Us

### Upcoming :

The Pamlico Sound Regional Hazard Mitigation Plan will hold a virtual public meeting to provide information on how the public can review and provide input on the revised mitigation plan Tuesday January 28th from 6:00 PM to 7:00 PM.

Registration information is provided below:  
<https://events.teams.microsoft.com/event/62c4a159-6172-40e5-9611-704ee7f02dd8@f7f3568d-363f-4e58-a4d8-1c07f43b09fb>



OTHER PUBLIC OUTREACH EFFORTS

PLAN WEBSITE

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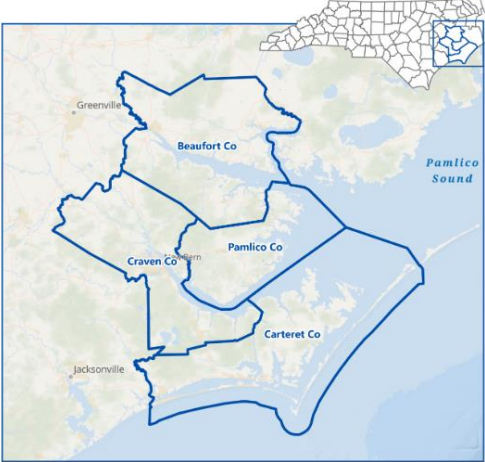

## Pamlico Sound Regional Hazard Mitigation Plan

Welcome to the website for the 2024 update of the Pamlico Regional Hazard Mitigation Plan.

Beaufort, Carteret, Craven, and Pamlico Counties and incorporated communities are updating the Pamlico Sound Regional Hazard Mitigation Plan. This plan update is required for all communities to maintain eligibility for pre- and post-disaster mitigation funding from FEMA. This effort will also help the counties and communities to identify hazard risks, understand vulnerability, and develop ways to proactively mitigate risk. Public input is vital to understanding local risks and mitigation opportunities.

On this website you can find information about past and upcoming planning meetings, draft documents, and a survey on hazard risks and vulnerabilities, as well as a way to provide comments to the planning team. Check back for updates and new information throughout the planning process.

Check out the [Pamlico Sound Hazard Mitigation Plan: Key Areas](#).



→ TAKE THE SURVEY

## Meeting Materials

Check here for meeting announcements, presentation, and meeting notes.

### Project Kickoff Meeting - 6/12/24

- [Presentation](#)
- [Meeting Minutes](#)

### HMPC Meeting #2 - 10/29/24

- [Presentation](#)
- [Meeting Minutes](#)
- [Menti Poll Results](#)
- [Mitigation Action Worksheet](#)

### HMPC Meeting #3 - 12/4/24

- [Presentation](#)
- [Meeting Minutes](#)
- [Menti Poll Results](#)
- [Existing Mitigation Action Plans](#)

## Project Updates

Posted here when available.

#### [Project Timeline](#)

|                               |                   |
|-------------------------------|-------------------|
| Project Kickoff Date          | February 26, 2024 |
| Stakeholder Kickoff Meeting   | June 12, 2024     |
| Public Meeting #1             | August 27, 2024   |
| Proposed Delivery of Draft    | January 17, 2025  |
| Public Meeting #2             | Date TBD          |
| Existing Plan Expiration Date | June 15, 2025     |

#### [Draft Documents](#)

Check back for updates throughout the planning process.

[Pamlico Sound RHMP Update HIRA Draft - October ...](#)

## PLAN WEBSITE AND SURVEY OUTREACH

[Home](#) > News Flash

**Administration**

---

Posted on: August 1, 2024

### Input needed for Pamlico Sound Regional Hazard Mitigation Plan update

Beaufort County, Carteret County, Craven County, Pamlico County, and their incorporated communities are updating the Pamlico Sound Regional Hazard Mitigation Plan. Local governments are required to prepare and update hazard mitigation plans to be eligible for FEMA hazard mitigation assistance grants.

Public input is critical to the planning process. Please take a few minutes to complete a brief public survey to provide your input on hazard risks and mitigation options: <https://forms.office.com/e/00Uq2Aup2r>

For more information about the plan update, visit the project website at [www.PamlicoSoundHMP.com](http://www.PamlicoSoundHMP.com). On this site you will find information about upcoming and past Hazard Mitigation Planning Committee meetings and public meetings, a link for the public survey, draft documents, and other mitigation planning resources.

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- Department of Social Services
- Emergency Services
- Health Department
- Public Works
- Press Releases
- Tax Office
- Board of Commissioners Updates
- Beaufort County Briefly
- Board of Elections



← Previous  
County participates in annual Safe and Sound Week

Next ⇒  
Manager's Recommended Budget Presented to Board

Carteret County

NORTH CAROLINA

Government

Departments

Services

Business, Tourism and Lifestyle

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**News Releases**

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Posted on: June 18, 2024

### Public Survey: Pamlico Sound Regional Hazard Mitigation Plan

Beaufort County, Carteret County, Craven County, Pamlico County, and their incorporated communities are updating the Pamlico Sound Regional Hazard Mitigation Plan. Local governments are required to prepare and update hazard mitigation plans to be eligible for FEMA hazard mitigation assistance grants.

Public input is critical to the planning process. Please take a few minutes to complete a brief public survey to provide your input on hazard risks and mitigation options. Click [here](#) or scan the QR code for the survey.

For more information about the plan update, visit the project website at [www.PamlicoSoundHMP.com](http://www.PamlicoSoundHMP.com). On this site you will find information about upcoming and past Hazard Mitigation Planning Committee meetings and public meetings, a link for the public survey, draft documents, and other mitigation planning resources.

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- All Categories
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- Sheriff
- News Releases
- Board of Elections



 **Carteret County Government**  
3 days ago · 🌐

The Pamlico Sound Regional Hazard Mitigation Plan update is underway and we need your input! Respond to this survey to share your concerns about hazard risks and ideas for mitigation. Visit [www.pamlicosoundhmp.com](http://www.pamlicosoundhmp.com) for more information about the plan update.

Survey link: <https://forms.office.com/e/00Uq2Aup2r>

## Pamlico Sound Regional Hazard Mitigation Plan Public Survey



  3  7

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[Home](#) > Pamlico Sound Regional Hazard Mitigation Plan Public Survey

Font Size

## Pamlico Sound Regional Hazard Mitigation Plan Public Survey

### Pamlico Sound Regional Hazard Mitigation Plan Public Survey

Beaufort, Carteret, Craven, and Pamlico Counties and their incorporated communities are beginning to update the Pamlico Sound Regional Hazard Mitigation Plan to identify and assess our region's risks from hazards such as flooding, drought, heat, hurricane, severe weather, winter weather, and other hazards. This plan will help determine how to best minimize or manage those risks. This survey is an opportunity for you to share your opinions and participate in the mitigation planning process. The information you provide will help us better understand local hazard risks and problems and can lead to mitigation activities that help lessen the impacts of future hazards.

Please help us by completing this survey by August 30, 2024.

Hazard Mitigation Survey

Or Access the public survey here: [https://forms.office.com/pages/responsepage.aspx?id=VUljPO\\_iBUKlpZZYpAKZmz1r9gFHJkhNkCYoFGqYXXVUQ1dDS0VNMDdYOTNISDILSIZVUkgwSzZWNiQIQCN0PWcu](https://forms.office.com/pages/responsepage.aspx?id=VUljPO_iBUKlpZZYpAKZmz1r9gFHJkhNkCYoFGqYXXVUQ1dDS0VNMDdYOTNISDILSIZVUkgwSzZWNiQIQCN0PWcu)

[https://forms.office.com/pages/responsepage.aspx?id=VUljPO\\_iBUKlpZZYpAKZmz1r9gFHJkhNkCYoFGqYXXVUQ1dDS0VNMDdYOTNISDILSIZVUkgwSzZWNiQIQCN0PWcu](https://forms.office.com/pages/responsepage.aspx?id=VUljPO_iBUKlpZZYpAKZmz1r9gFHJkhNkCYoFGqYXXVUQ1dDS0VNMDdYOTNISDILSIZVUkgwSzZWNiQIQCN0PWcu)



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I Want To...

## HOME PAGE

# Pamlico Sound Regional Hazard Mitigation Plan

News Release Date:08-29-2024

[Back to News](#)

### Welcome to the website for the 2024 update of the Pamlico Regional Hazard Mitigation Plan.

Beaufort, Carteret, Craven, and Pamlico Counties and incorporated communities are updating the Pamlico Sound Regional Hazard Mitigation Plan. This plan update is required for all communities to maintain eligibility for pre- and post-disaster mitigation funding from FEMA. This effort will also help the counties and communities to identify hazard risks, understand vulnerability, and develop ways to proactively mitigate risk. Public input is vital to understanding local risks and mitigation opportunities. On this website you can find information about past and upcoming planning meetings, draft documents, and a survey on hazard risks and vulnerabilities, as well as a way to provide comments to the planning team. Check back for updates and new information throughout the planning process.

## Related Links

[Pamlico Sound Regional Hazard Mitigation Plan](#)



Beaufort County, Carteret County, Craven County, Pamlico County, and their incorporated communities are updating the Pamlico Sound Regional Hazard Mitigation Plan. Local governments are required to prepare and update hazard mitigation plans to be eligible for FEMA hazard mitigation assistance grants.

Public input is critical to the planning process.

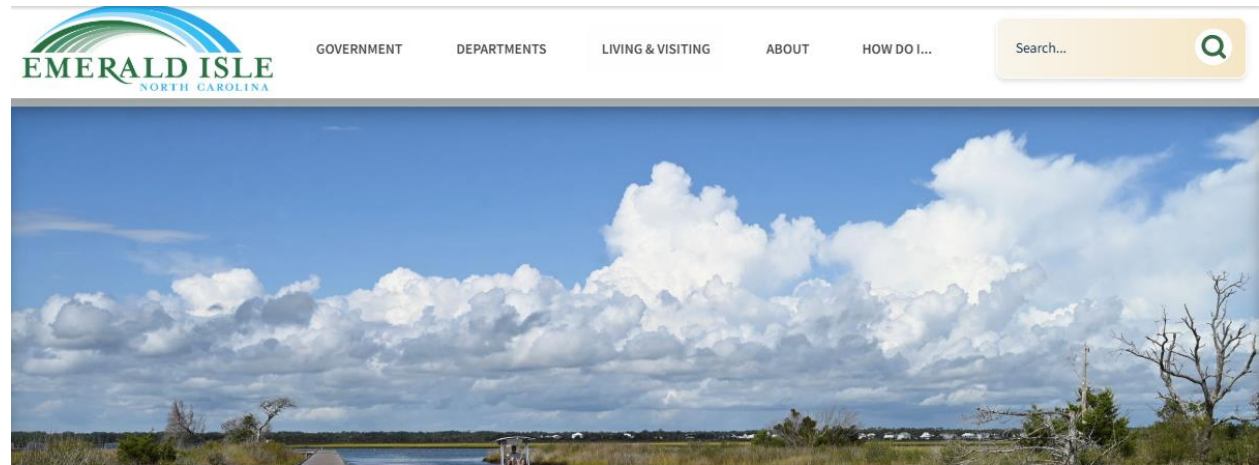
Please take a few minutes to complete a brief public survey to provide your input on hazard risks and mitigation options. Click [here](#) for the survey.

For more information about the plan update, visit the project website at [www.PamlicoSoundHMP.com](http://www.PamlicoSoundHMP.com). On this site you will find information about upcoming and past Hazard Mitigation Planning Committee meetings and public meetings, a link for the public survey, draft documents, and other mitigation planning resources.

Town of Cedar Point | 427 Sherwood Avenue | Swansboro, NC 28584 US

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Posted on: August 13, 2024

### The Pamlico Sound Regional Hazard Mitigation Plan

Beaufort County, Carteret County, Craven County, Pamlico County, and their incorporated communities are updating the Pamlico Sound Regional Hazard Mitigation Plan. Local governments are required to prepare and update hazard mitigation plans to be eligible for FEMA hazard mitigation assistance grants.

Public input is critical to the planning process. Please take a few minutes to complete a brief public survey to provide your input on hazard risks and mitigation options. Click [here](#) or scan the QR code for the survey.



For more information about the plan update, visit the project website at [www.PamlicoSoundHMP.com](http://www.PamlicoSoundHMP.com). On this site you will find information about upcoming and past Hazard Mitigation Planning Committee meetings and public meetings, a link for the public survey, draft documents, and other mitigation planning resources.


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## Pamlico Sound Regional Hazard Mitigation Plan

Beaufort County, Carteret County, Craven County, Pamlico County, and their incorporated communities are updating the Pamlico Sound Regional Hazard Mitigation Plan. Local governments are required to prepare and update hazard mitigation plans to be eligible for FEMA hazard mitigation assistance grants.

Public input is critical to the planning process. Please take a few minutes to complete a brief public survey to provide your input on hazard risks and mitigation options. [Click here for the Pamlico Sound Regional Hazard Mitigation Plan survey.](#)

[For more information about the plan update, visit the project website at \[www.PamlicoSoundHMP.com\]\(http://www.PamlicoSoundHMP.com\).](#) On this site you will find information about upcoming and past Hazard Mitigation Planning Committee meetings and public meetings, a link for the public survey, draft documents, and other mitigation planning resources.



Town of Morehead City

August 5 at 8:59 AM · 🌐

The Pamlico Sound Regional Hazard Mitigation Plan update is underway and we need your input! Respond to this survey to share your concerns about hazard risks and ideas for mitigation. Visit [www.pamlicosoundhmp.com](http://www.pamlicosoundhmp.com) for more information about the plan update.

Survey link: <https://forms.office.com/e/00Uq2Aup2r>



👍❤️ 2

1 share

👍 Like

💬 Comment



City of Washington, NC

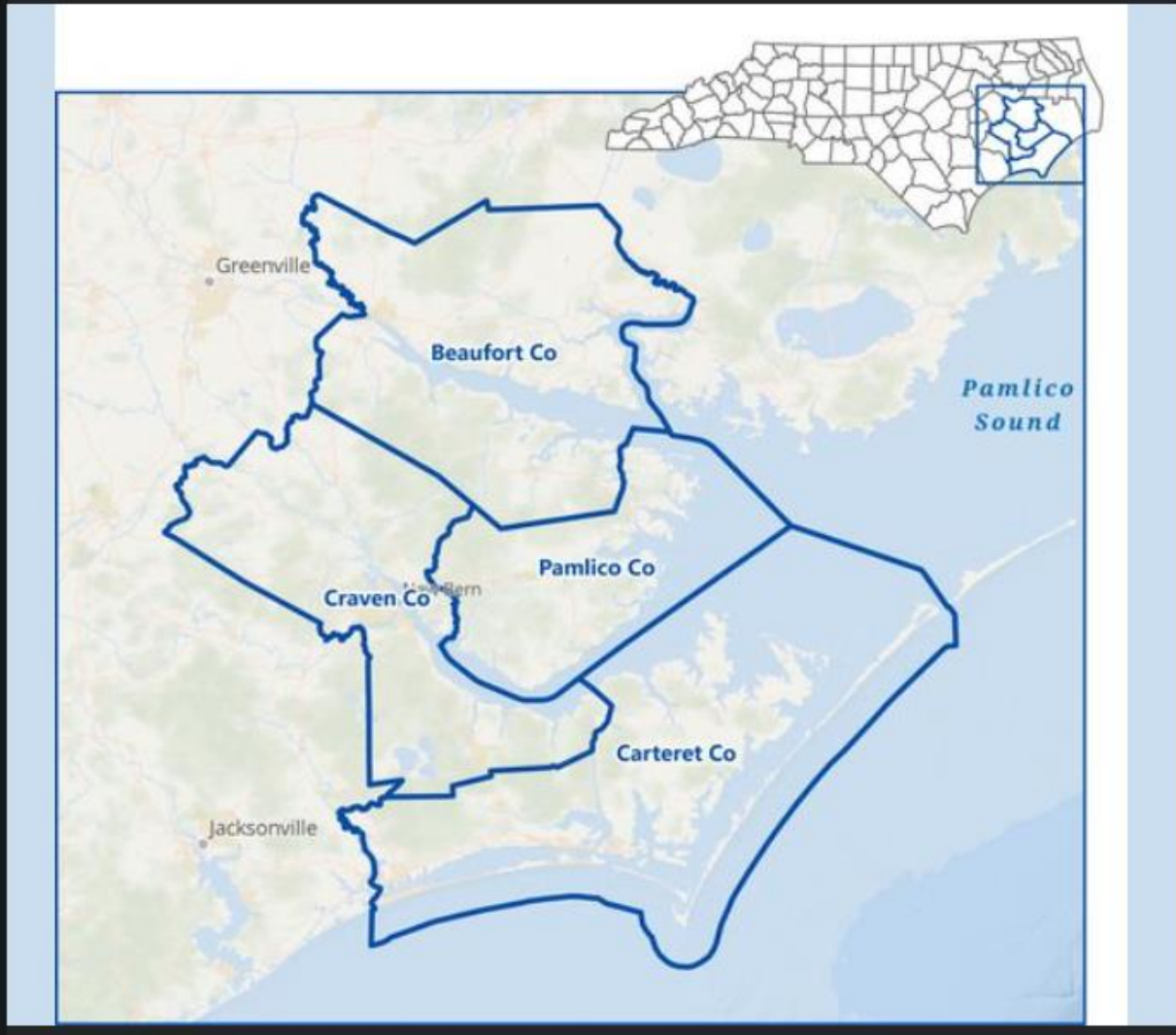
6 hours ago · 🌐



The Pamlico Sound Regional Hazard Mitigation Plan update is underway and we need your input! Respond to this survey to share your concerns about hazard risks and ideas for mitigation.

Visit [www.pamlicosoundhmp.com](http://www.pamlicosoundhmp.com) for more information about the plan update.

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Pine Knoll Shores Community Members,

Beaufort County, Carteret County, Craven County, Pamlico County, and their incorporated communities are updating the Pamlico Sound Regional Hazard Mitigation Plan. Local governments are required to prepare and update hazard mitigation plans to be eligible for FEMA hazard mitigation assistance grants.

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Survey link: <https://forms.office.com/e/00Uq2Aup2r>



## PUBLIC SURVEY

The Pamlico Sound Region distributed a public survey, shown below, that requested public input into the Hazard Mitigation Plan planning process and the identification of mitigation activities that could lessen the risk and impact of future flood hazard events. The survey was announced at the first public meeting, provided via a link on participating jurisdictions websites and social media accounts, and made available online on the plan website.

### Pamlico Sound Regional Hazard Mitigation Plan Public Survey

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Beaufort, Carteret, Craven, and Pamlico Counties and their incorporated communities are beginning to update the Pamlico Sound Regional Hazard Mitigation Plan to identify and assess our region's risks from hazards such as flooding, drought, heat, hurricane, severe weather, winter weather, and other hazards. This plan will help determine how to best minimize or manage those risks. This survey is an opportunity for you to share your opinions and participate in the mitigation planning process. The information you provide will help us better understand local hazard risks and problems and can lead to mitigation activities that help lessen the impacts of future hazards. **Please help us by completing this survey by August 30, 2024 and returning it to:**

WSP - Attn: David Stroud, 4021 Stirrup Creek Drive, Suite 100, Durham, NC 27703  
Or by email to: david.stroud@wsp.com

|   |   |
|---|---|
| <p>1. Where do you live?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Beaufort County</li> <li><input type="checkbox"/> Carteret County</li> <li><input type="checkbox"/> Craven County</li> <li><input type="checkbox"/> Pamlico County</li> <li><input type="checkbox"/> I live outside of the Pamlico Sound Region but work or recreate in the region.</li> <li><input type="checkbox"/> Other: _____</li> </ul> <p>2. Have you ever experienced or been impacted by a hazard or disaster in the Pamlico Sound Region?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> </ul> <p>If yes, please explain your experience &amp; where it occurred.</p> <p>3. On a scale of 1-5, where 1 = not at all concerned and 5 = very concerned, how concerned are you about the possibility of your community being impacted by a hazard event?</p> | <p>4. Please review the list of hazards below and rate each hazard from 0-3 based on how much risk you think it poses to your community.<br/>0 = no risk, 1 = low, 2 = moderate, 3 = high</p> <ul style="list-style-type: none"> <li>___ Coastal Hazards</li> <li>___ Drought</li> <li>___ Earthquake</li> <li>___ Extreme Heat</li> <li>___ Flood</li> <li>___ Hurricane</li> <li>___ Landslide</li> <li>___ Severe Weather</li> <li>___ Winter Storm</li> <li>___ Tornado</li> <li>___ Wildfire</li> </ul> <p>5. Is your home located in a floodplain?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> <li><input type="checkbox"/> No, but I still experience flooding</li> <li><input type="checkbox"/> I don't know</li> </ul> <p>6. Do you have flood insurance for your home and/or personal property?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No</li> <li><input type="checkbox"/> I don't know</li> </ul> <p>7. If you do NOT have flood insurance, what is the reason?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> It's too expensive</li> <li><input type="checkbox"/> I never really considered it</li> <li><input type="checkbox"/> I don't need it because my home is elevated or otherwise protected</li> <li><input type="checkbox"/> Other: _____</li> </ul> |
|---|---|

## Pamlico Sound Regional Hazard Mitigation Plan Public Survey

8. Have you taken any actions to protect your home or neighborhood from hazards?

- Yes
- No

If yes, please explain what you implemented.

9. Do you know what government office to contact to learn more about your hazard risks and how to reduce vulnerability in your area?

- Yes
- No

10. What are some steps your local government could take to reduce the risk of future hazard damages in your neighborhood?

11. What is the best way for you to receive information about how to make your home or neighborhood more resistant to flood damage? Please select your top three choices.

- Newspaper
- TV Ads/Programming
- Radio Ads/Programming
- Public library
- Public workshop/meetings
- School meetings
- Mail
- Email
- Text message
- Local government website
- Local government social media

12. Many community-wide activities can reduce our risk from hazards. These activities generally fall into one of six broad categories. Please rank these categories from 1 (most important) to 6 (least important) by how important you think each one is for your community to consider pursuing.

— **Prevention:** administrative and regulatory actions, plans, policies, and ordinances that influence how land is developed and buildings are built. *Examples include planning and zoning, building codes, open space preservation, land use, and floodplain regulations.*

— **Property Protection:** actions that involve the modification of existing buildings to protect them from a hazard or remove them from a hazardous area. *Examples include acquisition, relocation, elevation, structural retrofits, and storm shutters.*

— **Natural Resource Protection:** actions that minimize hazard losses and preserve or restore the functions of natural systems. *Examples include floodplain protection, habitat preservation, slope stabilization, stream buffers, wetland and marsh protection, and forest management.*

— **Structural Projects:** actions that lessen the impact of a hazard by modifying the natural progression of a hazard. *Examples include dams, levees, floodwalls, berms, drainage infrastructure, detention/retention basins, channel modifications, retaining walls, and storm sewers.*

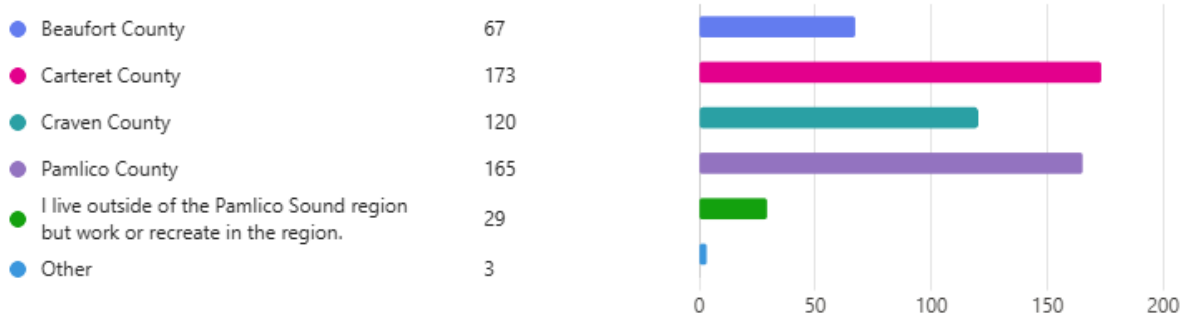
— **Emergency Services:** actions that protect people and property during and immediately after a hazard event. *Examples include warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems.*

— **Public Education and Awareness:** actions to inform the public about hazards and techniques they can use to protect themselves and their property. *Examples include outreach projects, school education programs, library materials, and demonstration events.*

The Region received 558 responses to the survey. Questions and responses are summarized in Figure B.1 through Figure B.10. Detailed survey response data was shared with the HMPC during the planning process.

**Figure B.1 – Survey Response, County of Residence**

1. Where do you live?



**Figure B.2 – Survey Response, Past Hazard Impact**

2. Have you ever experienced or been impacted by a hazard or disaster in the Pamlico Sound Region?



**Figure B.3 – Survey Response, Past Hazard Experience**

3. If you answered "Yes" to question 2, please explain your experience and where it occurred.

[More details](#)



**Figure B.4 – Survey Response, Concern About Hazard Impacts**

4. On a scale of 1-5, how concerned are you about the possibility of your community being impacted by a hazard event? [More details](#)





**Figure B.5 – Survey Response, Hazard Risk Ratings**

5. Please review the list of hazards below and rate each hazard based on how much risk you think it poses to your community.

[More details](#)

● No risk ● Low risk ● Moderate risk ● High risk

Coastal Hazards (Erosion, Rip Current, Sea Level Rise)

Drought

Earthquake

Extreme Heat

Flood

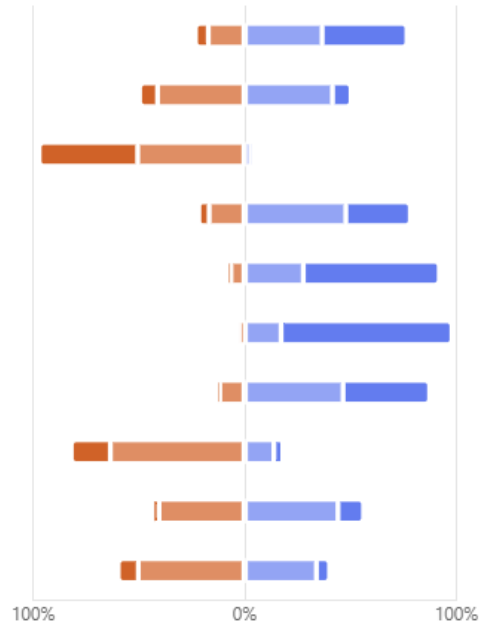
Hurricane

Severe Weather (Thunder-storm, lightning, hail)

Winter Storm

Tornado

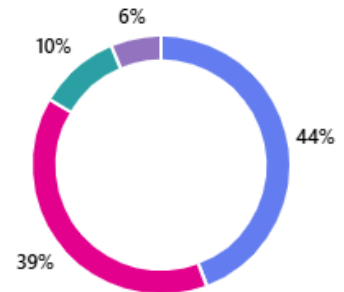
Wildfire



**Figure B.6 – Survey Response, Home in Floodplain**

6. Is your home located in a floodplain?

|                                       |     |
|---------------------------------------|-----|
| ● Yes                                 | 246 |
| ● No                                  | 218 |
| ● No, but I still experience flooding | 57  |
| ● I don't know                        | 35  |



**Figure B.7 – Survey Response, Flood Insurance**

7. Do you have flood insurance for your home and/or personal property?

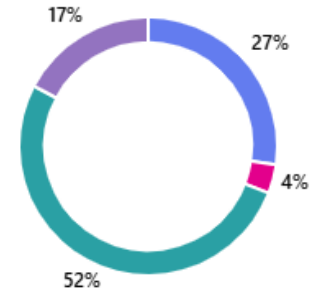
|                |     |
|----------------|-----|
| ● Yes          | 334 |
| ● No           | 209 |
| ● I don't know | 13  |



**Figure B.8 – Survey Response, No Flood Insurance Explanation**

8. If you do NOT have flood insurance, what is the reason?

|  |     |
|--|-----|
| ● It's too expensive   | 60  |
| ● I never really considered it                                       | 8   |
| ● I don't need it because my home is elevated or otherwise protected | 114 |
| ● Other  | 38  |



**Figure B.9 – Survey Response, Personal Actions Taken for Mitigation**

9. Have you taken any actions to protect your home or neighborhood from hazards?

|       |     |
|-------|-----|
| ● Yes | 341 |
| ● No  | 215 |

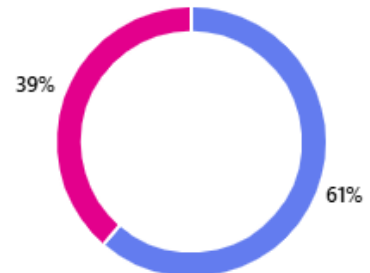


Figure B.10 – Survey Response, Personal Actions Taken for Mitigation, Details

10. If you answered "Yes" to question 9, what actions have you implemented?

[More details](#)

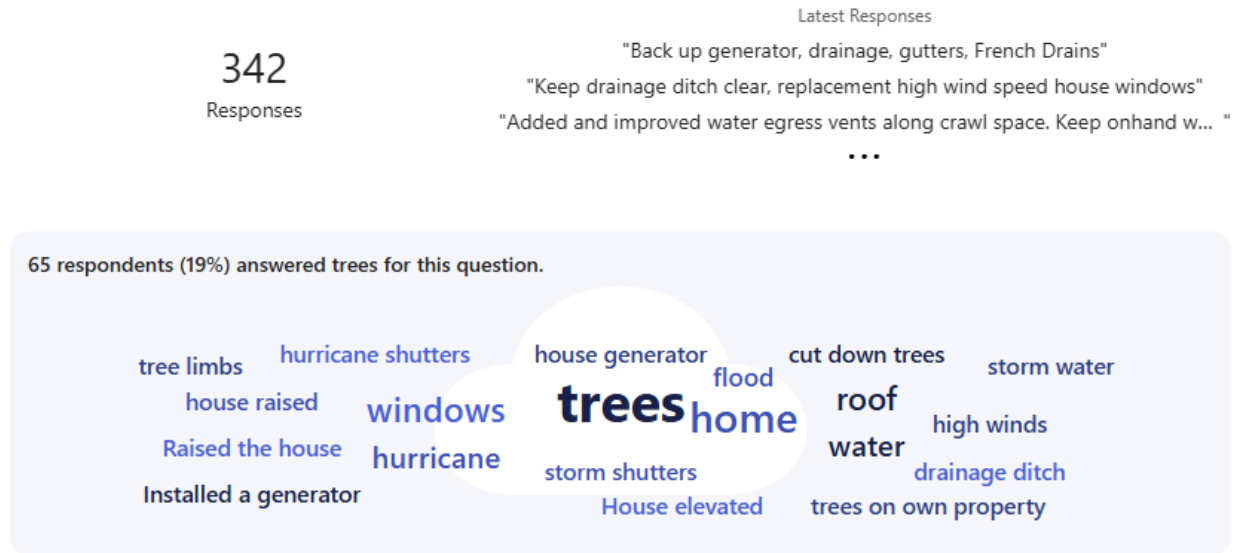


Figure B.11 – Survey Response, Knowledge of Where to Find Hazard Information

11. Do you know what government office to contact to learn more about your hazard risks and how to reduce vulnerability in your area?

[More details](#)



Figure B.12 - Survey Response, Recommendations for Mitigation

12. What are some steps your local government could take to reduce the risk of future hazard damages in your neighborhood? [More details](#)

399  
Responses

Latest Responses

"Treat climate change as our responsibility!"  
"Live in River Bend, badly need a second / third drive-able escape route to Rt... "  
"Prompt notifications/information via cellphones, emails, direct police contacts."  
...

45 respondents (11%) answered road for this question.

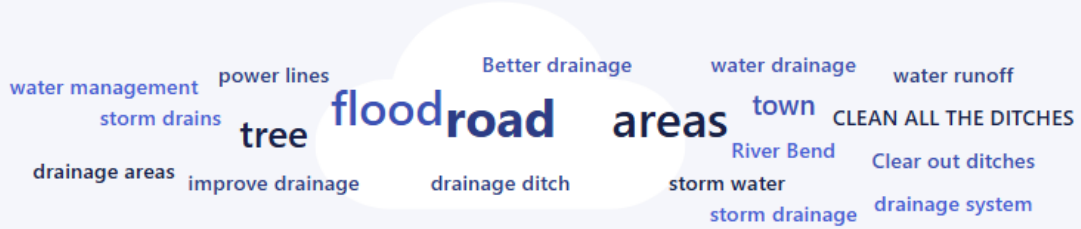


Figure B.13 – Survey Response, Preferred Mitigation Categories

13. Many community-wide activities can reduce our risk from hazards. These activities generally fall into one of the following six broad categories:

- **Prevention:** administrative and regulatory actions, plans, policies, and ordinances that influence how land is developed and buildings are built. *Examples include planning and zoning, building codes, open space preservation, land use, and floodplain regulations.*
- **Property Protection:** actions that involve the modification of existing buildings to protect them from a hazard or remove them from a hazardous area. *Examples include acquisition, relocation, elevation, structural retrofits, and storm shutters.*
- **Natural Resource Protection:** actions that minimize hazard losses and preserve or restore the functions of natural systems. *Examples include floodplain protection, habitat preservation, slope stabilization, stream buffers, wet land and marsh protection, and forest management.*
- **Structural Projects:** actions that lessen the impact of a hazard by modifying the natural progression of a hazard. *Examples include dams, levees, floodwalls, berms, drainage infrastructure, detention/retention basins, channel modifications, retaining walls, and storm sewers.*
- **Emergency Services:** actions that protect people and property during and immediately after a hazard event. *Examples include warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems.*
- **Public Education and Awareness:** actions to inform the public about hazards and techniques they can use to protect themselves and their property. *Examples include outreach projects, school education programs, library materials, and demonstration events.*

[More details](#)

Please rank these categories by how important you think each one is for your community to consider pursuing.

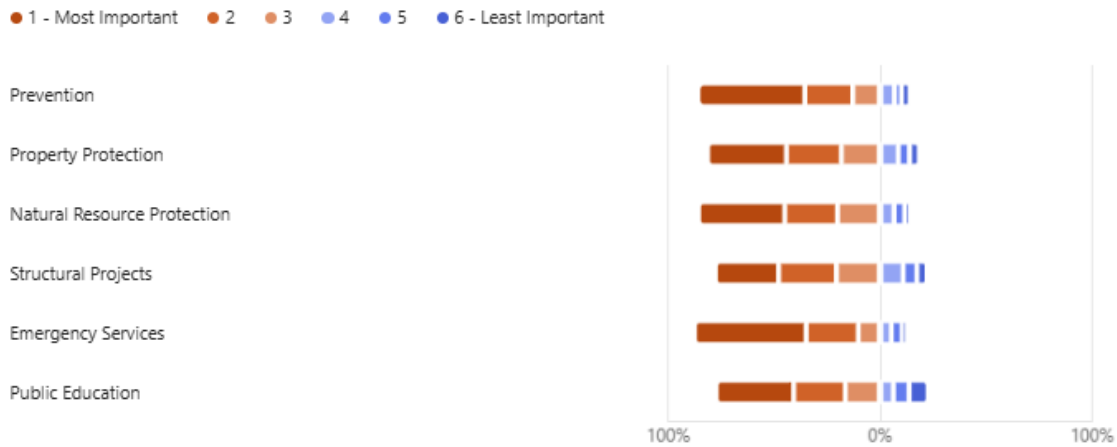
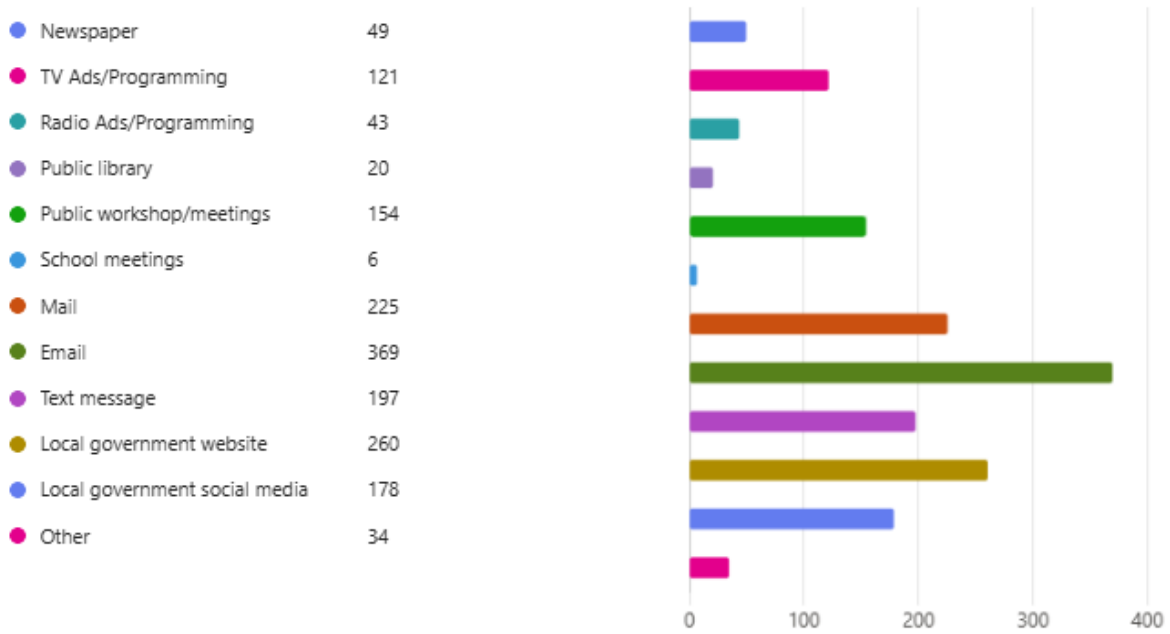


Figure B.14 – Survey Response, Preferred Methods of Communication

14. What is the best way for you to receive information about how to make your home or neighborhood more resistant to flood damage? Please select your top three choices.



## PLANNING STEP 3: COORDINATE

This planning step credits the incorporation of other plans and other agencies' efforts into the development of the Hazard Mitigation Plan. Other agencies and organizations must be contacted to determine if they have studies, plans and information pertinent to the Hazard Mitigation Plan, to determine if their programs or initiatives may affect the community's program, and to see if they could support the community's efforts. To incorporate stakeholder input into the plan, a variety of stakeholders were identified by the HMPC and sent an email inviting them to review the draft plan and provide feedback and comments. The HMPC emphasized reaching out to stakeholders that could represent and engage with vulnerable populations and underserved communities. Stakeholders were also involved through specific requests for data to support the development of the plan.

The coordination letter sent via email is provided below. A list of stakeholders detailing their involvement is provided in Table B.3.

**PLACEHOLDER**

**Table B.3 – Stakeholder List**

| <b>First Name</b>                 | <b>Last Name</b> | <b>Organization</b>  |
|-----------------------------------|------------------|--|
| <i>Non-Profit Organizations</i>   |                  |  |
| Kenneth                           | Lingerfelt       | NC Coastal Land Trust, Director of Land Protection                     |
| James                             | Jarvis           | Red Cross Cape Fear Chapter, Executive Director                        |
| Sandra                            | Phelps           | United Way of Coastal Carolina, Executive Director                     |
| Heather                           | Jacobs Deck      | Sound Rivers, Executive Director                                       |
| <i>Educational Institutions</i>   |                  |  |
| Jeremy                            | Johnson          | Pamlico County Public Schools Superintendent                           |
| Wendy                             | Miller           | Craven County Public Schools Superintendent                            |
| Richie                            | Paylor           | Carteret County Public Schools Superintendent                          |
| Matthew                           | Cheeseman        | Beaufort County Public Schools Superintendent                          |
| Zac                               | Schnell          | Pamlico Community College, President                                   |
| Dendray                           | Ballard          | Craven Community College, Director of Security & Emergency Management  |
| Richard                           | Abell            | Carteret Community College Security & Emergency Preparedness, Director |
| Dave                              | Loope            | Beaufort County Community College, President                           |
| Stacy                             | Davis            | UNC-CH Institute of Marine Sciences, Facilities Manager                |
| <i>Surrounding Municipalities</i> |                  |  |
| Stacie                            | Miles            | Onslow County Emergency Services Deputy Director                       |
| Ryan                              | Mills            | Jones County Emergency Services Director                               |
| Murry                             | Stroud           | Lenoir County Division of Emergency Management Director                |
| Randy                             | Gentry           | Pitt County Planning Director  |
| Jody                              | Griffin          | Martin County Emergency Management, Director                           |
| Lance                             | Swindell         | Washington County EM Coordinator                                       |
| Joey                              | Williams         | Hyde County Emergency Services Director                                |
| <i>Federal Government</i>         |                  |  |
| Jason                             | Hunter           | FEMA Region IV, Chief, Floodplain Management & Insurance Branch        |
| Valerie                           | Anderson         | FEMA Region IV, Natural Hazards Program Specialist                     |
| Dewana                            | Davis            | FEMA Region IV, Insurance Specialist                                   |
| Roy                               | McClure          | FEMA NFIP/CRS Specialist   |
| Kymerly                           | Kudla            | FEMA Mitigation Planning Specialist                                    |
| David                             | Holcomb          | ISO/CRS Specialist   |
| Mike                              | Bratcher         | ISO/CRS Specialist   |
| Sherry                            | Harper           | ISO/CRS Technical Coordinator  |
| Katherine                         | Smith            | USGS Climate Adaptation Science Center                                 |
| Etta                              | Lucas            | MCAS Cherry Point Installation Emergency Manager                       |
| <i>State Government</i>           |                  |  |
| Steve                             | Garrett          | State NFIP Coordinator   |
| Steve                             | McGugan          | State Hazard Mitigation Officer  |
| Linda                             | Culpepper        | DEQ Division of Water Resources, Director                              |
| Mary Beth                         | Houston          | NCDOT, Division 2 Representative                                       |
| Hannah                            | Thompson-Welch   | NC Forest Service, Wildfire Mitigation Specialist                      |
| <i>Business Community</i>         |                  |  |
| Wendy                             | Card             | New Bern Now, Editor-in-Chief  |



**APPENDIX B: PLANNING PROCESS DOCUMENTATION**

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| <b>First Name</b> | <b>Last Name</b> | <b>Organization</b>  |
|-------------------|------------------|--|
| Vail              | Stewart Rumley   | Washington Daily News Author                                       |
| Kevin             | Roberts          | New Bern Area Chamber of Commerce; President                       |
| Erin              | Knight           | Carteret County Chamber of Commerce, President                     |
| Catherine         | Glover           | Washington Beaufort County Chamber of Commerce, Executive Director |
| Bob               | Fuller           | Pamlico County Chamber of Commerce                                 |

# APPENDIX C MITIGATION ALTERNATIVES

44 CFR Subsection D §201.6(c)(3)(ii): [The mitigation strategy section shall include] a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

As part of the process of developing the mitigation action plans found in Section 7, the HMPC reviewed and considered a comprehensive range of mitigation options before selecting the actions identified for implementation. This section summarizes the full range of mitigation measures evaluated and considered by the HMPC, including a review of the categories of mitigation measures outlined in the 2017 CRS Coordinator's Manual, a discussion of current local implementation and CRS credits earned for those measures, and a list of the specific mitigation projects considered and recommended for implementation.

Mitigation alternatives identified for implementation by the HMPC were evaluated and prioritized using the criteria discussed in Section 6 of this plan.

---

## C.1 CATEGORIES OF MITIGATION MEASURES CONSIDERED

The HMPC analyzed viable mitigation options that addressed each of the identified hazards and supported the identified goals and objectives. As part of the review of mitigation alternatives, the HMPC was provided with the following list of mitigation categories which are utilized as part of the CRS planning process.

- Prevention
- Property Protection
- Natural Resource Protection
- Structural Projects
- Emergency Services
- Public Information and Outreach

Action ideas within each of these categories were discussed and considered for inclusion in the plan. The HMPC was encouraged to select actions to pursue within most if not all of these categories so as to develop a comprehensive approach to hazard mitigation.

---

## C.2 ALTERNATIVE MITIGATION MEASURES PER CATEGORY

This section presents a summary review of the mitigation measures that were considered by the HMPC. Note: the CRS credit recommendations are based on the 2017 CRS Coordinator's Manual and the 2021 Addendum.

### C.2.1 PREVENTATIVE AND REGULATORY MEASURES

Preventative measures are designed to keep a problem, such as flooding, from occurring or from getting worse. The objective of preventative measures is to ensure that future development is not exposed to damage and does not cause an increase in damages to other properties. Building, zoning, planning and code enforcement offices usually administer preventative measures. Some examples of types of preventative measures include:

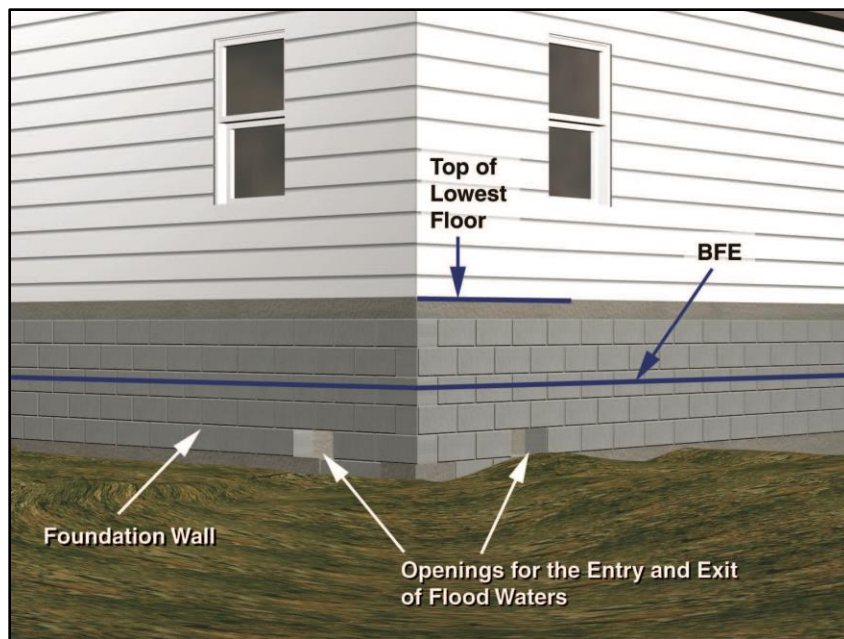
- Building codes
- Comprehensive or land use planning
- Zoning ordinance
- Open space preservation
- Floodplain regulations
- Subdivision regulations
- Stormwater management regulations

#### BUILDING CODES

Building codes provide one of the best methods for addressing natural hazards. When properly designed and constructed according to code, the average building can withstand many of the impacts of natural hazards. Hazard protection standards for all new and improved or repaired buildings can be incorporated into the local building code. Building codes can ensure that the first floors of new buildings are constructed to be higher than the elevation of the 100-year flood (the flood that is expected to have a one percent chance of occurring in any given year). This is shown in Figure C.1.

Just as important as having code standards is the enforcement of the code. Adequate inspections are needed during the course of construction to ensure that the builder understands the requirements and is following them. Making sure a structure is properly elevated and anchored requires site inspections at each step.

**Figure C.1 - Building Codes and Flood Protection Elevations**



Source: FEMA Publication: *Above the Flood: Elevating Your Floodprone House*, 2000

ASCE 24 is a referenced standard in the International Building Code. Any building or structure that falls within the scope of the IBC that is proposed in a flood hazard area is to be designed in accordance with ASCE 24. Freeboard is required as a function of the nature of occupancy and the flood zone. Dwellings and most other buildings have 1-foot of freeboard; certain essential facilities have 2-3 feet; only agricultural facilities, temporary facilities and minor storage facilities are allowed to have their lowest floors at the BFE.

## **COMPREHENSIVE OR LAND USE PLANNING**

Building codes provide guidance on how to build in hazardous areas. Planning and zoning activities direct development away from these areas, particularly floodplains and wetlands. They do this by designating land uses that are compatible with the natural conditions of land that is prone to flooding, such as open space or recreation. Communities in the Pamlico Sound Region prepare land use plans in compliance with North Carolina Coastal Area Management Act (CAMA) requirements.

## **ZONING ORDINANCE**

Zoning enables a community to designate what uses are acceptable on a given parcel. Zoning can ensure compatibility of land use with the land's level of suitability for development. Planning and zoning activities can also provide benefits by allowing developers more flexibility in arranging improvements on a parcel of land through the planned development approach. Zoning regulations describe what type of land use and specific activities are permitted in each district, and how to regulate how buildings, signs, parking, and other construction may be placed on a lot. Zoning regulations also provide procedures for rezoning and other planning applications. The zoning map and zoning regulations provide properties with certain rights to development.

## **OPEN SPACE PRESERVATION**

Keeping the floodplain and other hazardous areas open and free from development is the best approach to preventing damage to new developments. Open space can be maintained in agricultural use or can serve as parks, greenway corridors and golf courses.

Comprehensive and capital improvement plans should identify areas to be preserved by acquisition and other means, such as purchasing an easement. With an easement, the owner is free to develop and use private property, but property taxes are reduced or a payment is made to the owner if the owner agrees to not build on the part set aside in the easement.

Although there are some federal programs that can help acquire or reserve open lands, open space lands and easements do not always have to be purchased. Developers can be encouraged to dedicate park land and required to dedicate easements for drainage and maintenance purposes.

## **FLOODPLAIN REGULATIONS**

A Flood Damage Prevention Ordinance sets development standards for Special Flood Hazard Areas (SFHAs). Communities participating in the National Flood Insurance Program (NFIP) are required to adopt a flood damage prevention ordinance that meets at least the minimum standards of the NFIP; however, a community can incorporate higher standards for increased protection. For example, communities can adopt higher regulatory freeboard requirements, cumulative substantial damage definitions, fill restrictions, and other standards.

Another important consideration in floodplain regulations is the protection of natural and beneficial functions and the preservation of natural barriers such as vegetation. Vegetation along a stream bank is extremely beneficial for the health of the stream. Trees and other plants have an extensive root system that strengthen stream banks and help prevent erosion. Vegetation that has sprouted up near streams should remain undisturbed unless removing it will significantly reduce a threat of flooding or further destruction of the stream channel.

## STORMWATER MANAGEMENT REGULATIONS

Stormwater runoff is increased when natural ground cover is replaced by urban development. Development in the watershed that drains to a river can aggravate downstream flooding, overload the community's drainage system, cause erosion, and impair water quality. There are three ways to prevent flooding problems caused by stormwater runoff:

- 1 Regulating development in the floodplain to ensure that it will be protected from flooding and that it won't divert floodwaters onto other properties;
- 2 Regulating all development to ensure that the post-development peak runoff will not be greater than it was under pre-development conditions; and
- 3 Set construction standards so buildings are protected from shallow water.

## REDUCING FUTURE FLOOD LOSSES

Zoning and comprehensive planning can work together to reduce future flood losses by directing development away from hazard prone areas. Creating or maintaining open space is the primary way to reduce future flood losses.

Planning for open space must also be supplemented with development regulations to ensure that stormwater runoff is managed and that development is protected from flooding. Enforcement of the flood damage prevention ordinance and the flood protection elevation requirement provides an extra level of protection for buildings constructed in the planning area.

Stormwater management and the requirement that post-development runoff cannot exceed pre-development conditions is one way to prevent future flood losses. Retention and detention requirements also help to reduce future flood losses.

## LOCAL IMPLEMENTATION RECOMMENDATIONS

The CRS encourages strong building codes. It provides credit in two ways: points are awarded based on the community's Building Code Effectiveness Grading Schedule (BCEGS) classification and points are awarded for adopting the International Code series. In North Carolina, communities are limited by the State Building Code Council which has not implemented the most current version of the International Building Code.

CRS credits are available for regulations that encourage developers to preserve floodplains or other hazardous areas away from development. There is no credit for a plan, only for the enforceable regulations that are adopted pursuant to a plan. Communities in the Pamlico Sound Region could receive credit for Activity 430 – Higher Regulatory Standards and for Activity 420 – Open Space Preservation for preserving parcels within the SFHA as open space. Preserving flood prone areas as open space is one of the highest priorities of the Community Rating System. The credits in the 2017 manual have doubled for OSP (Open Space Preservation). The participating communities could also receive credit for Activity 450 – Stormwater Management for enforcing regulations for stormwater management and soil and erosion control. Several prevention actions considered by the HMPC are detailed below.

**Table C.1 - Prevention Mitigation Options and Recommended Projects**

| Action #  | Mitigation Action   | Reason for Pursuing / Not Pursuing  | Funding |
|---|---|---|---------|
| <b>Prevention Measures Considered by HMPC and Not Recommended</b> |   |   |         |
| -   | Update building codes to require that the first floor of all new construction be raised a minimum of two feet above the base flood elevation. | Most communities already have a building elevation requirement. Limited political support for more elevation. | n/a     |

**APPENDIX C: MITIGATION ALTERNATIVES**

| Action #  | Mitigation Action   | Reason for Pursuing / Not Pursuing  | Funding   |
|---|---|---|-----------|
| -   | Review all land use planning and regulatory documents pertinent to hazard mitigation in an effort to:<br>(1) Reduce exposure to natural hazards<br>(2) Promote resource protection<br>(3) Encourage the use of best management practices  | This strategy is adequately addressed through other strategies included in the updated plan.  | n/a       |
| <b>Prevention Measures and Funding Recommended for Implementation</b> |   |   |           |
| P1  | In the event of a substantial flooding event, or other natural hazard occurrence, perform damage assessments in coordination with NCEM. These assessments will assist the County in determining the extent of the damage caused by the respective disaster event. This data will be utilized as a tool for land use planning and future hazard mitigation plan updates and to gauge the effectiveness of the County's two-foot freeboard requirement. | Pamlico County has carried out this process following Hurricanes Matthew and Florence since adoption of the past plan. The impacts of these storms will be factored into decisions regarding land use and development policy through implementation of this plan. | GF, NCDPS |
| B15   | Integrate new greenway and public park improvements into comprehensive planning and capital improvement efforts for land not suitable for development (including coordination with all local certified CAMA Land Use Plans).  | Beaufort County updated its certified CAMA Land Use plan this year and will use the updated LUP to promote these strategies.  | GF, NCDEQ |
| CR2   | Review respective Flood Damage Prevention Ordinances to assess whether any revisions and/or updates have been mandated by FEMA or NCEM. Additionally, jurisdictions will consider whether regulatory options are available to provide for more effective floodplain management.   | Effective floodplain management can protect people and property and prevent flood damages.  | GF, NCDPS |

**C.2.2 PROPERTY PROTECTION MEASURES**

Generally, natural hazards do not damage vacant areas; the major impact of hazards is to people and improved property. Property protection measures are used to modify buildings or property that are subject to damage in order to reduce their vulnerability. Property protection measures fall under three approaches:

- Modify the site to keep the hazard from reaching the building;
- Modify the building (retrofit) so it can withstand the impacts of the hazard; and
- Insure the property to provide financial relief after the damage occurs.

Property protection measures are normally implemented by the property owner, although in many cases technical and financial assistance can be provided by a government agency.

## KEEP THE HAZARD AWAY

In some cases, properties can be modified so the hazard does not reach the damage-prone improvements. For example, a berm can be built to prevent floodwaters from reaching a house.

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### BARRIERS

A flood protection barrier can be built of dirt or soil (a "berm") or concrete or steel (a "floodwall"). Careful design is needed so as not to create flooding or drainage problems on neighboring properties. Depending on how porous the ground is, if floodwaters will stay up for more than an hour or two, the design needs to account for leaks, seepage of water underneath, and rainwater that will fall inside the perimeter. This is usually done with a sump or drain to collect the internal groundwater and surface water and a pump and pipe to pump the internal drainage over the barrier. Barriers can only be built so high. They can be overtopped by a flood higher than expected. Barriers made of earth are susceptible to erosion from rain and floodwaters if not properly sloped, covered with grass, and properly maintained.

### MODIFY THE BUILDING

There are several common methods to keep a flood from damaging a building:

- Move the building out of the flood-prone area.
- Elevate the building above the flood level.
- Demolish the building.
- Replace the building with a new one that is elevated above the flood level.
- Retrofit the building to reduce the impact of flooding when it occurs.

Elevation, acquisition, and pilot reconstruction are the most effective types to consider for the planning area.

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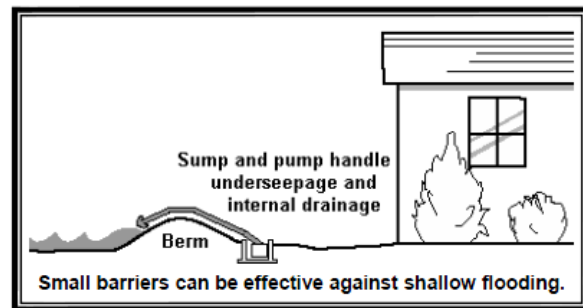
### RELOCATION

Moving a building out of a flood prone area to higher ground is the surest and safest way to protect it from flooding. While almost any building can be moved, the cost increases for heavier structures, such as those with exterior brick and stone walls, and for large or irregularly shaped buildings. Relocation is also preferred for large lots that include buildable areas outside the floodplain or where the owner has a new flood-free lot (or portion of the existing lot) available.

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### BUILDING ELEVATION

Raising a building above the flood level can be almost as effective as moving it out of the floodplain. Water flows under the building, causing little or no damage to the structure or its contents. Raising a building above the flood level is cheaper than moving it and can be less disruptive to a neighborhood.



Elevation has proven to be an acceptable and reasonable means of complying with floodplain regulations that require new, substantially improved, and substantially damaged buildings to be elevated above the base flood elevation.

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**DEMOLITION**

Some buildings, especially heavily damaged or repetitively flooded ones, are not worth the expense to protect them from future damages. It is cheaper to demolish them and either replace them with new, flood protected structures or relocate the occupants to a safer site. Demolition is also appropriate for buildings that are difficult to move – such as larger, slab foundation or masonry structures – and for dilapidated structures that are not cost-beneficial to protect.



Demolishing a repetitively flooded home

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**PILOT RECONSTRUCTION**

If a building is not in good shape, elevating it may not be worthwhile or it may even be dangerous. An alternative is to demolish the structure and build a new one on the site that meets or exceeds all flood protection codes. FEMA funding programs refer to this approach as "pilot reconstruction." It is still a pilot program, and not a regularly funded option. Certain rules must be followed to qualify for federal funds for pilot reconstruction.

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**RETROFITTING**

An alternative to keeping the hazard away from a building is to modify or retrofit the site or building to minimize or prevent damage. There are a variety of techniques to do this, as described below.

– **Dry Floodproofing**

Dry floodproofing means making all areas below the flood protection level watertight. Walls are coated with waterproofing compounds or plastic sheeting. Openings, such as doors, windows and vents, are closed, either permanently, with removable shields, or with sandbags. Dry floodproofing of new and existing non-residential buildings in the regulatory floodplain is permitted under state, FEMA and local regulations. Dry floodproofing of existing residential buildings in the floodplain is also permitted as long as the building is not substantially damaged or being substantially improved. Owners of buildings located outside the regulatory floodplain can always use dry floodproofing techniques.

Dry floodproofing is only effective for shallow flooding, such as repetitive drainage problems. It does not protect from the deep flooding along lakes and larger rivers caused by hurricanes or other storms.

– **Wet Floodproofing**

The alternative to dry floodproofing is wet floodproofing: water is let in and everything that could be damaged by a flood is removed or elevated above the flood level. Structural components below the flood level are replaced with materials that are not subject to water damage. For example, concrete block walls are used instead of wooden studs and gypsum wallboard. The furnace, water heater and laundry facilities are permanently relocated to a higher floor. Where the flooding is not deep, these appliances can be raised on blocks or platforms.



## INSURANCE

Technically, insurance does not mitigate damage caused by a natural hazard. However, it does help the owner repair, rebuild, and hopefully afford to incorporate some of the other property protection measures in the process. Insurance offers the advantage of protecting the property, so long as the policy is in force, without requiring human intervention for the measure to work.

### — Private Property

Although most homeowner's insurance policies do not cover a property for flood damage, an owner can insure a building for damage by surface flooding through the NFIP. Flood insurance coverage is provided for buildings and their contents damaged by a "general condition of surface flooding" in the area. Most people purchase flood insurance because it is required by the bank when they get a mortgage or home improvement loan. Usually these policies just cover the building's structure and not the contents. Contents coverage can be purchased separately. Renters can buy contents coverage, even if the owner does not buy structural coverage on the building. Most people don't realize that there is a 30-day waiting period to purchase a flood insurance policy and there are limits on coverage.

### — Public Property

Governments can purchase commercial insurance policies. Larger local governments often self-insure and absorb the cost of damage to one facility, but if many properties are exposed to damage, self-insurance can drain the government's budget. Communities cannot expect federal disaster assistance to make up the difference after a flood.

## LOCAL IMPLEMENTATION RECOMMENDATIONS

The CRS provides the most credit points for acquisition and relocation under Activity 520, because this measure permanently removes insurable buildings from the floodplain. Communities in the Pamlico Sound Region could receive credit for Activity 520 – Acquisition and Relocation, for acquiring and relocating buildings from the SFHA. The HMPC recommended that communities pursue the purchase of repetitive loss buildings and other buildings which are subject to flood damage in order to return this land to open space.

The CRS also credits barriers and elevating existing buildings under Activity 530. The credit for Activity 530 is based on the combination of flood protection techniques used and the level of flood protection provided. Points are calculated for each protected building. Bonus points are provided for the protection of repetitive loss buildings and critical facilities. Communities could receive credit for Activity 360 – Flood Protection Assistance by providing advice and assistance to homeowners who may want to flood proof their home or business. Advice is provided both on property protection techniques and on financial assistance programs to help fund mitigation.

Flood insurance information for each community is provided in Section 5 and in greater detail in Annex B. There is no credit for purchasing flood insurance, but the CRS does provide credit for local public information programs that, among other topics, explain flood insurance to property owners. The CRS also reduces the premiums for those people who do buy NFIP coverage. Communities in the Pamlico Sound Region could receive credit for Activity 330 – Outreach Projects. Property protection mitigation options considered by the HMPC are described below.

**Table C.2 – Property Protection Mitigation Options and Recommended Projects**

| Action #   | Mitigation Action   | Reason for Pursuing / Not Pursuing   | Funding                     |
|--|---|--|-----------------------------|
| <b>Property Protection Measures Considered by HMPC and Not Recommended</b>     |   |  |                             |
| -  | Provide a fund for residents to update their sites and buildings to prevent future hazard damages.  | No money to create this fund and would likely not gain political support.  | n/a                         |
| <b>Property Protection Measures and Funding Recommended for Implementation</b> |   |  |                             |
| P3   | Continue to proactively seek grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLP's) from future flooding events. The County will maintain a list of RLP's, and on an annual basis, will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Pamlico County will assist all municipal jurisdictions in working through the structural mitigation grant funding process. | RLPs and SRLPs are the highest priority for property mitigation.   | GF, NCDPS, HMGP, BRIC, UHMA |
| CA5  | Maintain, and where necessary, install backup generators at all identified critical facilities. Additionally, County Emergency Services will evaluate the equipment on a regular basis to ensure it continues to meet operational demands at county facilities.   | Back up power can ensure continuity of operations at critical facilities.  | GF, HMGP, BRIC, UHMA        |
| RB3  | Flood Mitigation at Wastewater Treatment Plant by raising top of structures to above base flood elevation and plus 2' freeboard where possible.   | Mitigation of the wastewater treatment plant in River Bend is a priority for public health and safety and continuity of operations | GF, FEMA, NCDEQ             |

**C.2.3 NATURAL RESOURCE PROTECTION**

Resource protection activities are generally aimed at preserving (or in some cases restoring) natural areas. These activities enable the naturally beneficial functions of fields, floodplains, wetlands, and other natural lands to operate more effectively. Natural and beneficial functions of watersheds, floodplains and wetlands include:

- Reduction in runoff from rainwater and stormwater in pervious areas
- Infiltration that absorbs overland flood flow
- Removal and filtering of excess nutrients, pollutants and sediments
- Storage of floodwaters
- Absorption of flood energy and reduction in flood scour
- Water quality improvement
- Groundwater recharge
- Habitat for flora and fauna
- Recreational and aesthetic opportunities

As development occurs, many of the above benefits can be achieved through regulatory steps for protecting natural areas or natural functions. This section covers the resource protection programs and standards that can help mitigate the impact of natural hazards, while they improve the overall environment. Six areas were reviewed:

- Wetland protection
- Erosion and sedimentation control
- Stream/River restoration
- Best management practices
- Dumping regulations
- Farmland protection

### **WETLAND PROTECTION**

Wetlands are often found in floodplains and topographically depressed areas of a watershed. Many wetlands receive and store floodwaters, thus slowing and reducing downstream flows. They also serve as a natural filter, which helps to improve water quality, and they provide habitat for many species of fish, wildlife and plants.



### **EROSION AND SEDIMENTATION CONTROL**

Farmlands and construction sites typically contain large areas of bare exposed soil. Surface water runoff can erode soil from these sites, sending sediment into downstream waterways. Erosion also occurs along stream banks and shorelines as the volume and velocity of flow or wave action destabilize and wash away the soil. Sediment suspended in the water tends to settle out where flowing water slows down. This can clog storm drains, drain tiles, culverts and ditches and reduce the water transport and storage capacity of river and stream channels, lakes and wetlands.

There are two principal strategies to address these problems: minimize erosion and control sedimentation. Techniques to minimize erosion include phased construction, minimal land clearing, and stabilizing bare ground as soon as possible with vegetation and other soil stabilizing practices.

### **STREAM/SHORELINE RESTORATION**

The objective of "stream conservation," "bioengineering," or "riparian corridor restoration" is to return streams, stream banks, natural meanders, and adjacent land to a more natural condition. Another term is "ecological restoration," which restores native indigenous plants and animals to an area.

A key component of these efforts is to use appropriate native plantings along the banks that resist erosion. This may involve retrofitting the shoreline with willow cuttings, wetland plants, or rolls of landscape material covered with a natural fabric that decomposes after the banks are stabilized with plant roots.

In all, restoring the right vegetation to a stream has the following advantages:

- Reduces the amount of sediment and pollutants entering the water
- Enhances aquatic habitat by cooling water temperature
- Provides food and shelter for both aquatic and terrestrial wildlife
- Can reduce flood damage by slowing the velocity of water
- Increases the beauty of the land and its property value
- Prevents property loss due to erosion
- Provides recreational opportunities, such as hunting, fishing and bird watching
- Reduces long-term maintenance costs

Communities are required by state and federal regulations to monitor storm water drainage outfalls and control storm water runoff.

### **BEST MANAGEMENT PRACTICES**

Point source pollutants come from pipes such as the outfall of a municipal wastewater treatment plant. They are regulated by the US EPA. Nonpoint source pollutants come from non-specific locations and harder to regulate. Examples of nonpoint source pollutants are lawn fertilizers, pesticides, other chemicals, animal wastes, oils from street surfaces and industrial areas, and sediment from agriculture, construction, mining and forestry. These pollutants are washed off the ground's surface by stormwater and flushed into receiving storm sewers, ditches and streams.

The term "best management practices" (BMPs) refers to design, construction and maintenance practices and criteria that minimize the impact of stormwater runoff rates and volumes, prevent erosion, protect natural resources and capture nonpoint source pollutants (including sediment). They can prevent increases in downstream flooding by attenuating runoff and enhancing infiltration of stormwater. They also minimize water quality degradation, preserve beneficial natural features onsite, maintain natural base flows, minimize habitat loss, and provide multiple usages of drainage and storage facilities.

### **DUMPING REGULATIONS**

BMPs usually address pollutants that are liquids or are suspended in water that are washed into a lake or stream. Dumping regulations address solid matter, such as shopping carts, appliances and landscape waste that can be accidentally or intentionally thrown into channels or wetlands. Such materials may not pollute the water, but they can obstruct even low flows and reduce the channels' and wetlands' abilities to convey or clean stormwater.

Many cities have nuisance ordinances that prohibit dumping garbage or other "objectionable waste" on public or private property. Waterway dumping regulations need to also apply to "non-objectionable" materials, such as grass clippings or tree branches, which can kill ground cover or cause obstructions in channels. Regular inspections to catch violations should be scheduled.

Many people do not realize the consequences of their actions. They may, for example, fill in the ditch in their front yard without realizing that is needed to drain street runoff. They may not understand how re-grading their yard, filling a wetland, or discarding leaves or branches in a watercourse can cause a problem to themselves and others. Therefore, a dumping enforcement program should include public information materials that explain the reasons for the rules as well as the penalties.

### **FARMLAND PROTECTION**

Farmland protection is an important piece of comprehensive planning and zoning throughout the United States. The purpose of farmland protection is to provide mechanisms for prime, unique, or important agricultural land to remain as such, and to be protected from conversion to nonagricultural uses.

Frequently, farm owners sell their land to residential or commercial developers and the property is converted to non-agricultural land uses. With development comes more buildings, roads and other infrastructure. Urban sprawl occurs, which can lead to additional stormwater runoff and emergency management difficulties.

Farms on the edge of cities are often appraised based on the price they could be sold for to urban developers. This may drive farmers to sell to developers because their marginal farm operations cannot afford to be taxed as urban land. The Farmland Protection Program in the United States Department of Agriculture's 2002 Farm Bill (Part 519) allows for funds to go to state, tribal, and local governments as well as nonprofit organizations to help purchase easements on agricultural land to protect against the development of the land.

## LOCAL IMPLEMENTATION RECOMMENDATIONS

There is credit for preserving open space in its natural condition or restored to a state approximating its natural condition. The credit is based on the percentage of the floodplain that can be documented as wetlands protected from development by ownership or local regulations. Communities in the Pamlico Sound Region could receive credit for Activity 420 – Open Space Preservation for preserving a portion of the SFHA as open space.

Additionally, credit is available for Activity 540 – Drainage System Maintenance. Having a portion of the drainage system inspected regularly throughout the year and maintenance performed as needed would earn a community credit. Communities could also get credit under this activity for listing problem sites that are inspected more frequently, and for implementing an ongoing Capital Improvements Program.

**Table C.3 – Natural Resource Protection Mitigation Options and Recommended Projects**

| Action #   | Mitigation Action   | Reason for Pursuing / Not Pursuing   | Funding                |
|--|---|--|------------------------|
| <b>Natural Resource Protection Measures Considered by HMPC and Not Recommended</b>     |   |  |                        |
| -  | Create a Best Management Practices guideline to collect several techniques into one plan.   | Not enough administrative or fiscal resources to complete.   | n/a                    |
| -  | Develop an open space management plan   | Not enough administrative or fiscal resources to complete.   | n/a                    |
| <b>Natural Resource Protection Measures and Funding Recommended for Implementation</b> |   |  |                        |
| P2   | Continue to monitor drainage conditions throughout the County, in particular, issues associated with drainage ditches and agricultural runoff canals situated throughout the County. Once issues are identified, the County will work with municipal jurisdictions and State agencies to identify short- and long-term solutions to these issues. | Pamlico County is currently working towards solutions regarding flooding associated with Hurricanes Matthew and Florence. The most substantial of these problems has been identified in the Hurricane Matthew Resiliency Redevelopment Plan. | GF, NCDEQ, NCDOT       |
| CA10   | Maintain all property acquired within the Special Flood Hazard Area (SFHA) as undisturbed open space in perpetuity. Continue to proactively establish open space within the floodplain and floodway as HMGP grant funds become available to carry out this initiative.  | Open space preservation will prevent new flood exposure and may involve removing existing property from high risk areas.   | GF, NCDPS              |
| CR3  | Continue to support NCDENR in efforts to enforce the Neuse River Basin-wide Water Quality Management Rules.   | Enforcement of these rules remains a priority. Changes in standards will coincide with amendments established by NCDEQ.  | GF                     |
| CR24   | Integration of environmentally friendly flood control measures will be implemented where necessary, such as the installation of living shorelines, marsh sills, flood barriers etc. to protect environmentally sensitive areas and maintain the natural floodplain.   | These efforts will help reestablish shorelines and floodplain lost to natural disasters or other means of degradation through environmentally friendly methods and techniques.   | GF, FEMA, NCDPS, Other |

## C.2.4 EMERGENCY SERVICES MEASURES

Emergency services measures protect people during and after a disaster. A good emergency management program addresses all hazards, and it involves all local government departments. This section reviews emergency services measures following a chronological order of responding to an emergency. It starts with identifying an impending problem (threat recognition) and continues through post-disaster activities.

### THREAT RECOGNITION

The first step in responding to a flood is to know when weather conditions are such that an event could occur. With a proper and timely threat recognition system, adequate warnings can be disseminated.

The National Weather Service (NWS) is the prime agency for detecting meteorological threats. Severe weather warnings are transmitted through NOAA's Weather Radio System. Local emergency managers can then provide more site-specific and timely recognition after the Weather Service issues a watch or a warning. A flood threat recognition system predicts the time and height of a flood crest. This can be done by measuring rainfall, soil moisture, and stream flows upstream of the community and calculating the subsequent flood levels.

On smaller rivers and streams, locally established rainfall and river gauges are needed to establish a flood threat recognition system. The NWS may issue a "flash flood watch." This is issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain nor imminent. These events are so localized and so rapid that a "flash flood warning" may not be issued, especially if no remote threat recognition equipment is available. In the absence of a gauging system on small streams, the best threat recognition system is to have local personnel monitor rainfall and stream conditions. While specific flood crests and times will not be predicted, this approach will provide advance notice of potential local or flash flooding.

### WARNING

The next step in emergency response following threat recognition is to notify the public and staff of other agencies and critical facilities. More people can implement protection measures if warnings are early and include specific detail.

The NWS issues notices to the public using two levels of notification:

- Watch: conditions are right for flooding, thunderstorms, tornadoes or winter storms.
- Warning: a flood, tornado, etc., has started or been observed.

A more specific warning may be disseminated by the community in a variety of ways. The following are the more common methods:

- CodeRED countywide mass telephone emergency communication system
- Commercial or public radio or TV stations
- The Weather Channel
- Cable TV emergency news inserts
- Telephone trees/mass telephone notification
- NOAA Weather Radio
- Tone activated receivers in key facilities
- Outdoor warning sirens
- Sirens on public safety vehicles
- Door-to-door contact

- Mobile public address systems
- Email notifications

Just as important as issuing a warning is telling people what to do in case of an emergency. A warning program should include a public information component.

### **STORMREADY**

The National Weather Service (NWS) established the StormReady program to help local governments improve the timeliness and effectiveness of hazardous weather-related warnings for the public. To be officially StormReady, a community must:



- Establish a 24-hour warning point and emergency operations center
- Have more than one way to receive severe weather warnings and forecasts and to alert the public
- Create a system that monitors weather conditions locally
- Promote the importance of public readiness through community seminars
- Develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises

Being designated a NWS StormReady community is a good measure of a community's emergency warning program for weather hazards. All counties in the region and the towns of Cape Carteret and Pine Knoll Shores are designated StormReady.

### **RESPONSE**

The protection of life and property is the most important task of emergency responders. Concurrent with threat recognition and issuing warnings, a community should respond with actions that can prevent or reduce damage and injuries. Typical actions and responding parties include the following:

- Activating the emergency operations center (emergency preparedness)
- Closing streets or bridges (police or public works)
- Shutting off power to threatened areas (utility company)
- Passing out sand and sandbags (public works)
- Holding children at school or releasing children from school (school superintendent)
- Opening evacuation shelters (the American Red Cross)
- Monitoring water levels (public works)
- Establishing security and other protection measures (police)

An emergency action plan ensures that all bases are covered and that the response activities are appropriate for the expected threat. These plans are developed in coordination with the agencies or offices that are given various responsibilities.

Emergency response plans should be updated annually to keep contact names and telephone numbers current and to ensure that supplies and equipment that will be needed are still available. They should be critiqued and revised after disasters and exercises to take advantage of the lessons learned and of changing conditions. The end result is a coordinated effort implemented by people who have experience working together so that available resources will be used in the most efficient manner possible.

### **EVACUATION AND SHELTER**

There are six key components to a successful evacuation:

- Adequate warning

- Adequate routes
- Proper timing to ensure the routes are clear
- Traffic control
- Knowledgeable travelers
- Care for special populations (e.g., disabled persons, prisoners, hospital patients, schoolchildren)

Those who cannot get out of harm's way need shelter. Typically, the American Red Cross will staff a shelter and ensure that there is adequate food, bedding, and wash facilities. Shelter management is a specialized skill. Managers must deal with problems like scared children, families that want to bring in their pets, and the potential for an overcrowded facility.

**LOCAL IMPLEMENTATION RECOMMENDATIONS**

Flash flood warnings are issued by National Weather Service Offices, which have the local and county warning responsibility. Flood warnings are forecasts of coming floods, are distributed to the public by the NOAA Weather Radio, commercial radio and television, and through local emergency agencies. The warning message tells the expected degree of flooding, the affected river, when and where flooding will begin, and the expected maximum river level at specific forecast points during flood crest.

Communities in the Pamlico Sound Region could receive credit for Activity 610 – Flood Warning Program for maintaining a program that provides timely identification of impending flood threats, disseminates warnings to appropriate floodplain residents, and coordinates flood response activities. Community Rating System credits are based on the number and types of warning media that can reach the community's flood prone population. Depending on the location, communities can receive credit for the telephone calling system and more credits for additional measures, like telephone trees. Being designated as a StormReady community also provides additional credits.

**Table C.4 - Emergency Services Mitigation Options and Recommended Projects**

| Action #  | Mitigation Action  | Reason for Pursuing / Not Pursuing  | Funding        |
|---|--|---|----------------|
| <b>Emergency Services Measures Considered by HMPC and Not Recommended</b>     |  |   |                |
| -   | Ensure that emergency routes are adequately marked and clear.  | This work is already managed by NCDOT and does not require further local action.                          | n/a            |
| <b>Emergency Services Measures and Funding Recommended for Implementation</b> |  |   |                |
| B5  | Complete an annual evaluation of each designated emergency shelter, including structural inspection, resource inventory, staffing plan, and vulnerability assessment, including coordination with American Red Cross (ARC) personnel.  | This action will ensure shelter preparedness for hazard events.   | GF, NCDPS, ARC |
| CR13  | Work to expand upon the County's Special Medical Needs Registry (SMNR). The SMNR is available to all County residents. Effective participation will require close cooperation between County ES and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities. | Providing evacuation support during hazard events protects live and safety for special needs populations. | GF             |



| <b>Action #</b> | <b>Mitigation Action</b>  | <b>Reason for Pursuing / Not Pursuing</b>  | <b>Funding</b>  |
|-----------------|---|--|-----------------|
| P14             | Maintain Debris Removal and Monitoring Services Contracts for post disaster response. These services should focus on preparing documentation necessary to ensure full reimbursement of cost associated with community cleanup and immediate infrastructure restoration. | Post disaster debris removal is critical to recovery and continuity of operations. | GF, NCDPS, FEMA |

### **C.2.5 STRUCTURAL PROJECTS**

Four general types of flood control projects are reviewed here: levees, reservoirs, diversions, and dredging. These projects have three advantages not provided by other mitigation measures:

- They can stop most flooding, protecting streets and landscaping in addition to buildings.
- Many projects can be built without disrupting citizens' homes and businesses.
- They are constructed and maintained by a government agency, a more dependable long-term management arrangement than depending on many individual private property owners.

However, as shown below, structural measures also have shortcomings. The appropriateness of using flood control depends on individual project area circumstances.

**Advantages**

- They may provide the greatest amount of protection for land area used
- Because of land limitations, they may be the only practical solution in some circumstances
- They can incorporate other benefits into structural project design, such as water supply and recreational uses
- Regional detention may be more cost-efficient and effective than requiring numerous small detention basins

**Disadvantages**

- They can disturb the land and disrupt the natural water flows, often destroying wildlife habitat
- They require regular maintenance
- They are built to a certain flood protection level that can be exceeded by larger floods
- They can create a false sense of security
- They promote more intensive land use and development in the floodplain

### **LEVEES AND FLOODWALLS**

Probably the best-known flood control measure is a barrier of earth (levee) or concrete (floodwall) erected between the watercourse and the property to be protected. Levees and floodwalls confine water to the stream channel by raising its banks. They must be well designed to account for large floods, underground seepage, pumping of internal drainage, and erosion and scour.

## RESERVOIRS AND DETENTION

Reservoirs reduce flooding by temporarily storing flood waters behind dams or in storage or detention basins. Reservoirs lower flood heights by holding back, or detaining, runoff before it can flow downstream. Flood waters are detained until the flood has subsided, and then the water in the reservoir or detention basin is released or pumped out slowly at a rate that the river can accommodate downstream.

Reservoirs can be dry and remain idle until a large rain event occurs. Or they may be designed so that a lake or pond is created. The lake may provide recreational benefits or water supply (which could also help mitigate a drought).



Flood control reservoirs are most commonly built for one of two purposes. Large reservoirs are constructed to protect property from existing flood problems. Smaller reservoirs, or detention basins, are built to protect property from the stormwater runoff impacts of new development.

## DIVERSION

A diversion is a new channel that sends floodwaters to a different location, thereby reducing flooding along an existing watercourse. Diversions can be surface channels, overflow weirs, or tunnels. During normal flows, the water stays in the old channel. During floods, the floodwaters spill over to the diversion channel or tunnel, which carries the excess water to a receiving lake or river.

## LOCAL IMPLEMENTATION RECOMMENDATIONS

Structural flood control projects that provide at least 100-year flood protection and that result in revisions to the Flood Insurance Rate Map are not credited by the CRS so as not to duplicate the larger premium reduction provided by removing properties from the mapped floodplain. Other flood control projects can be accepted by offering a 25-year flood protection.

**Table C.5 – Structural Projects Mitigation Options and Recommended Projects**

| Action #  | Mitigation Action   | Reason for Pursuing / Not Pursuing   | Funding                |
|---|---|--|------------------------|
| <b>Structural Project Measures Considered by HMPC and Not Recommended</b>     |   |  |                        |
| -   | Modify channels for water diversion to other areas. This will reduce flooding in existing areas.  | This is a low priority because channelization can significantly increase runoff.   | n/a                    |
| -   | Mitigate flooding and erosion with breakwater and bulkheads.  | Breakwaters and bulkheads are in place and can be effective but they provide limited mitigation depending on their design. | n/a                    |
| <b>Structural Project Measures and Funding Recommended for Implementation</b> |   |  |                        |
| CR24  | Integration of environmentally friendly flood control measures will be implemented where necessary, such as the installation of living shorelines, marsh sills, flood barriers etc. to protect environmentally sensitive areas and maintain the natural floodplain. | These efforts help reestablish shorelines and floodplain and their beneficial functions.                                   | GF, FEMA, NCDPS, Other |

| <b>Action #</b> | <b>Mitigation Action</b>  | <b>Reason for Pursuing / Not Pursuing</b>  | <b>Funding</b>                           |
|-----------------|---|--|--|
| CA26            | Improve stormwater management planning and implement stormwater improvement projects.   | Drainage improvements are needed to address system deficiencies and reduce localized flooding. | GF, BRIC, HMGP, State grant funds, NCDEQ |
| B24             | Monitor natural and man-made drainage structures to ensure they are clear and functioning properly; prioritize needed drainage projects and review funding alternatives annually. | Monitoring and maintenance is necessary for drainage systems to function properly.             | GF, NCDPS, NCDOT, USDA, HMA              |

**C.2.6 PUBLIC INFORMATION AND OUTREACH**

**OUTREACH PROJECTS**

Outreach projects are the first step in the process of orienting property owners to the hazards they face and to the concept of property protection. They are designed to encourage people to seek out more information in order to take steps to protect themselves and their properties.

Awareness of the hazard is not enough; people need to be told what they can do about the hazard. Thus, projects should include information on safety, health and property protection measures. Research has shown that a properly run local information program is more effective than national advertising or publicity campaigns. Therefore, outreach projects should be locally designed and tailored to meet local conditions.

Community newsletters/direct mailings: The most effective types of outreach projects are mailed or distributed to everyone in the community. In the case of floods, they can be sent only to floodplain property owners.

News media: Local newspapers can be strong allies in efforts to inform the public. Local radio stations and cable TV channels can also help. These media offer interview formats and cable TV may be willing to broadcast videos on the hazards.

**LIBRARIES AND WEBSITES**

The two previous activities tell people that they are exposed to a hazard. The next step is to provide information to those who want to know more. The community library and local websites are obvious places for residents to seek information on hazards, hazard protection, and protecting natural resources.

Books and pamphlets on hazard mitigation can be given to libraries, and many of these can be obtained for free from state and federal agencies. Libraries also have their own public information campaigns with displays, lectures and other projects, which can augment the activities of the local government. Today, websites are commonly used as research tools. They provide fast access to a wealth of public and private sites for information. Through links to other websites, there is almost no limit to the amount of up to date information that can be accessed online.

In addition to online floodplain maps, websites can link to information for homeowners on how to retrofit for floods or a website about floods for children.

## TECHNICAL ASSISTANCE

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### *HAZARD INFORMATION*

Residents and business owners that are aware of the potential hazards can take steps to avoid problems or reduce their exposure to flooding. Communities can easily provide map information from FEMA's FIRMs and Flood Insurance Studies. They may also assist residents in submitting requests for map amendments and revisions when they are needed to show that a building is located outside the mapped floodplain.

Some communities supplement what is shown on the FIRM with information on additional hazards, flooding outside mapped areas and zoning. When the map information is provided, community staff can explain insurance, property protection measures and mitigation options that are available to property owners. They should also remind inquirers that being outside the mapped floodplain is no guarantee that a property will never flood.

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### *PROPERTY PROTECTION ASSISTANCE*

While general information provided by outreach projects or the library is beneficial, most property owners do not feel ready to retrofit their buildings without more specific guidance. Local building department staffs are experts in construction. They can provide free advice, not necessarily to design a protection measure, but to steer the owner onto the right track. Building or public works department staffs can provide the following types of assistance:

- Visit properties and offer protection suggestions
- Recommend or identify qualified or licensed contractors
- Inspect homes for anchoring of roofing and the home to the foundation
- Explain when building permits are needed for home improvements.

### **PUBLIC INFORMATION PROGRAM**

A Program for Public Information (PPI) is a document that receives CRS credit. It is a review of local conditions, local public information needs, and a recommended plan of activities. A PPI consists of the following parts, which are incorporated into this plan:

- The local flood hazard
- The property protection measures appropriate for the flood hazard
- Flood safety measures appropriate for the local situation
- The public information activities currently being implemented within the community, including those being carried out by non-government agencies
- Goals for the community's public information program
- The outreach projects that will be done each year to reach the goals
- The process that will be followed to monitor and evaluate the projects

### **LOCAL IMPLEMENTATION RECOMMENDATIONS**

Communities in the Pamlico Sound Region could receive credit under Activity 330 – Outreach Projects as well as Activity 350 – Flood Protection Information. Credit is available for targeted and general outreach projects. Credit is also provided for making publications relating to floodplain management available in the reference section of the local library.

**Table C.6 – Public Information and Outreach Mitigation Options and Recommended Projects**

| Action #   | Mitigation Action  | Reason for Pursuing / Not Pursuing  | Funding   |
|--|--|---|-----------|
| <b>Public Information and Outreach Measures Considered by HMPC and Not Recommended</b>     |  |   |           |
| -  | Develop a multi-jurisdictional program for public information.   | Most communities already coordinate their own public outreach efforts. Regional coordination may be considered in the future.   | n/a       |
| <b>Public Information and Outreach Measures and Funding Recommended for Implementation</b> |  |   |           |
| B10  | Hold an annual public hazard mitigation meeting, attended by the HMPC and participating jurisdictions, to educate the public and elected officials and receive comments about the location of high-risk facilities/development, the jurisdictions' overall vulnerability to natural and man-made hazards, and the jurisdictions' hazards mitigation efforts. | Beaufort County Emergency Services holds a public officials conference at least annually to educate decision makers on the vulnerability to hazards and mitigation efforts.   | GF        |
| CA16   | Mail a notice annually to all property owners in an effort to educate citizens about dangers associated with flooding in low-lying coastal areas.  | Targeted outreach is considered most effective. Carteret County mails all property owners a flood tips brochure with their tax bill. 100% of property owners receive this flood tips brochure. Property owners in Repetitive Loss Areas also receive annual notification of their susceptibility to flooding and grant opportunities. | GF, NCDPS |

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